

INDUSTRIAL
COOPERATION
AMONG
DEVELOPING
COUNTRIES
AND THE
ROLE OF UNIDO

Present and Future Perspectives

S NANJUNDAN

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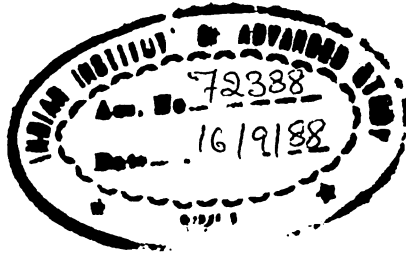
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About the Author

S. Nanjundan is formerly Deputy Director, Division of Industrial Operations, UNIDO, Vienna, Austria.

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Preface

The Research and Information System (RIS) for the Non-aligned and Other Developing Countries is an autonomous body set up in New Delhi (India), with the financial support of the Government of India.

RIS is a forum for providing analytical support to the developing countries on the various international economic issues of concern to the process of their development.

Its aims and objectives, include among others, promotion of the concept of self-reliance among the non-aligned and other developing countries and forging and maintaining a system of effective links amongst the various research institutions of these countries with a view to utilise their research capabilities for the maximum common benefits. It also seeks to serve and effectively function on a continuous basis as a data bank/information storage, retrieval centre on global and regional problems bearing on the interests of non-aligned and other developing countries. The RIS has initiated different types of publication series—Occasional Papers, Discussion Papers, Reprints, *Digest* on Current Issues and Events, etc.—with a view to generating debate on and awareness of current international economic issues among different sections of the Third World community.

The United Nations Industrial Development Organisation (UNIDO) has been active in promoting economic and technical cooperation among developing countries (ETDC/TCDC) particularly in the industrial sector. This Occasional Paper by S. Nanjundan reviews the activities and programmes of UNIDO in promoting ECDC/TCDC as well as the future perspectives. This is being released by RIS as a part of its commitment towards promotion of ECDC.

The purpose of the Occasional Paper series of the RIS is to generate wider debate on various issues of development and international economic relations. We do hope that this paper by Dr Nanjundan would be found interesting and useful by researchers and policy makers.

The views expressed in this Occasional Paper are those of the author and not necessarily of the RIS.

V R PANCHAMUKHI
Director

Industrial Cooperation among Developing Countries and the Role of UNIDO

Present and Future Perspectives*

S. NANJUNDAN

I. INTRODUCTION

There is no doubt, that industrialization and development, during the sixties and the seventies in the developing countries as a whole has enabled many of them to withstand the world economic crisis of the first half of this decade far better than one would have expected on the basis of a theory of mutual interdependence of developed and developing countries. Indeed, contrary to the popular myth, economic development during the last 25 years has, on the one hand, not unduly reinforced developing countries' dependence on developed countries for trade, markets and investment, and, on the other hand, has revealed potential for alternative development based on ECDC and TCDC.

The next section of this paper will therefore analyse recent development experience to indicate that:

- a) industrialization has been not only the engine of growth but promoted trade in manufactures among the developing countries;

*This paper was presented at the Second Conference of Research and Information System for Non-aligned Other Developing Countries, New Delhi, 20-22 November 1985. The views and comments are those of the author and not of UNIDO from which he retired in August 1985.

- b) disparate growth has increased hierarchism and differentiation amongst developing countries. thus increasing complementarities and the potential for further growth based on increased ECDC/TCDC.
- c) technology, markets and patterns of growth offer greater opportunities for ECDC/TCDC in the capital goods and metal-mechanics sub-sectors of industry; and
- d) regional and sub-regional institutional arrangements have been developed but hardly exploited.

The third section of the paper will briefly review UNIDO activities and programmes—past and current. The fourth and final section will dwell on the future perspective, in the light mainly of UNIDO research and programme activities.

Since the focus of this paper is on the role of UNIDO, primary actions by developing countries themselves—bilaterally, sub-regionally, regionally, through the Group of 77 and the non-aligned movement, as well as complementary actions in other economic sectors related to industry, e.g. trade, finance, services, technology, etc have not been covered in this paper.

II. SOME CHARACTERISTICS OF SOUTHERN INDUSTRIALIZATION (1960-1980) AND THEIR IMPLICATIONS FOR SOUTH-SOUTH COOPERATION

Disparate and differential growth

As the following table shows, manufacturing value-added (MVA) has grown more rapidly in the South than in the North. Moreover, certain countries and sub-regions of the South have grown more rapidly than others.

In the 20 years up to 1980, the industrial output of the South increased four times and the range of industrial goods produced broadened tremendously.

Not only has industrial capacity within the South as a whole thus expanded significantly, differential growth has also created or enlarged complementarities within the South.

Average annual growth rate of MVA (percentage)

	1963-1973	1973-1984
All developing countries	5.1	2.9
Least developed countries	3.3	-0.8
Centrally planned economies	8.6	4.2
Developed market economies	4.6	0.9
<i>Developing regions</i>		
Africa	4.5	2.1
West Asia	6.2	
South and East Asia	4.6	4.9
Latin America	5.1	1.3

Source: (UNIDO): A Statistical Review of the World Industrial Situation, 1984.

Sectoral and regional distribution of Southern manufacturing³

As the following table shows, the share of the South in World MVA varies from sector to sector: coal and petroleum products are the most important accounting for over 32 per cent of world MVA. Food processing accounts for over 16 per cent, light industry and basic products for 10 per cent each. However, the South lags behind the North farthest in the capital goods sector.

South's share in World MVA (percentage)

<i>Sector</i>	1963	1979
Food processings	14.65	16.21
Light Industries	8.81	9.89
Basic Products	6.88	9.95
Coal and Petroleum Products	34.52	32.59
Capital Goods	3.58	5.41

Source: UNIDO/IS. 453

It should be noted, however, that the distribution of the South's MVA and sectoral value added is very unequal among the developing regions. Latin America accounts for 60 per cent of the South's MVA and tropical Africa for less than 5 per cent.

East Asia's share has been increasing while that of South Asia has been declining (see table below).

