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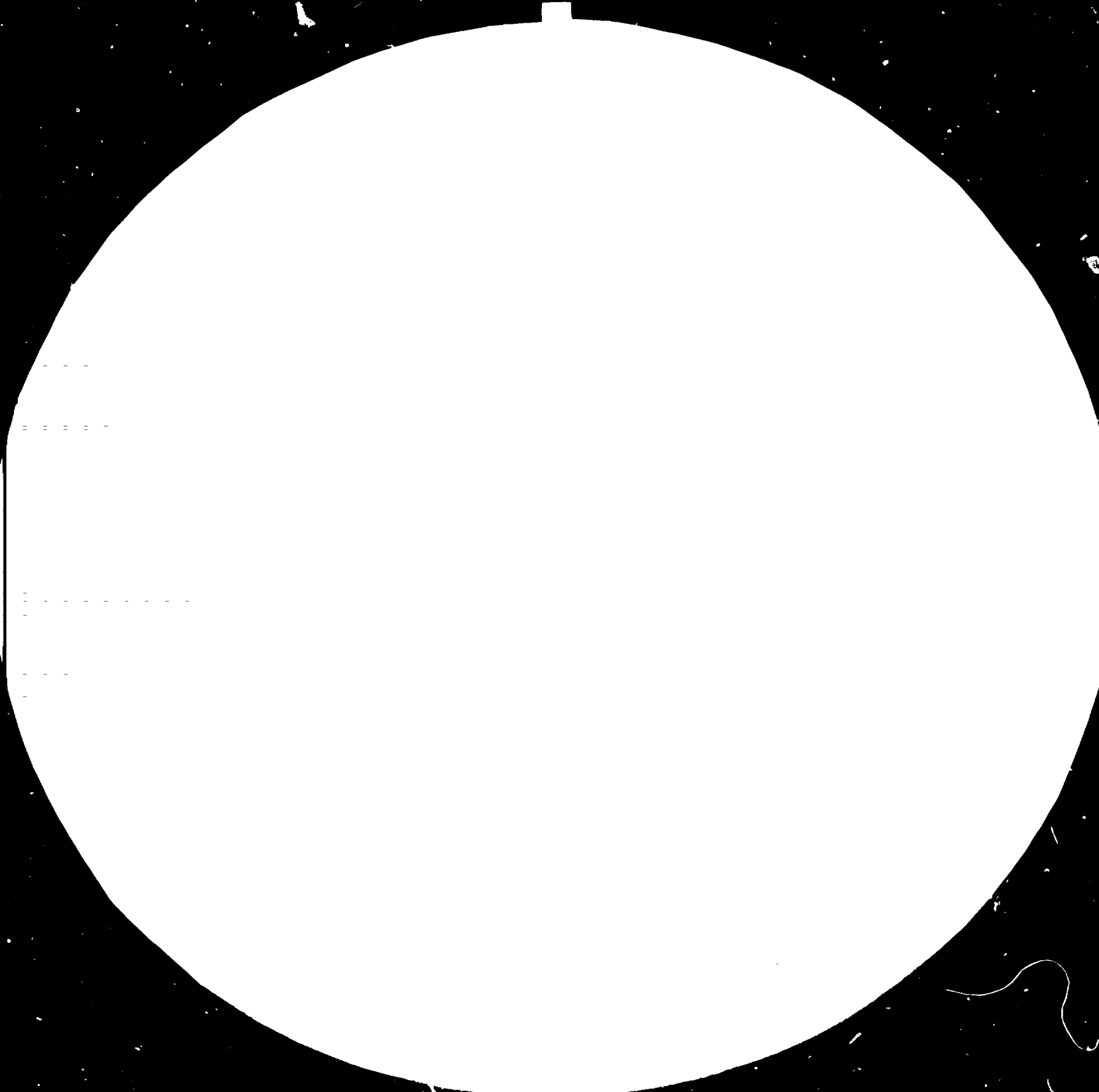
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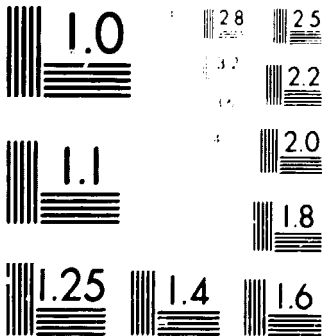
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V.83-57190

Preface

In the context of preparations for the Fourth General Conference of UNIDO (UNIDO IV), it was deemed important to organize five high-level expert group meetings on selected subjects having a bearing on the provisional agenda for UNIDO IV (attached as an Annex to this paper). Three of these meetings have already been held. They have dealt with the subjects of technological advances and development, industrial development strategies and policies for developing countries, and accelerated development of human resources for industrial development. A fourth meeting on energy and industrialization will be held after the present one later this year.

The reports of the meetings already held, which are before the present high-level expert group meeting as background documentation, should be read carefully since all the meetings in one way or another dealt with the subject that is at hand - industrial co-operation among developing countries (ICDC).*/ Indeed, although the subject of the present meeting relates directly to only agenda item 5(i) for UNIDO IV "strengthening economic co-operation among developing countries", it is apparent that ICDC will permeate most if not all of the agenda items. Hence the importance of the task before this expert group meeting which

*/ See Report of High-level Expert Group Meetings Preparatory to the Fourth General Conference of UNIDO: International Forum on Technological Advances and Development, document ID/WG.389/6, Tbilisi, USSR, 12-16 April 1983.

Report of High-level Expert Group Meetings Preparatory to the Fourth General Conference of UNIDO: Industrial Development Strategies and Policies for Developing Countries, document ID/WG.391/12, Lima, Peru, 18-22 April 1983.

Report of High-level Expert Group Meetings Preparatory to the Fourth General Conference of UNIDO: Accelerated Development of Human Resources for Industrial Development, document ID/WG.394/19, Yaoundé, United Republic of Cameroon, 30 May - 3 June 1983.

(ii)

is to review main issues and relevant experiences on the subject of ICDC and to formulate recommendations for a concrete programme of action at governmental level and for UNIDO on the subject, for the consideration of UNIDO IV.

This basic discussion paper, although it follows in its structure the provisional agenda of this expert group meeting, does not pretend to provide a comprehensive analysis of the complex subject of ICDC nor to provide ready made answers. In fact, it has been designed to pose questions and thereby set the stage for a discussion on the main issues requiring consideration as an essential step which this expert group needs to take towards the formulation of a concrete programme of action in the field of industrial co-operation among developing countries.

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I. ROLE AND POTENTIAL OF INDUSTRIAL CO-OPERATION
AMONG DEVELOPING COUNTRIES

A. The Present International Economic Situation and World Interdependence as it Relates to Industrial Co-operation Among Developing Countries (ICDC)

1. It will be recalled that the Lima Declaration and Plan of Action, pointed to the imbalance in world industrial output between the developed and developing countries, and set the target of at least a 25 per cent share for the developing countries in world manufacturing value added (MVA) by the year 2000. It also stipulated that the increase should be distributed among the developing countries as evenly as possible. Recent data (1980) indicated that the developing countries accounted for about 10.3 per cent of world MVA and 73 per cent of the world's population. ^{1/} If the same patterns of growth experienced since 1960 were to continue in the future, by the year 2000 the developing countries could expect to provide only 16.2 per cent of world MVA while accounting for 78.3 per cent of the world's population.