Regional distribution: share of each region in manufacturing value added of the south by sector and year. (in per cent)

	<i>Food Processing</i>	<i>Light Industry</i>	<i>Basic Products</i>	<i>Coal and Petroleum Products</i>	<i>Capital Goods</i>	<i>Manufacturing Total</i>
in America						
1963	60.1	56.0	64.2	44.1	61.4	57.8
1970	58.4	55.6	66.6	43.4	68.7	59.1
1979	54.6	52.6	62.8	42.1	66.5	57.3
Tropical Africa						
1963	8.3	5.1	4.2	0.4	2.9	4.9
1970	8.8	6.5	4.0	1.8	2.7	5.4
1979	7.9	6.0	3.2	1.9	1.4	4.5
North Africa-Middle East						
1963	9.5	9.1	7.7	43.4	2.8	12.3
1970	9.1	9.5	8.3	41.5	3.6	11.9
1979	9.8	9.5	10.0	38.8	5.2	11.4
South Asia						
1963	9.4	20.1	16.7	1.6	23.2	14.8
1970	10.2	16.5	13.2	2.3	16.0	12.6
1979	8.6	10.8	10.6	2.3	8.6	9.1
East Asia						
1963	12.6	9.6	7.2	10.5	9.7	10.1
1970	13.4	11.9	7.9	11.0	9.0	10.9
1979	19.1	21.2	13.5	14.9	18.2	17.7
South	100.0	100.0	100.0	100.0	100.0	100.0

Source: UNIDO data base: information supplied by the Statistical Office of the United Nations with estimates by the UNIDO Secretariat.

MVA growth rates in developing countries have been highest for the capital goods sector followed by basic products, light industry, food processing and coal and petroleum products (see table on next page).

Growth rates of value added by manufacturing: sector and by region, 1970-77

<i>UNITAD</i>	<i>Sector</i>	<i>L.A.</i>	<i>T.A.</i>	<i>N.E.</i>	<i>S.A.</i>	<i>E.A.</i>	<i>World</i>
2	Food Processing	4.23	3.70	6.79	1.58	9.29	4.28
5	Light Industry	4.95	5.88	9.28	-0.34	15.15	4.33
4	Basic Products	8.50	7.70	12.49	6.94	15.94	5.01
3	Coal and Petroleum Products	3.95	4.84	5.22	2.76	8.56	4.79
6	Capital Goods	10.70	11.26	21.01	5.88	21.57	6.60
	Average	6.66	5.76	8.57	3.08	13.96	5.23

Notes: L.A. represents Latin America
T.A. represents Tropical Africa
N.E. represents North-Africa-Middle-East
S.A. represents South Asia
E.A. represents East Asia

Source: UNIDO data base: information supplied by the Statistical Office of the United Nations with estimates by the UNIDO Secretariat.

Effects on trade

Growth and diversification of Southern MVA has resulted in the creation of production and trade complementarities and the expansion of South-South trade. The value of South-South trade in manufactured goods (at current prices) increased from US \$6 billion in 1970 to US \$25 billion in 1975 and US \$51 billion in 1979; as a result the share of the South's total imports supplied from within the South rose from 14 per cent in 1970 to 18 per cent in 1979.

About half of South-South trade in manufactured goods in 1979 was within regions; trade within the industrially most-advanced regions—Latin America and East Asia—accounted for more than 80 per cent of such intra-regional trade. The value of imports of the Near East region increased 12 times between 1970 and 1979 and the Near East's imports from other regions in 1979 were twice as large as trade within the region. The regions of tropical Africa and the Indian subcontinent relied even more heavily on imports from other regions.

Most of the growth in South-South trade in 1970s was

concentrated in industries producing consumer goods and intermediate products. The proportion of the South's total imports originating in the South in 1979 was over 60 per cent for refined petroleum and over 40 per cent for textiles, clothing, footwear, rubber products and wood products. But in 1979 the South supplied less than 15 per cent of its import requirements of chemicals and iron and steel and less than 10 per cent of its imports requirements of capital goods. There has been a sharp increase in South-South trade in capital goods from US \$1 billion in 1970 to US \$12 billion in 1979.

Share of economic groupings in world manufacturing exports

	<i>South</i>	<i>Current prices percentage</i>	
		<i>North</i>	
		<i>Centrally planned economies</i>	<i>Market economies</i>
1963	4.2	13.3	82.5
1970	5.0	10.0	85.0
1977	7.8	8.9	83.3
1979	8.7	8.4	82.9
1983	10.9	8.8	80.3

Source: UNIDO, A Statistical Review of the World Industrial Situation, 1984.

World trade in manufactures," by origin, destination and economic grouping, at current prices, selected years

<i>Origin of Exports</i>	<i>Year</i>	<i>Exports to developing countries</i>		<i>Exports to centrally planned economies¹</i>		<i>Exports to developed market economies</i>	
		<i>Value (millions of dollars)</i>	<i>Share (percentage)</i>	<i>Value (millions of dollars)</i>	<i>Share (percentage)</i>	<i>Value (millions of dollars)</i>	<i>Share (percentage)</i>
Developing countries	1963	1.404	41.2	.102	3.0	1.902	55.8
	1970	3.231	33.7	.559	5.8	5.808	60.5
	1975	11.935	37.9	1.172	3.7	18.352	58.3
	1980	37.560	38.1	3.222	3.3	57.764	58.6
	1982	41.520	37.6	3.760	3.4	65.046	59.0
Centrally planned economies ¹	1963	1.635	15.1	8.043	74.3	1.147	10.6
	1970	2.899	15.2	13.381	70.2	2.804	14.7
	1975	6.790	14.6	31.835	68.6	7.756	16.7
	1980	15.784	18.0	54.692	62.3	17.268	19.7
	1982	19.807	21.9	58.651	59.3	17.062	18.8
Developed market economies	1963	16.950	25.7	2.168	3.3	46.470	71.0
	1970	32.462	20.2	6.634	4.1	121.256	75.6
	1975	111.298	26.5	26.518	6.2	282.155	67.2
	1980	233.721	26.0	42.430	4.7	622.646	69.3
	1982	234.088	28.1	36.346	4.4	563.642	67.6

Source: UNIDO: Statistical Review of the World Industrial Situation, 1984.