2. By 1979 the developing countries also claimed no more than a modest share of world MVA in any industrial branch. The relative importance of these countries was greatest in the cases of petroleum refining (34.7 per cent) and tobacco (32.7 per cent). However, they played only a very modest role in the case of heavy industries, like industrial chemicals (7.6 per cent), iron and steel (9.4 per cent), non-electrical machinery (4.7 per cent) and transport equipment (7.0 per cent).

3. The picture looks even gloomier when account is taken of preliminary estimates which indicate that the period from 1975 to 1981 resulted in little or no increase in the developing countries' contribution to world MVA. Moreover estimates of the distribution of the developing countries' share in world MVA by geographical region indicate that relative gains from 1960 to 1981 have often been erratic, occurring first in one region and later in others.

^{1/} Estimate (calculations) based on 1975 constant prices. See A Statistical Review of the World Industrial Situation, 1981, published by UNIDO, and United Nations Compendium of Social Statistics, 1977.

4. Concerning the least developed countries, during the period 1960-1980 the share of these countries in total MVA of the developing countries reached a peak of 2.42 per cent in 1967. Since then the least developed countries have tended to fall behind. By 1980 these countries accounted for only about 1.8 per cent of total manufacturing in the developing countries.

5. Compounding the deceleration in economic and industrial growth which began during the second half of the 1970s the developing countries find themselves plagued by high prices for intermediate and capital goods and technology and know-how services as well as by unfavourable terms and conditions for a shrinking flow of external financial resources to sustain their long-term industrialization efforts. At the same time developing countries are facing a deteriorating balance-of-payments situation due in large part to low prices for their traditional agricultural and mineral exports, restricted markets for their exports of manufactured goods, high energy costs and high rates of foreign debt servicing.

6. The industrialized countries on the other hand are facing problems of steadily growing unemployment, combined inflationary and recessionary pressures and slugging internal and external demand for their manufactured products coupled with industrial structural changes with their consequent social upheavals. There is also concern about securing the critical supplies of energy and natural resources to maintain minimum rates of growth in these countries. Consequently, industrialized country preoccupation with internal problems appears to be taking precedence over proper attention to international co-operation and of concern for the poverty in the developing countries. The new protectionist policies appear to partially reflect this attitude.

7. On the bright side, however, there appears to be a trend towards a general awareness of the existence of world interdependence - North-South as well as South-South - related to both short and long-term economic and industrial growth. On this rests the hope that industrialized countries with market as well as centrally planned economies will make significant contributions to renewed industrial growth in developing countries. Of equal if not more importance this awareness,

together with the obvious vulnerability of developing countries in the current international economic crisis has led to a realization of an over-dependence in the past of developing countries on the North for co-operation in the field of industrialization and a need for a collective effort on the part of developing countries that can provide the basis for an alternative development path. Most of the developing countries in the past have depended on the industrialized countries for finance, technology, plant and machinery and even technical and managerial manpower in some instances for their industrial plants. Even the planning, design, engineering and construction of the industrial plant has been undertaken by the Multinational or the collaborating firm from the industrialized country often as a turnkey package. For the output of their industrial plants, developing countries depend again on the markets of the North, particularly those developing countries which have limited domestic markets and have adopted Export led growth policies. Thus the dependence has been almost total.

8. This realization has brought with it expectations that the main efforts to resume the needed tempo to meet the targets for developing countries of the International Development Strategy for the Third Development Decade in general and to accelerate economic and industrial growth and social improvement in particular will need to come from within, either at the country level or as a result of more intensified co-operation among developing countries.

9. As was noted in the introduction to the Caracas Programme,^{2/} "It is all the more timely and necessary for the developing countries to strengthen the cohesion and solidarity among themselves".

10. The Programme of Action on the Establishment of a New International Economic Order also envisaged 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 accelerated development of developing countries".^{3/} It will be recalled

^{2/} Reports of the High-level Conference on Economic Co-operation among Developing Countries, Caracas, 13-19 May 1981, issued as United Nations General Assembly Document A/36/333, 26 June 1981, page iii.

^{3/} United Nations General Assembly resolution 3202 (S-VI), Section 1,1.b., Document A/9559, May 1974.

that the Lima Declaration and Plan of Action on Industrial Development and Co-operation further made the question of economic co-operation among developing countries of fundamental importance. This was reiterated in the New Delhi Declaration and Plan of Action.

11. Thus, pronouncements on the positive value of economic and industrial co-operation among developing countries have been made in various international fora. Nevertheless, it should be admitted that the experience of what has actually happened at a practical level has so far been minimal. There appears to be a need, therefore, to examine those elements - both conducive and restrictive - which influence the interest of the various actors involved to clearly identify the degree of will and commitment to industrial co-operation among developing countries (ICDC) and the role it can play in industrialization. Moreover, any evaluation of the role of ICDC in the process of industrialization must clearly define the criteria or yardsticks by which "success" in ICDC is to be measured.

B. Constraints as well as Elements Conducive to ICDC

12. South-South co-operation in the field of industry can be viable only if it provides a credible alternative to North-South links either in terms of access and/or conditions of availability of factors of production, i.e. skills, technology, finance, etc., and be based on equality and mutuality of interest, in the true spirit of interdependence. In fact, at present as pointed out above the major proportion of interdependence continues to be between developing countries on the one hand and the industrially advanced countries on the other, partly as a result of perceived or real softer options available from the latter countries.

13. Constraints to ICDC arise from the historical past of developing countries as well as from lack of adequate mechanisms for effectively handling such co-operation. Examples of the former might be: uncritical acceptance of the concept of the nation-state as an economic unit irrespective of its natural endowments or size; differences in language, political, administrative and legal systems; set consumption and production preferences favouring products and technologies originating in developed countries, the existence of institutional and physical infrastructure and

facilities that favour and/or tend to perpetuate developed-developing country co-operation and the leverage built up by developed countries to influence the industrialization process in the developing countries, including at times through their control of certain international development institutions. Example of the latter might be: lack of information systems on needs and capabilities to undertake ICDC; inadequate harmonization of industrialization strategies and policies oriented towards ICDC and lack of proper organizational capability at national, regional and inter-regional levels to facilitate ICDC.

14. Regardless of the above constraints, given the political will and commitment, present world conditions appear to be ideal for ICDC. First, such co-operation has become an imperative, if industrial growth and the economic and social benefits arising from it, are not to stagnate or in some cases decline further. Secondly, the developing countries as one collective unit by now already possess considerably resources and technology for their industrial development. They have: (a) the raw materials - minerals, fibres, coffee, tea, cocoa, sugar, cereals, etc. -; (b) technological and manpower capabilities; (c) physical and institutional infrastructure; and (d) significant financial resources, if capital surplus oil exporting countries are included. Thirdly, there is a significant measure of complementarity both in the resources and to some extent in the industrialization needs of the developing countries, given their various stages of industrialization, which with a proper stimulus could lead to mutually beneficial ICDC. Fourthly, vast markets for industrial products exist in the developing countries which could be exploited through ICDC and thereby lead to increased industrial capacity utilization and/or development of new capacity in these countries. In 1979, according to figures compiled by the World Bank, the total absorption of exports of manufactured products by developing countries was US\$290 billion out of which US\$257 billion or 89 per cent was from industrialized countries and US\$32 billion or only 11 per cent was from other developing countries. ^{4/} Finally, developing countries share in varying degrees similar historical backgrounds and face basically similar economic and social problems. By and large they are ex-colonies that achieved formal political independence relatively recently. They are moreover predominantly primary commodity producers

^{4/} See World Development Report 1982, pp. 132-133.

whose export earnings depend on a few products which render their economies vulnerable to development beyond their borders. In their attempt to solve their problems these countries have acquired a wealth of valuable experience in their industrialization processes which could be shared among themselves.