Note. ¹Excluding trade among centrally planned economies of Asia.

Growth rates of trade flows (in real terms) of manufacturing sectors by north and south. (in per cent) 1970-1977.

	<i>North</i>	<i>South</i>	<i>World</i>
		Food Processing	
North	4.27	7.40	4.94
South	-1.81	6.92	.47
World	2.90	7.27	3.90
		Basic Products	
North	3.37	6.69	4.09
South	-.74	7.07	1.50
World	2.98	6.74	3.82
		Light Industry	
North	3.03	6.08	3.61
South	5.47	6.14	5.67
World	3.48	6.10	4.03
		Capital Goods	
North	8.21	12.16	9.24
South	13.91	21.97	15.82
World	8.45	12.84	9.59

Source: UNIDO/15-453.

One more point needs to be made regarding the trade of the South. Contrary to popular myth the South is not an exporter merely or preponderantly of primary products. As can be seen from the following table, the South's exports of manufactures (share in total non-fuel exports) increased from 10.4 per cent in 1955 to 44.4 per cent in 1978.

The structure of LDC exports: Selected years 1955-78 (percentage)

	1955	1960	1970	1978
Total exports	100	100	100	100
Food	36.5	33.6	26.5	16.4
Agricultural raw materials	20.5	18.3	10.0	4.8
Minerals, ores	9.9	10.6	12.3	4.6
Fuels	25.2	27.9	32.9	52.8
Manufactures*	7.7	9.2	17.7	20.9
Total non-fuel exports	100	100	100	100
Food	48.9	46.7	39.5	34.8
Agricultural raw materials	27.4	25.3	14.9	10.1
Minerals, ores	13.3	14.6	18.3	9.7
Manufactures*	10.4	12.8	26.4	44.4
Share of MDCs in Exports of LDCs				
Total non-fuel exports	76.3	74.3	71.9	65.4
Food	79.0	77.7	74.0	65.6
Agricultural raw materials	74.3	67.8	64.4	61.8
Minerals, ores	94.5	92.0	89.2	78.0
Manufactures*	45.9	54.0	61.2	63.3

Manufactures=SITC

5 to 8 less 68.

Source: UNCTAD, *Handbook of Trade and Development Statistics*, 1972, 1979, 1980; *Economic Journal*, No. 94, March 1984.

Furthermore, the South plays a minor role in the markets of developed countries for manufactured goods despite growth in the volume of Southern manufactured exports of about 12 per cent per annum over the last 2 decades. The average share of Southern exports in apparent consumption of the North of manufactured goods increased from 1.7 per cent in 1970 to 3.4 per cent in 1979.

LDC Shares in apparent consumption of manufactured goods in industrialised countries by major product groups, 1970, 1975, 1979

<i>Group (ISIC code)</i>	<i>1970</i>	<i>1975</i>	<i>1979</i>
Food, beverages and tobacco (31)	3.4	3.5	3.9
Clothing, textiles and leather (32)	2.7	6.0	9.6
Wood Products (33)	1.8	2.1	3.8
Paper and Printing (34)	0.1	0.2	0.4
Chemicals (35)	2.0	3.0	3.4
Non-metallic minerals (36)	0.3	0.6	1.0
Basic metal (37)	3.2	0.9	2.0
Machinery (38)	0.3	0.9	2.0
Miscellaneous (39)	3.0	10.3	18.2
Total manufacturing (3)	1.7	2.4	3.4

Source: H. Hughes and J. Welbroeck. "Can the growth of developing countries exports keep growing in the 1980's?" *The World Economy*, vol. 4, no. 2, June 1981, pp 127-47; *Economic Journal*, No. 94, March 1984.

It is the conclusion of one analysis that "supply rather than demand factors have principally determined LDC (South) export performance in manufacturing" and that "the link between the level of economic activity in developed countries and export performance of LDCs" is weak.

III. UNIDO ACTIVITIES AND PROGRAMMES IN ECDC TCDC—PAST AND CURRENT^{3*}

UNIDO has been one of the pioneer agencies in promoting and implementing ECDC/TCDC. Even long before the UN Buenos Aires Conference on TCDC, UNIDO had initiated activities to

*This part is based entirely on UNIDO documentation on this subject.

encourage economic and technical cooperation among developing countries in the industrial sector working in close co-ordination with the UNDP, UNCTAD, the United Nations Regional Commissions and other international organizations.

Its special interest in the field began with a proposal submitted by the Government of Senegal to the Permanent Committee of the Industrial Development Board in December 1972, calling for an exchange of experience between developing countries in the creation or development of small and medium-scale industries. In May 1973, the IDB invited UNIDO "to establish a programme of operational activities for promoting technical cooperation among developing countries, by the exchange of duly adapted technology information and development assistance formulas in the field of industry, including small and medium-scale industries, industrial programming, industrial financing etc."

Special allocations for technical co-operation among developing countries have been included in the UNIDO Regular Programme of Technical Co-operation beginning with the biennium 1976/1977 (US \$84,000). This biannual allocation has continuously been increased, reaching the level of US \$550,000 for the biennium 1984/1985 (8 per cent of the Regular Programme allocation for this biennium).

In summary, ECDC/TCDC projects at a total value of US \$2.2 million have been financed from Regular Programme since 1976. In addition, allocations for activities in this field have been made from voluntary contributions to UNIDO and from the United Nations Industrial Development Fund. Since its inception in 1978 up to 31 December 1984, the UNIDF has financed 66 ECDC/TCDC classified projects totalling US \$5.1 million. In 1985, the Government of the People's Republic of China made a special purpose contribution to the UNIDF for South-South co-operation activities, amounting to the equivalent of US \$366,700. In addition to these resources, the UNDP Governing Council authorised in 1981 the allocation by countries of up to 10 per cent of their IPF's or US \$7.5 million, whichever is smaller, for inter-country TCDC purposes. By end 1984, only 15 countries had taken advantage of this decision.

A special agreement was concluded in 1984 between the Government of Egypt and UNIDO, whereby the Egyptian Fund for Technical Co-operation for Africa (equivalent of US \$1 million) was established for the purpose of contributing to UNIDO's activities within the framework of the Industrial Development Decade for Africa and in implementation of the Lagos Declaration and Plan of Action. Resources available, however, are not sufficient to meet the growing demand for such activities.

In view of the growing importance of TCDC activities after UNIDO II, in June 1977, a separate section was established in the UNIDO secretariat, within the Division of Policy Co-ordination, to coordinate specific UNIDO activities and shape them into a coherent programme aimed at promoting economic and technical co-operation among developing countries in respect of industrialisation.

The UNIDO programme of ECDC/TCDC is primarily intended, at the request of the developing countries:

- a) to promote, at sub-regional, regional and international level, the spirit of solidarity, equality and mutual benefit, through economic and technical co-operation among developing countries;
- b) to assist the developing countries to formulate and implement policies and frameworks of co-operation with a view to increased development and utilisation of their human, scientific, technological, energy and financial resources;
- c) to provide an active support for the implementation of industrial co-operation programmes and projects as well as to assist the subregional, regional and interregional co-operation efforts being undertaken by the developing countries in specific industrial sectors.

The programme of UNIDO for promoting economic and technical co-operation among developing countries focuses on the following mutually supporting components:

- a) organization of Round-Table Ministerial Meetings in

- order to bring together developing countries for promotion of industrial development;
- b) organization of Solidarity Ministerial Meetings for co-operation in the industrial development of least developed countries;
 - c) development of joint programmes for specific industrial subsectors;
 - d) implementation of the recommendations relating to ECDC/TCDC reached at Consultation Meetings organized under the UNIDO System of Consultations;
 - e) support measures pursuant to the recommendations of the Caracas Programme of Action adopted by the High-level Conference on Economic Co-operation among Developing Countries (May 1981);
 - f) support of the Industrial Development Decade for Africa, through particular emphasis on ECDC/TCDC activities in this region;
 - g) increasing use of developing countries' capacities in the implementation of technical assistance projects.

A. Round-table ministerial meetings on co-operation among developing countries for the promotion of industrial development

Following the adoption of the Lima Declaration and Plan of Action on Industrial Development and Co-operation, adopted in 1975, which stressed the importance of economic and technical co-operation among developing countries and the need to develop agro-based industries and to foster integration between agriculture and industry in developing countries, this programme was initiated in 1976. The objective is to attain an exchange of experience between the host country and the participating countries themselves, on the strategies, policies, programmes and institutional aspects of a selected sector. Agro-related industries have particularly benefitted from this activity, since 3 out of 5 Round-Table Ministerial Meetings were devoted to the subject of food-processing and related industries, while two concerned the promotion of industrial and technological cooperation among developing countries. In the field of

agro-industries, meetings were organized in Bulgaria in 1976, in Iraq in 1982 and in Yugoslavia in 1985. A fourth meeting in the field of agricultural machinery is scheduled to take place in China in late 1986.

The main objectives of the meeting held in Yugoslavia were the discussion of specific proposals between the participating developing countries and the host country, as well as among the invited countries themselves, and the promotion of further co-operation in order to increase the production capacities of food-processing industries in developing countries. At this meeting, it was *inter alia* concluded and recommended that:

- a) UNIDO should continue to organize this type of meeting to promote co-operation in specific industrial sectors on the basis of mutual benefit, which constitute an innovative and practical approach to south-south co-operation and prove that the principle of mutual benefit fosters such co-operation;
- b) immediate and effective follow-up is required by the participating countries to implement the projects and agreements emanating from such meetings and to further develop co-operation areas. To this end, UNIDO and—where appropriate—other UN organizations should provide the necessary support and assistance;
- c) the exchange of information and experience among developing countries in the development of specific industries is of great importance. Specific institutional arrangements should be set up and UNIDO's assistance in the establishment of information networks was requested.

As regards the overall promotion of industrial and technological co-operation among developing countries, the first Round-Table Ministerial Meeting was held in 1977 under the joint auspices of UNIDO and the Government of India. The meeting recommended co-operation in the following areas: identification and use of industrial technologies available in the developing countries; establishment of a technology bank; improvement of skills through industrial training; establishment and strengthening

of the institutional framework to sustain industrial and technological development; programmes of co-operation on applied research and development activities in specific sectors; use of engineering and consultancy capabilities available within the developing countries and negotiating and bargaining for technology acquisition.

The Second Round-Table Ministerial Meeting on the Promotion of Industrial Co-operation among Developing Countries, organized by UNIDO in co-operation with the Government of Turkey (Istanbul, October 1979), reviewed the progress made in implementing the recommendations of the New Delhi Ministerial Meeting and made further recommendations for its implementation. The recommendations of both meetings have been incorporated in UNIDO's activities for the promotion of industrial and technological co-operation among developing countries.

B. Solidarity ministerial meetings for co-operation in the industrial development of least developed countries

This kind of activity was initiated in 1979. Since then 11 Solidarity Meetings, which provide a new venue for assisting the least developed countries in their economic and industrial development, have been organized in the following countries: Afghanistan (May 1979), Tanzania (July 1979), Haiti (November 1979), Bangladesh (December 1980), Sudan (March 1981), Burkina-Faso (December 1981), Lesotho (June 1982), Nepal (November 1982), Yemen Arab Republic (March 1984), Rwanda (June 1984) and Burundi (March 1985). For December 1985, one other Meeting is scheduled for the People's Democratic Republic of Yemen. A meeting with similar objectives was also organized in the Islamic Republic of Mauritania (January 1982). However, since Mauritania is not classified as a least developed country, the participation was confined to countries and organizations of the Arab Region. It is intended to continue these meetings at a rate of two per year.