C. Pre-requisites for a Concrete Programme of Action in ICDC

15. The main question that emerges from the present chapter is that given a political will and commitment of developing countries to a significant role of ICDC in accelerated industrialization what are the pre-requisites for promoting an expanded and more effective flow of technology, capital and industrial skills among these countries. It is felt that such pre-requisites include: (a) the formulation of policies and incentives conducive to industrial co-operation among developing countries which are integrated within overall national development plans and policies, and are underpinned by considerations of equity and mutuality in the sharing of benefits, (b) the establishment of appropriate mechanisms at the national, regional and international level for execution of such policies, and (c) to clearly identify promising areas or projects where co-operation would be particularly effective and would contain an element of mutuality of benefits as well as be within the capabilities of developing countries to implement. These are the subjects of the following chapters of this paper.

D. The Main Issues

16. The main issues that arise out of the present chapter and require consideration are:

1. Given the current international economic crisis and the high degree of dependence of developing countries on the industrialized countries, is it worthwhile to consider the role of ICDC as a desirable option, and to determine the manner in which political will can be translated into increased industrial co-operation?
2. Is the present practice and pattern of ICDC tending indeed to show a real political will and commitment to it on the part of

developing countries?

3. Do the elements conducive to ICDC outweigh the constraints?
4. Should guidelines for evaluating "success" of ICDC programmes and projects be developed?
5. Is there consensus on the pre-requisites for accelerating and magnifying the impact of ICDC?

II. POLICY OPTIONS AND INCENTIVE SYSTEMS CONDUCTIVE TO INDUSTRIAL CO-OPERATION AMONG DEVELOPING COUNTRIES

A. Integration of Policies and Incentive Systems Conducive to ICDC Within Overall Strategies and Policies for Industrialization

17. The purpose of increasing the amount and the favourable characteristics of ICDC follows from the expectation that this will increase the technical capabilities and the industrial activity of the co-operating countries, through national and collective self-reliance. Thus ICDC should be viewed as part of the developing countries' efforts aimed at accelerated industrialization.

18. Industrialization strategies and policies in developing countries, however, have been generally formulated and executed independently of the process of co-operation among developing countries. Given the political will and a genuine commitment to ICDC, it is felt that this is an opportune time to take stock of the present situation and to determine the significance of such a commitment on the industrialization policies of developing countries.

19. There appears to be a need for a policy and legal framework to strengthen and/or establish proper institutional mechanisms to promote and facilitate ICDC at global, inter-regional, regional and bilateral levels on the one hand and to support and co-ordinate the activities of

such mechanisms on the other. For such a policy framework to be effective it is felt that first it should be fully integrated within the overall strategy and policies to promote economic and industrial development at the national level, and secondly that it should be harmonized with similar policy frameworks of other developing countries.

20. It should be noted here that the High-Level Expert Group Meeting preparatory to UNIDO IV on Industrial Development Strategies and Policies for Developing Countries, held in April 1983 ^{5/} pointed out that if the world economy grows only slowly in the years to come the countries of the South will necessarily have to rely more than in the past on their internal dynamics, on the growth of internal demand, than on world market forces to generate economic expansion. They will need selective import substitution as appropriate, more internally originating technological development, and more economic and technological co-operation among themselves. It was moreover recognized that such industrial re-orientation or re-structuring would be easier to implement for the larger countries and for those at relatively more advanced stages of industrial development. For smaller countries and those which are at a relatively lower level of industrialization, international co-operation, particularly via regional and other integration schemes, may be essential.

21. It is beyond the scope of this paper to prescribe policies and incentive systems conducive to ICDC of general applicability. Perhaps it is not possible to do so a priori since a developing country's industrial strategy and policies of which, as has been noted, policies conducive to ICDC need to be an integral part can be expected to vary according to its chosen style of development, level of industrialization already achieved, geographical size and location, etc., and according to its policy responses to dynamic changes in the international economic situation.

^{5/} Report of the High-Level Expert Group Meetings preparatory to the Fourth General Conference of UNIDO: Industrial Development Strategies and Policies for Developing Countries, Lima, Peru, 18-22 April 1983, document ID/WG.391/12, pp. 18, 19.

B. Orientation of Policies and Incentive Systems Conducive to ICDC

22. What can be considered nevertheless are particular orientations that policies and incentive systems conducive to ICDC should take at global as well as at regional and bilateral levels to achieve concrete objectives. At a global level, such policies and incentive systems should as a matter of priority give expression and coherence to objectives and activities of international institutions that developing countries might consider establishing to take action on a collective basis to accelerate their industrialization, and should therefore be oriented towards:

- (a) strengthening the negotiating capacities of developing countries to obtain fair and equitable conditions from the developed countries in the transfer of technology and managerial know-how, finance, energy and capital and intermediate products for industrialization;
- (b) sharing of information and facilitating the flow of human, technological, energy and financial resources between the developing countries;
- (c) increasing direct foreign investment and encouraging redeployment of industry between the developing countries, particularly to the least developed countries;
- (d) increasing South-South trade in manufactured goods between the developing countries.

23. At a bilateral, regional and inter-regional level, policies and incentive systems conducive to ICDC should be oriented towards:

- (a) co-ordinating and harmonizing of national industrialization plans and promotion of regional industrial sectoral planning and programming;
- (b) establishing of multinational industrial enterprises in key priority areas and based on the utilization of local raw materials;
- (c) promoting joint ventures between industrial enterprises, both public and private, of developing countries;

- (d) encouraging of joint tenders and project development by engineering design and consultancy organizations in developing countries;
- (e) strengthening regional and inter-regional industrial and professional associations of the developing countries;
- (f) ensuring for special treatment of countries in the initial stages of industrialization in the sharing of costs and benefits related to particular ICDC projects;
- (g) developing financial co-operation for project development and industrial investment.

C. The Main Issues

24. The main issues that arise out of the present chapter and require consideration are:

1. Is there a recognition that policies related to ICDC to be effective should be integrated within overall strategies and policies for industrialization at the national level and that they should be co-ordinated and harmonized at regional, inter-regional and global levels? This issue is closely related to a recognition of a need to re-orient present economic and industrial development strategies and the role which individual developing countries would like to assign to collective action and ICDC in such a re-orientation.
2. Have developing countries reached the stage where political will and commitment to ICDC can be translated into policies oriented towards the establishment and/or strengthening of an institutional framework that will support the taking of concrete collective action on a global level and that will facilitate ICDC at bilateral, regional and inter-regional levels?
3. Should broad principles such as equality and mutual benefit, and solidarity and mutual assistance be adopted in policy formulation related to ICDC, particularly to avoid that the least developed countries become the new periphery for the industrial centres in the developing world?