The main objective of the Solidarity Meetings is to identify means of co-operation whereby the participating developing countries can help in implementing specific industrial projects in

the respective host least developed countries. In addition to enhance the spirit of collective self-reliance, these Meetings serve to develop practical mechanism to facilitate the progress of technical and industrial development of the host country. The mechanism of co-operation can take various forms, such as loans or grants for purchase of machinery and equipment, joint ventures, exchange of technology and know-how, training, industrial research and experts' services.

In order to facilitate the identification of concrete co-operation possibilities, before each Meeting is held, the host country, with the assistance of UNIDO, prepares a portfolio of project proposals, indicating crucial areas and the type and volume of assistance required for accelerating its industrialization. The project portfolio is then submitted to a number of countries which are invited to the Meeting. Invited countries are given ample time to review projects and to determine the type and extent of assistance they can provide for implementing designated projects. During the Meetings bilateral and group discussions are organized where the host and the co-operating countries engage in negotiating and eventually reaching concrete agreements. International development financing institutions also participate in these meetings as observers.

UNIDO's experience in the organization of Solidarity Ministerial Meetings and in the implementation of agreements reached during these Meetings has shown that the major prerequisites for successful implementation are immediate and effective follow-up at Government levels as well as assistance through the organizations of the UN system and through development financing institutions for the financing of certain elements of the joint projects. A systematic in-depth review of the programme was launched in 1984, to further improve its effectiveness. The experience gained so far has indicated that this kind of undertaking has two advantages: *a*) the meetings are usually attended by decision-makers and experts with the authorization from their respective governments to take decisions during the course of the meeting, *b*) concrete project proposals are under consideration which have been submitted to the participating countries already before the meeting to facilitate concrete

agreements during the meeting.

Consequent to such Solidarity Meetings, considerable progress has been achieved. Detailed information on the results of these Meetings is provided in document UNIDO/PC. 102 "Progress after Solidarity Ministerial Meetings," which is periodically updated.

The number and value of projects being promoted in each country is given below:

	<i>Number</i>	<i>Value/US \$ million</i>
Rwanda 1984	22	194
Yemen Arab Republic 1984	34	11
Nepal 1982	63	411.69
Lesotho 1982	28	4
Mauritania 1982	16	65
Burkina Faso 1981	40	165
Sudan 1981	54	102
Bangladesh 1980	77	88
Haiti 1979	33	33
Afghanistan 1979	34	43
Tanzania 1979	21	11.4

C. Development of joint programmes for specific industrial subsectors

This activity is carried out by UNIDO together with some of the more industrialised developing countries and has proved to be an effective way of assisting the industrialisation efforts of the developing countries. Priority is presently accorded to food processing, agricultural machinery, pharmaceutical and building materials industries. Some of the recent activities in this area are summarized below:

In co-operation with the Economic and Social Commission for Asia and the Pacific (ESCAP) a Seminar for Promoting Economic and Technical Co-operation among Developing Countries in Asia and Pacific Region in the field of Manufacturing and Popularization of Agricultural Machinery, Tools and Equipment was held in China from 8 to 25 May 1984. Field visits to factories, research institutes and technical colleges, as

well as demonstrations of agricultural machinery, provided participants with an opportunity to exchange experience and information with the host country and among themselves. Twenty-eight concrete project concepts for co-operation were identified which matched ECDC/TCDC needs and capabilities.

During the fifty-first International Agricultural Fair in Novi Sad (Yugoslavia) in May 1984, a joint UNIDO/Yugoslavia programme was elaborated to promote co-operation in the development of agro-industries with special emphasis on food processing industries and a number of projects were selected for bilateral and multilateral follow-up action. A High-level Intergovernmental Meeting on Agro-industrial Development will be held in the fourth quarter of 1985 in Brazil, to promote and strengthen co-operation in this area, exchange views and experience and consider co-operation programmes and projects.

Orientation visits and exchange of experience continue to form part of UNIDO's ECDC/TCDC programme. Two Ethiopian experts on non-metallic ores and building materials visited Yugoslavia to become acquainted with Yugoslav experience in marble processing industries. The Secretary General of the Senegalese Industrial Free Zone visited the Industrial Free Zones in Mauritius, Egypt and Sri Lanka to study the latter's experience in the promotion of foreign investments and export-oriented industries. A three-month training in standardization was organized in Brazil for the Director of the Zambian Institute of Standardization.

Brazil provided expert assistance in the setting-up of integrated agro-industrial complexes for the production of a variety of food items in Angola, El Salvador, Guinea, Mozambique, Paraguay, Senegal and Sierra Leone. Projects were also implemented in co-operation with regional and sub-regional organizations such as the West African Economic Community (CEAO), which has created a special branch in its secretariat to deal with agro-industries.

A technical co-operation and training programme was carried out between China and Pakistan (silverware manufacturing), Sri Lanka (black tea processing), Thailand (bamboo rattan weaving) and Maldives (embroidery technology). A joint UNIDO/ECA

programme for co-operation among some English-speaking African countries in industrial manpower development and training is under preparation.

A survey is being carried out on industrial policies and trends in the Asia-Pacific region to identify issues, opportunities and options for selected developing countries and examine the scope for their industrial co-operation and mutual interdependence.

A Regional Workshop on the Integration of Women in the Industrial Planning and Development Process was organized in Zimbabwe in April 1984. Eight member states of the South African Development Co-ordination Conference discussed co-operation possibilities including plans of action for joint activities, an improved flow of information and possible joint information network. Similar workshops were organized for the Asian countries and for the Latin American countries.

As a new financing approach, co-operation in programme and projects between two or more countries under Trust Fund arrangement is being explored. As first such a programme, an agreement was concluded between China and Libya in December 1984, whereby it was agreed that Chinese manufacturing enterprises would provide directly or through UNIDO plant operational personnel, particularly in the field of iron and steel and petrochemical industries. Exchange of experts and trainees as well as joint venture projects are equally envisaged.

In 1984, co-operation was promoted between Kenya and Brazil in the development and transfer of technology for small scale power alcohol distilleries. The project is now in the second phase which involves the design, local manufacture and test operation of two power alcohol microdistilleries in Kenya with the technical support of Brazilian experts.