III. MECHANISMS FOR PROMOTING INDUSTRIAL CO-OPERATION AMONG DEVELOPING COUNTRIES

A. Spheres and Modes of Industrial Co-operation

25. It would be useful to briefly look at the inputs needed for the setting up and operation of an industrial enterprise, to be able to perceive the elements which - single or in combination - comprise industrial co-operation, and thus appreciate better the linkages and mechanisms which promote ICDC. An industrial manufacturing unit goes through a cycle of events which starts with the conceptualization and formulation of a project, its implementation through inputs of technology, consulting engineering and design, capital equipment, trained human resource, and finance, till it reaches its operational stage. At the operational stage, it needs industrial raw materials, utilities and services, manpower and operating finance or working capital. It also needs a market - domestic and foreign - for its products. An industrial manufacturing unit operates in an ambience which includes government policy, strategy and planning framework on the one hand, and industrial infrastructure - electrical energy, water, transport, communications - on the other. To sustain an industrial unit a host of institutions are also needed, which form the institutional infrastructure. These include R+D institutes, consulting and design engineering firms, standards institutions, industrial safety units, productivity centres, industrial finance institutions, vocational training and academic institutions, etc. No significant industrial manufacturing base can be sustained over a period of time without the supportive institutional infrastructure. During the operational phase of the industrial manufacturing unit, several problems arise relating to efficiency of operation, capacity utilization, market changes, product line diversification, etc. These call for a well-developed management consultancy profession.

26. There are four principal spheres of possible co-operation in the industrial field. They are:

- Industrial development policies, strategies and planning
- Industrial manufacturing unit, and its critical elements
 - Technology
 - Consulting engineering and design
 - Capital goods and equipment
 - Finance
 - Human resource
 - Marketing
- Institutional infrastructure for industry
 - R+D
 - Engineering consultancy and design
 - Standards institutions
 - Industrial safety
 - Productivity centres
 - Industrial Finance institutions
 - Management consultancy
 - Vocational training and academic institutions
- Physical infrastructure for industry

27. ICDC can take place in the spheres outlined above either through commercial channels (i.e. between public or private industrial enterprises) or non-commercial channels when the actors involved are not necessarily seeking a monetary reward or profit. The latter activities in general are executed by governments and their agencies through different types of agreements, in a bilateral or multilateral manner, not infrequently with the participation of international organizations which provide part of the resources needed to establish co-operation flows. The two types of industrial co-operation - non-commercial and commercial - can be regarded as complementary. In many cases non-commercial co-operation sets the stage for commercial co-operation activities carried out by enterprises, or gives the latter information, technological and scientific inputs that enhance their efficiency.

B. Scope of Industrial Co-operation Activities Between Developing Countries

28. Three main situations can be visualized according to the level of industrialization of the co-operating countries which generally define the scope of industrial co-operation activities between developing countries. These are:

(a) Two (or more) countries at the stage of early or incipient industrialization

The key problems here are related to the building up of industrial production capabilities, which needs enlarged markets. An initial stage of simple consumer goods may rely on existing resources and traditional technology. More complex industrial activities need outside technology, services, key personnel and possibly financing. Another key problem is the building up of institutional infrastructure in research education, standards, engineering services, etc. Strategies for coping with these problems may be:

- (i) Integration arrangements (free trade area, common market) to provide enlarged markets, allowing country specialization and complementation between products of different countries.
- (ii) Simple consumer goods may be produced mainly with traditional or freely available technology. However, some outside technical assistance may be needed. This may be obtained from a more industrialized developing country.
- (iii) More complex activities will inevitably need outside contributions, and the point is whether this may be obtained from other developing countries at higher level of industrialization, rather than from developed countries. Governments and international organizations have an important role to play through studies, contacts, information, and promotion policies; but the main actors are the enterprises, either public or private.

(iv) ICDC can also help in developing supporting institutional infrastructure, possibly at a sub-regional level, through non-commercial co-operation between government agencies, universities and various associations.

(b) Two countries of different levels of industrialization

Key problems here are similar to those reviewed in (a) above, i.e. installation of manufacturing and of institutional infrastructure capacities, and the strategies would also be similar. But in a fairly large developing country that is starting to enter more complex industrial areas, an interesting co-operation possibility may appear: the development of a complete industrial system, in which process one or more developing countries of higher industrialization levels may play an important role. Such a system would comprise not only the productive establishments but also other actors that participate in the development of an activity or branch - consulting, engineering and construction firms; capital goods producers; R+D organizations; education and training institutions; financial institutions, etc.

(c) Two developing countries of a relatively advanced industrial level

ICDC in this situation would be aimed at two key problems: how to profit from each other's industrial and technological capabilities, and how to keep close to the technological frontier in different areas, particularly research-intensive ones.

Strategies for coping with these problems would comprise, among others:

- (i) An enlarged market for industry and for technology, requiring actions within existing multilateral integration schemes and in some cases ad-hoc bilateral arrangements.
- (ii) Joint efforts in R+D and in technology matters.

C. Instruments of Industrial Co-operation Among Developing Countries

29. Different instruments have been adopted by governments and industrial enterprises in promoting and carrying out industrial co-operation.

Naturally, the efficiency of the instruments and their role is determined by a variety of factors, including the nature of the economy (i.e. planned market oriented or mixed), the depth of commitment to industrial co-operation arrangements and the political will and determination shown in overcoming obstacles that arise in the practical implementation of co-operation arrangements. This chapter attempts to provide an overview of the instruments which have been put into practice at various levels - from the level of the enterprise to the global level - and to initiate a discussion for consideration by the expert group of some institutional requisites for ICDC that appear to need either strengthening or establishment at the various levels.

1. At the Enterprise Level

(a) Industrial Joint Ventures

30. At enterprise level co-operation among developing countries has mainly come about as a result of industrial joint ventures, in most cases between enterprises in the private sector, both of the equity type and the non-equity type. In the former type, equity is either in the form of capital or in the form of machinery and equipment, technical know-how, etc. In the non-equity type of joint ventures, the participation of the foreign partner is on the basis of a management fee or remuneration. His contribution generally comprises "Technology" or "Management Expertise".

31. There are, however, some important aspects of industrial joint ventures (IJVs) which need to be examined. First, in many developing countries public sector enterprises or parastatal organizations have emerged as important industrial enterprises. The emergence of the public sector enterprises as IJV partners and the role they can play as instruments of co-operation is worth examining.

32. Secondly, there have been some problem areas in joint ventures between enterprises in developed and developing countries. These essentially relate to:

- Political risks and limitations: political dominance, neo-colonialism;
- Concept of self-reliance: do joint ventures help or impede self-reliance?

- Conflict of sharing of costs and benefits;
- Conflict of management styles;
- The problems of transfer pricing, over/under invoicing
- Interlocking arrangements

33. There is some concern, particularly among the less developed of the developing countries, that IJVs among developing country enterprises may turn out to be not significantly different from the traditional North-South joint ventures. Experience in this respect has been a mixed one. Keeping the ICDC principles in view, the appropriateness of adopting guidelines for IJVs among developing countries may be worth discussing.

34. Thirdly, an interesting issue worth considering is the manner in which barter and buy back arrangements can be effectively used in IJVs, in view of the present monetary exchange constraints of many developing countries.

(b) Multinational Economic Units and Production Enterprises

35. Another form which industrial co-operation at enterprise level has taken is the multinational economic units. These have been particularly popular in the Andean Pact countries in Latin American and among the Asean countries. Some problem areas have, however, emerged in some cases and need consideration. One relates to the allocation of benefits - who gets how much? Particularly in the case of vertical integration of industries, the question arises whether value added is an index of Return on Investment (ROI). Downstream value added is always much higher than in the earlier stages of industrial raw material conversion. However, the owner of the industrial raw material legitimately raises the question that if there were no raw material available, there would be no value added whatsoever.

36. Another problem relates to horizontal integration, where components are manufactured in different enterprises in different countries based on comparative advantage. This system has proved effective as practised by Transnational Corporations, as seekers of efficiency, because individual

enterprises are backed by central design, standardization, and control systems. Alternative mechanisms have to be considered in the case of such operations among developing country enterprises, who often lack such centralized resources of the required magnitude.

(c) Intergovernmental Agreements

37. Another form of industrial co-operation which needs to be noted is that established through intergovernmental agreements, which provide the foundation for the promotion of co-operation between organizations, enterprises and firms of the countries involved. These agreements stipulate that governments shall promote industrial co-operation, create the necessary legal, financial and commercial framework for concluding individual contracts, identify opportunities for industrial co-operation in specific sectors, and provide for access to the market in their respective countries for the products manufactured under such agreements. Specific contracts are then concluded at the level of organization and enterprises of the countries involved. This type of agreement has been mainly entered into by the Socialist countries of Eastern Europe with developing countries, as well as with developed West European countries. However, such types of agreements represent a potential instrument for the promotion of industrial co-operation among developing countries at the enterprise level and should therefore receive due consideration.

2. At the National Level

38. A number of developing countries have set up National Focal points for the purposes of external co-operation and exports. Such focal points include Investment Promotion Centres, Technology Transfer Registries, Councils of Scientific and Industrial Research, State Trading Organizations, and a host of others. Such institutions as well as national chambers of commerce and industry can play a vital role as focal points for collection and dissemination of information in their respective fields, and also as linkage nodes in regional and sub-regional networks of industrial co-operation. For this purpose these institutions need to be provided with a proper orientation and adequate regional and international support.

3. At Regional and Inter-regional Levels

39. Regional and Inter-regional industrial co-operation mechanisms can be effective instruments leading to achievement of progressively higher degrees of complementarity, specialization and efficient use of resources. At present, ICbC at this level is mainly being attempted in the context of regional and sub-regional integration schemes directed towards the expansion of trade in manufactures, the allocation of industrial activities among member countries and the expansion of production through the promotion and establishment of joint ventures. The presentation in the following paragraphs of this section is limited to providing two illustrative examples of such schemes in Asia and Latin America.

40. The Association of South East Asian Nations (ASEAN) comprises Indonesia, Malaysia, the Philippines, Singapore and Thailand, and came into existence in 1967 with the overall objective to accelerate the economic growth and the social and cultural development in the region through joint endeavours in the spirit of equality. However, it was only the Bali summit held in 1976 that led to the signing of the Declaration of Asean Concord, which put forward a programme of Action as the framework for ASEAN co-operation.

41. Economic co-operation in the ASEAN has a programme comprising: (1) Trade Liberalization, and (2) Industrial Co-operation. The industrial co-operation component has taken two forms. One is the identification and allocation of large ASEAN industrial projects (AIPs), where scales of production are important for economic viability, and thus need regional markets as national markets are insufficient to maintain the economic level of production. These large industrial projects are negotiated and decided at the governmental level. The other aspect comprises of ASEAN industrial complementation projects (AICs) which introduce complementarity in production, by breaking the production process in its components, and having these components manufactured in different enterprises in different countries depending on their comparative advantage. Thus the industrial complementation programme aims at efficient use of resources in a complementary fashion. The industrial complementation programme was to be achieved primarily through private initiative.

42. In March 1976, the ASEAN Economic Ministers met in Kuala Lumpur, to identify and allocate the First ASEAN Industrial Projects (AIPs) package. Soda Ash project was allotted to Thailand; Diesel Engine Project to Singapore; Superphosphate project to the Philippines; and two Urea projects to Malaysia and Indonesia each. Each project was estimated to cost approximately US \$300 million. Two of the five projects, namely Phosphates Project in the Philippines and the Diesel Engines Project in Singapore, were abandoned. The Soda Ash Project in Thailand is still in the feasibility stage, while the two Urea Projects in Malaysia and Indonesia, are under construction. A second package is in prefeasibility stage.

43. A basic agreement on ASEAN Industrial Complementation was signed by the ASEAN Foreign Ministers in October 1980. Important provisions of the Agreement are the following:

- (a) An AIC package must be participated in by at least four of the five member countries, unless otherwise approved by the ASEAN governmental organizations.
- (b) Identification of products for inclusion in an AIC package shall be done by the ASEAN Chamber of Commerce and Industry (ASEAN-CCI); while the approval of the package and associated trade preferences shall be undertaken by the ASEAN governmental organizations.
- (c) The products in the AIC package shall receive "exclusivity privileges" for 2 years for existing products or 3 years for new products.

44. So far some 30 AIC proposals have been considered. However, only two AIC packages have been approved by the ASEAN Economic Ministers. Both are in the Automotive Industry - the first package is concerned with "existing products" and the second package with "new products".

45. The Andean Subregional (Cartagena) Agreement was signed in 1969 by Colombia, Chile, Peru, Bolivia and Ecuador. Venezuela joined in 1973 and Chile left a few years later. The countries forming the Group had small internal markets and the main purpose was to have joint industrial sectoral programmes, with trade liberation playing a complementary role.

46. The main activities related to industrial co-operation in the Andean Agreement have been:

(a) Industrial programming

This is considered as the fundamental mechanism of the Andean Pact. Three Sectoral Programmes of Industrial Development have been approved, in metal-mechanics, automobiles and petrochemicals, while the one on iron and steel is still under negotiation and others - fertilizers, chemical products, pharmaceuticals, electricity and communications - are yet to be taken up.

(b) Programmes of "Racionalización Industrial"

These are programmes for existing industrial branches aimed at helping national producers improve their productivity and rationalize their production so that they can work for the sub-regional market. Most of the work undertaken has been in the textile and bicycle branches, through surveys and meetings, often with the purpose of arriving at common specifications.

(c) Andean System of Technological Integration (SAIT)

This was inaugurated in 1981, and the following projects were selected: exchange of information on direct foreign investment, international prices, technology transfer contracts, application for patents and trademarks; technical information contained in patents registered in the subregion; inventory of local supply of technology that may be commercialized; search and diffusion of alternative technologies; regulations about standards for information classification and exchange.

(d) Andean Programmes of Technological Development (PADT)

These are long-term programmes, of which two have been operating

for a few years:

- PADT on Metallurgy. Peru and Bolivia co-operate in developing a method for the extraction of metallic copper from residues by means of bacterial digestion, having reached the pilot plant stage.
- PADT on Tropical Forest Resources. Centres of Forest Research have been set up in the participating countries, usually at universities. A first step of the project has been research on the technical characteristics of tropical wood species. A second step now being conducted consists of the development of construction techniques for economic dwellings using tropical wood; the project has now reached the prototype and feasibility stage.