A programme to transfer Chinese biogas technology to other developing countries in the Asia and Pacific region has started in 1985. It aims at the transfer of experience and expertise, both at the small-scale individual household/farm level and at the large-scale community/industrial plan level.

An inventory of the capabilities existing in the more industrialized developing countries and the needs and requirements of countries of a lower level of industrial development is under

preparation to achieve a more systematic co-operation at the enterprise level.

D. Implementation of recommendations relating to ECDC/TCDC reached at consultation meetings

The Second General Conference of UNIDO recommended that UNIDO should include among its activities a system of continuing consultations between developed and developing countries and among developing countries themselves. These consultations would offer excellent opportunities which could lead to the establishment and strengthening of sectoral co-operation among developing countries. Consultation Meetings in sixteen sectors including fertilizers, agricultural machinery, food processing, pharmaceuticals, capital goods, etc, have so far taken place.

During the Consultation Meetings recommendations have been made to strengthen economic and technical cooperation among developing countries. For example, during the Third Consultation on the fertilizer industry a programme was suggested for strengthening ECDC/TCDC at regional and inter-regional levels. Emphasis was on exchange and transfer of experience co-operation in the design and manufacture of equipment, machinery and spares parts, as well as construction of fertilizer plants and joint ventures for exploitation of reserves of fertilizer raw materials and for the establishment of fertilizer manufacturing facilities. As a first step, an inventory was drawn up on specific areas of training needs and capabilities in selected developing countries. Furthermore, regional meetings of plant managers were held in Latin America and in Asia to promote co-operation among developing countries in tackling the problems existing during construction and plant operation in this industry.

In line with the recommendations of the Second Consultation on Petrochemical Industries held in 1981, a meeting on co-operation among the developing countries of the Middle East and North Africa in the field of petrochemical industries was organized in October 1984 in co-operation with the Government of Turkey; a co-operation programme is planned as follow-up to

this meeting.

Following the Third Consultation of Iron and Steel Industry held in 1982, preparations are under way for an expert meeting to advise on the development of practical guidelines for the establishment and operation of mini iron and steel plants to be held in October 1985.

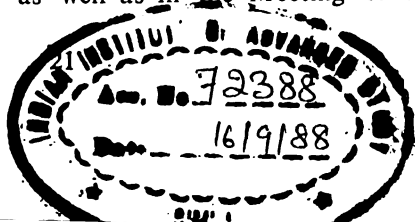
Following a recommendations of the Second Consultation on the Agricultural Machinery Industry, held in Vienna in 1983, an expert meeting was convened in November 1984 in China to promote the manufacture of agricultural machinery and rural and food-related equipment in developing countries through the development of multi-purpose plants. The programme of action agreed upon is being launched.

As a follow-up of the First Regional Consultation on Agricultural Machinery Industry, held in Ethiopia in 1982, UNIDO, in co-operation with the Industry Division of the Southern African Development Co-ordination Conference (SADCC) has assisted nine member countries in SADCC's regional programme to analyse the country level status and existing infrastructure in this sector, with the aim of identifying ways to develop a co-operative programme among themselves.

E. Support measures to the Caracas programme of action

The High-level Conference on Economic Co-operation among Developing Countries, which was held by the Group of 77 in Caracas, Venezuela, 13-19 May 1981, adopted the Caracas Programme of Action on Economic Co-operation among Developing Countries in various sectors including: trade, technology food and agriculture, energy, raw materials, finance and industrialization. The Caracas Programme of Action places emphasis on economic and technical cooperation for industrialization. It specifies, among other issues, concrete cooperation activities in the following areas: collecting and disseminating industrial information, enhancement of industrial capacities through joint efforts and development of human resources for industrialization.

UNIDO has also always actively participated in the various sectoral meetings as well as in the Meeting of the



Inter-governmental Follow-up and Co-ordination Committee on ECDC (IFCC). A comprehensive paper entitled "UNIDO's support measures to the Caracas Programme of Action" was submitted to the Third IFCC Meeting in Cartagena (Colombia) in September 1984. UNIDO also participated at the Fourth IFCC Meeting in Jakarta (Indonesia) in August 1985, and provided relevant documentation.

UNIDO's ECDC/TCDC activities are closely related to the recommendations and requirements of the CPA, such as solidarity ministerial meetings, follow-up to recommendations emanating from the System of Consultations, the various joint programmes for specific industrial sub-sectors, as explained before. In addition, the following activities are also related to the implementation of the CPA:

The collection and dissemination of information is provided through the UNIDO Newsletter, which regularly publishes industrial opportunities available in developing countries, as well as UNIDO's Development and Transfer of Technology series. However, an extended or new Newsletter to cover additional collection and dissemination of information would require additional funding, which is presently not available.

The Industrial and Technological Information Bank (INTIB) was set up in 1978, in order to provide the necessary information for the selection of technology on a goal-oriented basis. Some of the activities of INTIB are directly related to TCDC, i.e., the publication of the Directory of Information Systems and Services in Developing Countries, Directories of Industrial and Technological Institutes by sectors of industry etc.

The Technological Information Exchange System (TIES) was established by UNIDO to exchange information on terms and conditions of technology acquisition contracts, to enhance the negotiating power of developing countries vis-a-vis technology suppliers from developed countries. A programme of co-operation was developed with the Andean Technological Information System, paving the way for a regular exchange of information between the two systems.

An innovative activity, initiated in 1982, was the promotion of co-operation among industrial development financing institutions.

of developing countries in the field of technology selection, through a meeting of selected institutions and the initiation of a pilot scheme for a Technological Information Exchange Network. Other measures to promote co-operation in developing countries in industrial technology included studies on technology exports in selected developing countries and the preparation and dissemination of directories, *inter-alia*, of industrial and technological research institutes in Africa (UNIDO/IS. 299) and solar research institutes in developing countries (UNIDO/IS. 341). In co-operation with the African Regional Centre for Technology (ARCT) and the Organization of African Unity, an inventory of African experts in the areas of industry, science and technology is under preparation.