(e) Other activities of the Andean Agreement that have a bearing on industrial co-operation may be briefly mentioned: establishment of a common external tariff; establishment of trade liberalization between member countries; joint action in the fields of agriculture, infrastructure and the social sector.

47. In concluding this section it should be underlined that to date the actual achievements in the field of industrial development of the various sub-regional and regional integration schemes appear to have been limited; consequently there is presently a re-assessment and re-orientation process taking place in many of them. The sharing of experiences within a context of ICDC at an inter-regional level would appear to be useful for such a re-assessment and re-orientation process.^{6/}

4. At the Global Level

48. It is felt that ICDC instruments at a global level should have a twofold purpose: they should on the one hand provide support for ICDC

^{6/} See Report of ASEAN/Andean Pact Conference and Study Tour on Regional Industrial Co-operation, organized by UNIDO with UNDP financing, document UNIDO/IS/R.9, Lima, Peru, 11 - 23 October 1982.

activities at bilateral, regional and inter-regional levels ^{7/} and on the other strengthen the negotiating position of developing countries vis-à-vis the developed countries in the acquisition of technology and other resources for industrial production as well as in the securing of markets for their manufactured exports. The following paragraphs highlight a few such instruments for the consideration of the expert group meeting.

49. Many potential ICDC projects at the enterprise level go to the industrialized countries because transnational corporations and other organizations such as plant and equipment suppliers in the developed countries often undertake the preparation of feasibility studies on a free of charge basis. A Project Development Facility for developing countries by assisting in the proper formulation and preparation of industrial projects, including pre-feasibility and feasibility studies and bankable project proposals would provide a viable alternative to this. In fact UNIDO III in its New Delhi Declaration and Programme of Action considered such a Project Development Facility as essential. The Non-aligned summits also have considered and endorsed such a facility, the most recent at New Delhi in March 1983.^{8/}

50. An Industrial Project Information System would also help considerably in efforts towards increased ICDC. Such a system could collect and disseminate information through national focal points about industrial projects under consideration or in the planning stage in various countries, so that possibilities of ICDC could be explored at an early stage of industrial project planning and design, thus improving considerably the chances of realizing joint ventures and operational level co-operation between enterprises in developing countries. UNIDO's Industrial and Technological Information Bank (INTIB) could perhaps expand its scope to include such a service, if considered essential.

^{7/} See Background Paper "UNIDO's Activities for Promoting and Implementing ECDC/TCDC".

^{8/} See draft Economic Declaration of Seventh Conference of Heads of State or Government of Non-aligned Countries, New Delhi, March 1983. Document NAC/Conf.7/Doc.6/Rev.3, 11 March 1983.

51. An essential factor in industrialization is the provision of adequate finance. At present the frightening scale of external debt service charges, the widening balance-of-payments deficits, and the threat of contractionary policies induced by conditions attaching to IMF lending, are issues which cannot be tackled by any developing country on its own. In the face of such a bleak outlook, the proposal made under the Caracas Programme of Action of the Group of 77 to set up an international bank for development in the South could constitute part of the response of the Third World countries in their search for the New International Economic Order. UNIDO has put up a proposal for countries to join in setting up an International Bank for Industrial Development. This proposal is still on the table. Its structures could readily be adapted to establish a Development Bank for the South to provide not only project financing but also viable mechanisms for promoting multinational industrial ventures and rendering technical assistance on the matter.

52. Finally, another essential instrument at a global level could be the establishment of a Third World Economic Secretariat with the limited but crucial objective of assisting the developing countries in their international economic negotiations, and more importantly, of assisting them to promote and realize their enormous potential through co-operation among themselves, including in the field of industrial development.

D. The Main Issues

53. The main issues that arise out of the present chapter and require consideration are:

1. Are the present mechanisms at national, regional and global level adequate for the scope and magnitude envisaged for ICDC, and what needs to be done to strengthen such mechanisms to render them more effective and appropriate?
2. Industrial joint ventures being the most prolific and promising vehicle for industrial co-operation at least at the enterprise level, should "guidelines" be evolved for such joint ventures among developing countries to inject the concept and principles of ICDC and what mechanisms still need to be established to accelerate further their realization?

3. Do public enterprises which have emerged in a number of developing countries have a potential as effective instruments of ICDC?
4. Given that one of the major inhibitants to ICDC projects has been lack of adequately prepared projects, would the creation of a Project Development Facility for developing countries help in accelerating the pace of ICDC?
5. Would a crucial functional sector for industrialization, such as finance benefit by the establishment of a Third World global institution for the purpose of accelerating financial flows and what steps need to be taken for its realization?
6. Does the lack of a global economic secretariat for developing countries seriously hamper economic co-operation among developing countries in general and ICDC efforts in particular, and if so, what steps should be taken to remedy the situation?

IV. PROMISING AREAS FOR ICDC WITH EMPHASIS ON THE CRITICAL
REQUISITES FOR INDUSTRIAL PRODUCTION

54. The preceding chapter has already highlighted some potential institutional mechanisms for ICDC as viewed primarily from a perspective of various geographical levels. In this last chapter the search for promising areas for ICDC - for consideration by the expert group meeting - continues but the aim here is to put a sharper focus on the critical requisites for the operation of industrial production units, i.e. human resources, technology, energy, finance, marketing, industrial consultancy. The narration often leads, perhaps unavoidably, to activities of which UNIDO has become directly involved in assisting the process of ICDC. This chapter, however, does not pretend to be exhaustive in this regard. A detailed outline of UNIDO activities related to ICDC is contained in a background paper before the expert group meeting (document UNIDO's Activities for Promoting and Implementing ECDC/TCDC).

A. Human Resources

55. Trained manpower with adequate and appropriate skills is one of the most important requisites for the operation of industrial production units. The Lima Declaration emphasized the need for the development of human resources for industry, and the developing countries were called upon to "... establish training programmes to cover the needs of their industrial development ... thus facilitating the establishment of structures to absorb modern technologies".^{9/}

^{9/} See Accelerated Development of Human Resources for Industrial Development: Some Issues for consideration, document ID/WG.394/1. The document was one of the basic discussion papers before the High-level Expert Group Meeting on Accelerated Development of Human Resources for Industrial Development, preparatory to UNIDO IV, Yaoundé, United Republic of Cameroon, 30 May - 3 June 1983.

56. Considerable scope exists for increasing ICDC activities already taking place in this area, particularly when one considers that industrial training in another developing country should be more appropriate as the training conditions, environment factors and problems to be solved are likely to have much greater similarity, and the costs are less. Entrepreneurship development and management development not alienated and divorced from developing country situations, are in fact two key areas of priority for the development of industry.

1. Regional Networks of Training Institutions and Centres of Excellence

57. One of the promising areas for ICDC in the area of human resources is to establish Regional Networks of Training Institutions and Centres of Excellence in the developing countries to provide a wide range of appropriate training and development programmes to suit the changing profile of industrial and technological needs in these countries. Through such networks, in plant training programmes also could more effectively be organized in industrial plants of developing countries. The network of vocational training institutions in the Latin American region, CINTERFOR, (Centro Interamericano de Formación Profesional), could be cited as an example of the former. The members of CINTERFOR have already achieved a high degree of technological autonomy they have collectively acquired, and they have undertaken a number of joint activities in the development of human resources.

58. With regards to Centres of Excellence, UNIDO is seeking to identify existing training institutions/centres, assess their capabilities and potential and develop technical co-operation projects to strengthen such centres to serve both national needs and, as appropriate, those of other developing countries. After identification and assessment, the selected institutions are assisted to strengthen training capacities and capabilities; to develop a network for improved co-operation among industrial training institutions; and to exchange information on programmes developed to meet the short, medium and long-term needs of developing countries. A survey already conducted in the ESCAP region has covered 11 countries and 65 institutions have been assessed so far.

2. Training for Industrial Manpower

59. Reference on this subject in relation to ICDC is made to the various points raised and the recommendations emerging from the following meetings: High-Level Meeting of Officials Responsible for Industrial Manpower Training in Developing Countries, organized by the Group of 77, in Bucharest, Rumania, 31 May - 4 June 1982; High-Level Expert Group Meeting Preparatory to UNIDO IV on Accelerated Development of Human Resources for Industrial Development, organized by UNIDO, in Yaoundé, United Republic of Cameroon, 30 May - 3 June 1983; First Consultation on the Training of Industrial Manpower, organized by UNIDO, in Stuttgart, Federal Republic of Germany, 22 - 26 November 1982.

60. The ultimate goal should of course be that developing countries achieve self-reliance in the area of human resource development for industrialization. This would imply transplanting to individuals and training institutions in these countries the ability to do things for themselves and to assist them in the establishment of schemes for the sharing of industrial skills.

B. Technology

61. The way out of the South's technological dependence on the North needs to include the development of a technological capability in industrial production. In fact, without a concerted effort on the part of developing countries, mainly through ICDC, the Third World will become helpless observers of new and emerging technologies, as noted in the International Forum on Technological Advances and Development, preparatory to UNIDO IV.^{10/}

^{10/} See Report of International Forum on Technological Advances and Development, Tbilisi, USSR, 12-16 April 1983, document ID/WG.389/6.

1. The Emerging Technological Advances

62. The above Forum, inter-alia, examined the newly emerging technologies in the fields of genetic engineering and biotechnology and micro-electronics. There is an apparent need to establish international research and training centres of excellence in these areas through ICDC. Such centres could, moreover, be instrumental in the systematic building up of linkages with national centres including assisting in the creation of such centres, and the promotion of regional centres and networks in their respective fields of specialization. UNIDO has already come a long way in promoting the establishment of such an international centre for the developing countries in the area of genetic engineering and biotechnology.^{11/}

2. Co-operation among R+D (Research and Development) Institutions

63. R+D institutions have been functioning for over two decades in a number of developing countries of Latin America, Africa and Asia, such as Brazil, Mexico, Argentina, Algeria, Egypt, Indonesia, India and the Philippines, to name a few. Considerable reservoir of capabilities and experience has been built up over the years in creating technological appropriate to varying needs of developing countries and adaptation of technologies acquired from industrialized countries. R+D institutions also exist on a sub-regional basis in the Asian and the Latin American regions. Networks of R+D institutions on a regional basis, would prove of great benefit for undertaking joint R+D projects for which specific need exists in one or more countries of the region. There should also be inter-regional interaction among regional networks of R+D institutions for exchange of information and experience, pooling of resources and sharing of knowledge. Regional networks for technology transfer and contracting,

^{11/} See Report of High-level Meeting on the Establishment of the International Centre for Genetic Engineering and Biotechnology, document ID/WG.382/7, Belgrade, Yugoslavia, 13-17 December 1982.

such as the Regional Centre for Technology Transfer (RCTT) for the Asian and Pacific regions and the African Regional Centre for Technology could also prove useful in this regard.

3. Technological Information Exchange System (TIES)

64. UNIDO operates a technological information exchange system among technology transfer registries in a number of developing countries. Detailed information on contracts for specific technologies is provided through TIES to member institutions. A coding manual for exchange of information on service agreements is also in operation, while a methodology for evaluation of technology payments as well as guidelines for software licensing agreements are being developed.^{12/}

65. A common denominator of technology transfer registries is that they have regulatory, co-ordinating, promotional and monitoring functions. The nature of the national technology transfer policy determines which function dominates. Through the establishment of the system of TIES (Technological Information Exchange System) by UNIDO, significant co-operation has been achieved among technology transfer registries, in developing countries, in the exchange of economic and technological information contained in approved and registered contracts. The information is exchanged on a confidential, reciprocal, equal and mutually beneficial basis. In practice, this means that only those registries which supply data to TIES will receive data through TIES. It also means that when a registry is legally restricted to supplying certain data only, it receives through TIES only data at that level. It is felt that in this way reciprocity would be maintained and a co-operative spirit safeguarded.

66. A further strengthening and expansion of TIES would undoubtedly increase the technological capabilities of domestic industrial enterprises in negotiating

^{12/} See Information Paper on Technological Information Exchange System (TIES), document UNIDO/IS.185/Rev.1, 1 July 1982.

for the acquisition of technology and strengthen the collective bargaining position of the developing countries in the technology market.

C. Energy

67. Co-operation among developing countries is taking place in several energy sectors. For instance, the largest dam in the world, Itaipu, between Brazil and Paraguay has already started its operations. Joint hydro-electric developments are also under way between Senegal and Mali and Mauritius, and Burundi with neighbouring countries. Co-operation in the field of petroleum is being provided by Mexico and Venezuela to the Caribbean and Central American countries. At the regional level useful work is being done by the Latin American Energy Association (OLADE), the African Solar Energy Committee, the Arab Petroleum Institute, the Energy Programming for the Central American Isthmus, and in ASEAN to establish emergency petroleum-sharing plans and an ASEAN petroleum security reserve. A Regional Energy Development Programme (REDP) is also under way in the ESCAP region under a UNDP/ESCAP project.

68. However, what is of particular concern here is the impact of Energy on Industry. Since energy is an important input for the operation of industrial production units, and because of the various constraints being felt by developing countries in this field which have had a direct and significant impact on the pace and direction of industrialization, energy promises to be an important area for ICDC. Components of such co-operation can be joint projects such as hydro-electric projects for industrialization, joint R+D on new sources of energy such as solar, bio-mass and others; and R+D on technology requirements to improve the extraction, conversion and industrial application aspects of energy sources such as coal.

1. Regional Network for Small Hydropower (RN/SHP)

69. UNIDO and ESCAP have closely co-operated during the last three years with the UNDP and with Governments and Agencies in Asian countries in promoting the development of small/mini hydropower generation in the region. Three workshops and one expert group meeting have been held on the subject, the first in Nepal in September 1979, the second in China and the Philippines

in 1980 and the third in Malaysia in 1983; the expert group meeting took place in 1982 in China. These efforts have culminated in the establishment of Regional Centre for Research, Development and Training in small/mini hydropower in Hangzhou, China; the Regional Centre will be used as a focal point in a network of national mini hydropower generation organizations or institutions designated by individual member countries of the region. The Centre will act as a catalyst with the following development objectives:

- (a) to undertake scientific research and technical development in the field of small/mini hydropower;
- (b) to exchange technical information on small/mini hydropower generation;
- (c) to carry out technical training of personnel from developing countries in small/mini hydropower; and
- (d) to provide technical advisory services and assistance to developing countries in small/mini hydropower.