The regional network for the production, marketing and control of pesticides for Asia and the Pacific established with UNIDO assistance in the Philippines, also contributes to the concept of technical co-operation among developing countries (TCDC) and successfully organized two expert group meetings in 1984 on quality control of pesticides in Dhaka (Bangladesh) and trade and tariff considerations in Colombo (Sri Lanka). The network encouraged a fruitful exchange of expertise and arranged study tours.

As a follow-up of the Inter-governmental meeting on biotechnology, held in Argentina early in 1984, a Latin American biotechnology network was initiated through a joint effort made by UNIDO, UNDP and UNESCO. The purpose of the network is to make the fullest possible use of the scientific and industrial capabilities of Latin American countries in the area of biotechnology. A project for the establishment of a regional research and development centre for biotechnology and genetic engineering in Mexico was approved for financing from UNDP and a contribution of US \$2 million in kind by the Government of Mexico. Project implementation has already started.

At the Meeting of Heads of National Technical Co-operation Agencies held in October 1982 in Tunis, a concept of promoting enterprise-to-enterprise co-operation was recommended. The objective of this concept is to promote such co-operation and assist in establishing relevant mechanisms, methods and

guidelines.

With UNIDO assistance, a study on enterprise-to-enterprise co-operation was prepared, which will also serve as a background paper for an expert meeting on enterprise-to-enterprise Co-operation in the field of plastic industries among Latin American countries (planned in Argentina in November 1985). In order to utilize institutions that stimulate co-operation in the private sector, a project on strengthening the enterprise-to-enterprise co-operation and a joint venture programme of the Islamic Chamber of Commerce, Industry and Commodity Exchange in Pakistan, has been developed and implementation started in 1984.

In addition, an expert group meeting on the establishment of multinational production enterprises in developing countries is scheduled to take place in Vienna in November 1985.

F. Support of the Industrial Development Decade for Africa (IDDA)

In support of the IDDA, four sub-regional meetings on the promotion of intra-African industrial co-operation were held in 1983/84. From these meetings emanated integrated industrial promotion programmes, which are the first step in a continuous planning process to which both Governments and intergovernmental organizations in the various sub-regions will continue to submit proposals during the subsequent programming stages.

In 1984, a four-week Regional Training Seminar within the framework of the IDDA was carried out in Guinea-Bissau for participants from Cape Verde, Guinea-Bissau and Sao Tome and Principe. The Seminar was conducted in Portuguese and lecturer was provided by Brazil within the framework of the programme of economic co-operation among developing countries (ECDC). The participants, representing ministries, development banks and other governmental institutions, were trained in advanced methods and techniques of project identification, preparation, evaluation and financing. A case study, based on local conditions in Guinea-Bissau, was used to illustrate the complexity of the problem.

As requested by the Seventh Conference of African Ministers

of Industry in 1984, UNIDO initiated the organization of meetings between African countries and organizations and those from other developing regions and subregions, within the context of economic and technical co-operation among developing countries (ECDC/TCDC). The First International Latin American/African Symposium was held in Brazil, in August 1983. An Afro-Asian Industrial Co-operation Meeting is planned for early 1986.

Within the framework of the System of Consultations, activities were also undertaken to promote co-operation between African and other developing countries. As a result of the First Regional Consultation on the Agricultural Machinery Industry in Africa, held in Addis Ababa (Ethiopia) in 1982, a ten-year mechanization plan is currently being elaborated for Cameroon, as well as a framework of reference designed for the simultaneous development of multi-purpose facilities in the agricultural machinery and capital goods sectors in Algeria.

Many of the other ongoing ECDC/TCDC activities are closely related to the IDDA, s.a., the Solidarity Ministerial Meetings and their follow-up, and are partly financed from the funds specially earmarked for the Decade.

G. Utilization of developing countries' capacities

In the implementation of UNIDO's technical co-operation activities, the utilization of developing countries' capacities has become a permanent and important factor, the status of which is best demonstrated by a statistical overview of recent years implementation. (see Table on next page).

IV. FUTURE PERSPECTIVES

In discussing future perspectives relating to the role of UNIDO in ECDC/TCDC it should first of all be emphasized that the principal actors are the developing countries themselves—individually, bilaterally, multilaterally, and through their political (Group, 77/NAM) or regional groups. UNIDO—like other UN agencies—is a catalyst and technical adviser, providing specialist services and technical assistance at the request of

Governments. As noted earlier, UNIDO's own resources devoted to ECDC/TCDC are extremely limited.

	1984	1983	1982
<i>a) Expert services</i>			
Total no. of appointments	1132	1075	1005
Of which experts from developing countries	258	242	242
<i>b) Sub-contracts with consulting firms</i>			
Total no. and value of contracts awarded	128 contr. f. \$13.8 mill.	111 contr. f. \$7,8 mill.	112 contr. f. \$9,2 mill.
of which to developing countries' firms	47 contr. f. \$2.9 mill.	32 contr. f. \$2.6 mill.	21 contr. f. \$0.9 mill.
<i>c. Training activities</i>			
Total no. of placements of follows	2.166	1949	1.800
Of which placed in developing countries	448	424	349
Total no. of in-plant group training programmes	96	74	64
Of which in developing countries	41	32	30
<i>d) Equipment purchases</i>			
Total no. and value of purchase orders issued	1824 p.o.for \$19.9 mill.	1865 p.o.for \$14.7 mill.	1800 p.o.for \$24.4 mill
Of which to developing Countries firms	171 p.o.for \$1.4 mill.	144 p.o.for \$1.4 mill.	104 p.o.for \$1.3 mill

Developing countries as a group have made only limited progress to date and confined themselves to drawing up inventories, exchanging information, etc. However, considerable activities take place on a bilateral basis and through sub-regional groupings. UNIDO has sometimes been called upon to provide advice and technical assistance, e.g., to Islamic Economic Organization, ASEAN, ANDEAN, PTA, SADCC, ECOWAS, UDEAC, etc.