More than 10 Asian developing countries are expected to participate in the networking arrangements through designated focal points.

2. Bio-fuels and Syn-fuels

70. UNIDO's technical co-operation projects on bio-fuels and syn-fuels in Brazil, China, India and the Philippines are addressing major research and development problems of interest to other developing countries. These four countries have agreed to share the results of UNIDO's project with other developing countries and to collaborate with them on the basis of ICDC.

3. Industrial Energy Management

71. Following a four week programme on industrial energy management for Asian countries, in the Philippines, the Government of the Philippines, with UNIDO support, is providing training facilities (including instructors, instructional materials and equipment) for an inter-regional programme for the least developed countries. The programme includes energy planning and development, demand-supply projection techniques, process of energy analysis, energy audit, energy conservation, energy information and energy management methods.

D. Finance for Industrialization

72. A number of regional integration and co-operation schemes have set up their own developmental finance institutions, such as the Central American Development Bank, the Caribbean Development Bank, the Andean Financial Corporation, the West African Development Bank, the African Industrial Development Fund, and the ASEAN Finance Corporation. These organizations serve to attract and mobilize funds from the international finance markets and the aid programmes of developed countries, and channel them into the regional priorities of their respective programmes. It is felt that there are good potentials for establishing linkages and network programmes of co-operation between such organizations including other regional and national development banks in the developing countries to increase the South-South flow of finance for industrial development. The critical need for a South-South Bank has already been underlined in Chapter III of this paper. The linking and interacting of such a Bank with networks of regional and national development banks should enhance ICDC activities.

E. Marketing

73. Important factors tending to inhibit an increase in trade in manufactures between developing countries is uneven and biased information, inadequate communication and lack of marketing networks available to the industrial enterprise in developing countries. General trading organizations for developing countries, which have succeeded in linking domestic industrial firms to overseas buyers and sellers, would go a long way to overcoming such inhibiting factors. This would require a system involving the establishment of general trading organizations (private or state-owned) in each developing country and a regional and inter-regional network with a collective system of information gathering.

F. Industrial Consultancy

74. To transform technology into "technology in use" in an industrial enterprise, consulting and design engineering services play a crucial role in developing countries. With the need to accelerate the development of national consulting capabilities for industrialization at minimum cost

and time, side by side with availability of a diverse pattern of already established consultancy firms in developing countries, the situation is ideal for co-operation. Such co-operation would involve sharing of experiences, exchange of personnel, joint working on projects, joint ventures between consultancy firms, and exchange of information of relevance to the consultancy profession on a regular basis. Such a scheme of co-operation would help the consulting firms by accelerating the development of their own capabilities and thus increasing the acceptability of their expertise in the developing countries.

1. Asian Regional Network

75. Following two expert group meetings held in the ESCAP region by UNIDO, an Asian Regional Network for Industrial Consultancy is in the process of being formed. This network will provide for regional co-operation through national focal points by pooling resources and consultancy capabilities, to enable larger and more complex industrial projects to be designed and implemented in the developing countries of the region. The work of the network will be centered on:

- (a) training of consultants;
- (b) development of consultancy methodology;
- (c) organization of consultancy;
- (d) research on specific topics, and
- (e) promotion and mobilization of co-operation in the field of consultancy among countries, institutions and organizations.

2. Caribbean Technological Consultancy Service (CTCS)

76. A Caribbean Technological Consultancy Service (CTCS) has been developed as a co-operative endeavour among the countries of the area, with the support of the Caribbean Development Bank. It is conceived as a network mechanism through which the knowledge, experience and skills already accumulated in different institutions at the national level are mobilized for the needs of Caribbean industry and, where appropriate, adapted and transferred to industrial enterprises.

G. The Main Issues

77. The main issues that arise out of the present chapter and require consideration are:

1. Accepting the need for trained manpower for operating industrial enterprises how effectively can the existing facilities in developing countries for training and human resource development be used and upgraded through pooling of resources and inter-linkages? What are the different methods through which such co-operation can be brought about?
2. Given the diversity and the magnitude of the need for training, would it be preferable to have specialized training institutions in various developing countries that would co-operate through networking, thereby saving costs and increasing the scope and level of training activities?
3. With the considerable market for industrial training programmes available in the developed countries, is it feasible for developing countries to co-ordinate and aggregate their needs and negotiate for better terms of training, and in what manner can this be organized?
4. With the experience which developing countries have acquired in the processes of industrialization, is it worthwhile to co-operate in developing case studies for management and entrepreneurial development, which are appropriate to their situation and exchange such information to evolve "Appropriate Training Material" and "Training Systems"?
5. Does the emergence of new technological advances such as genetic engineering and bio-technology and micro-electronics point to a new set of problems and challenges for the developing countries? If so, what type of ICDC mechanisms and programmes should be conceived for this purpose?

6. Should the scope of services offered by the Technological Information Exchange System (TIES) be enlarged? If so, what elements of information should be included which would be helpful in dealing with problems of acquisition and adaptation of technologies?
7. With the increasingly important role which energy is playing in industrial and technological choices, what type(s) of industry-related energy co-operative programmes could be useful, particularly where new and renewable sources of energy are concerned?
8. What innovative forms of organization could be designed and put into practice through ICDC to tackle the problems of inadequate information and communication and lack of marketing networks of industrial enterprises in the developing countries, particularly those engaged in foreign trade in manufactures?
9. Do regional networks of consultancy in developing countries have a role to play not only in co-operation among consultancy organizations, but in the wider context, in industrial enterprise level co-operation and an increase in industrial production in these countries?

A N N E X

Provisional Agenda for the
Fourth General Conference of UNIDO

1. Opening of the Conference.
2. Organization of the Conference:
 - (a) Election of the President;
 - (b) Adoption of the agenda;
 - (c) Adoption of the rules of procedure;
 - (d) Election of officers other than the President;
 - (e) Organization of committees;
 - (f) Credentials of representatives to the Conference.
3. General debate.
4. Lima and New Delhi Declarations and Plans of Action: retrospective and perspective:
 - (a) Review of progress and constraints;
 - (b) Perspectives for the achievement of the Lima target.
5. International co-operation, relevant national actions including industrial policies, and UNIDO's contribution in critical areas of industrial development 1985-2000:
 - (a) Accelerated development of human resources for industrial development;
 - (b) Strengthening of scientific and technological capacities for industrial development in developing countries;
 - (c) Mobilizing of financial resources for industrial development;
 - (d) Energy and industrialization, with special emphasis on development and application of energy resources and manufacture of equipment;
 - (e) World industrial restructuring and redeployment;
 - (f) Policies and measures for domestic industrial processing of raw materials in developing countries;
 - (g) Industrial policies and measures to achieve rural development and self-sufficiency in food supplies in developing countries;
 - (h) The least developed countries: implementation of the Substantial New Programme of Action;
 - (i) Strengthening economic co-operation among developing countries.
6. The Industrial Development Decade for Africa: review of progress, and proposals on ways and means to attain its objectives.
7. UNIDO's co-ordinating role in the United Nations system on industrial development.
8. Conclusions and recommendations.
9. Adoption of the report of the Conference.
10. Closure of the Conference.