The future perspective on UNIDO's role could be reviewed

under three headings: 1) Economic Research Activities; 2) Programme Activities and 3) Informational Activities

1) Economic research activities

UNIDO has recently quantified the potential for South-South co-operation by constructing scenarios to demonstrate the broad economic impact of South-South co-operation through increased trade in 28 branches of industry by the year 1990. This has been done through the Industry and Development Global Report 1985. The share of the South's imports supplied by the South is projected to increase from 18 per cent in 1979 to 26 per cent in 1990. Potential trade partners for each level of industry have been identified.

Thus, the Global Report provides, for the first time, a detailed description of who will produce which commodity, how much, and for whom in South-South co-operation. It also provides a measure of the additional economic growth in the South which could be generated by such an increase in South-South co-operation. The use of global models allows a measurement of inter-regional feed-back effects on growth and structural change. The result of such exercise leads to the conclusion that South-South co-operation brings benefit of additional growth for the North, and therefore it pays for the North to help the South to help itself. Some highlights are given below.

The South's self-reliance is expected to show the fastest improvement between 1979 and 1990 in the equipment and consumer durables components of capital goods (See Table).

UNIDO estimates of the share of the South's total imports supplied by the South in 1990 (and 1979 actual)

	<i>1979</i> <i>per cent</i>	<i>1990</i> <i>per cent</i>
Agricultural Product	37.0	48.0
Raw Materials	33.6	54.3
Energy	33.0	45.6
Intermediate Products	19.4	30.5
Consumer Non-Durables	25.1	36.7
Equipment	7.0	13.7
Consumer Durables	15.4	31.2
Total Imports	25.0	34.3

The impact of intensified South-South trade between 1979 and 1990 is shown to vary from region to region due to their different levels of reliance on exports and different structures of production. UNIDO estimates that a doubling of South-South trade in manufactured goods would over 10 years provide a stimulus for an increase in industrial output of 33 per cent in Latin America, 36 per cent in Tropical Africa, 48 per cent in Indian Subcontinent, 20 per cent in the Near East, and 26 per cent in East Asia.

For the South as a whole, the estimated stimulus to be derived from intensified South-South co-operation would be a 31 per cent increase in industrial output. This would require a much higher level of imports from the North and this in turn would require an increase of almost six per cent in industrial output in the North.

A global perspective is thus reinforced. Given a reasonable chance that the North may launch a co-ordinated recovery with the improved access to their markets for the South, a better global division of labour will occur in the World Industrial Economy with the South a much stronger economic and trading partner. But even if such a recovery did not come about, increased South-South co-operation has an integral part in the South's industrial development strategy, as envisaged in the 1981 Caracas Plan of Action. Such a prospect, UNIDO argues, should be welcomed by the North which will reap some benefits from it. The more positive the North's response, the greater will the benefit be all around.

Another study of UNIDO brought out in 1984 (Industrial Development and South-South Cooperation) provides the following criteria, which led to identification of capital goods, basic products, rubber products and metal products as the most promising sub-sectors for intensified South-South co-operation:

- 1) Technology of production must be characterized as being intensive in the use of the factors which, although not available in sufficient quantities in any single industry of the South, are so available in the South as a whole;
- 2) The industry should not require a high rate of new

- product development;
- 3) The competitiveness of Southern production should be demonstrated on the basis of the above-average growth rates in both production and imports of such products by the South;
 - 4) The learning-by-doing benefits of actual production should be relatively great.

Furthermore, the same study indicates that the obstacles to intensified co-operation could be overcome through incentives for domestic producers, including changes in the structure of protection, financing and servicing mechanism through promotion of multilateral joint ventures, etc.

“Licensing agreements would be an alternative mechanism for allowing for technological flows between regions of the South. The lack of an effective patent system in the South, the lack of information on developing country producers and the greater importance of learning-by-doing embodied in management and skilled workers in capital goods industries, however, all act so as to limit the usefulness of licensing agreements transferring technology from one country to another, and serve to underscore the advantages of MUVs in this context. Arms-length contracts between producers in different countries and especially between different developing countries, in which economic and political conditions are much more volatile than in developed countries, are exceedingly difficult to create, monitor and enforce. By bringing the various producers and agents together within a single profit-seeking enterprise in which all agents share mutual benefits of the successful fulfilment of their individual responsibilities, transactions costs, information costs, and enforcement costs can be reduced to manageable proportions. Otherwise, it would be very difficult to see how Southern producers would be able to take advantage of this aforementioned sizeable benefits of specialization, small scale, full utilization of resources, and resource complementarity that seem essential to a viable capital goods industry. Moreover, only if the equity capital of such multinational companies of developing countries is widely subscribed to, and the activities

of such companies are widely dispersed among countries and regions of the South, will the existence of such companies be seen as equitable. Only if they are regarded as such will countries become and remain willing to treat them as domestic enterprises and hence to serve as an implicit customs union but without the difficulties of arranging and maintaining such a union.”

The conclusions of the study relating to ECDC in the capital goods sector are given below:

“(1) Static allocative efficiency criteria and especially factor proportions are of less relevance to the determination of efficient production and trade patterns of capital goods industries than they are to other industries.

(2) even so, the factor requirements of capital goods industries are not beyond the capabilities of developing countries as a whole. However, because several categories of capital goods have relatively high requirements of skills which are available and relatively cheap only in certain regions of the South and others have relatively high requirements of capital which is again available and cheap only in certain other regions of the South, substantially more capital goods production in the South would be feasible and economic under a feasible and effective programme of South-South co-operation than there would be otherwise.

(3) The importance of dynamic aspects of efficiency and in particular of learning-by-doing in capital goods industries justifies that high priority be given to capital goods production in the South.

(4) Another advantage of Southern capital goods production is the provision of technology that is more appropriate and efficient in both factor proportions and scale to the conditions prevailing in the various countries and regions of the South.

(5) There is quite considerable evidence that developing countries are able to efficiently produce capital goods with considerably greater labour-intensity and via smaller scale than they are generally assumed to be able to and than are Northern capital goods producers. Often this capability on the part of the South can be accomplished relatively quickly and inexpensively

by importing the machinery for producing, and then producing, older vintages of Northern capital goods.

(6) It should be possible to overcome most of the obstacles to Southern production of capital goods through South-South co-operation through judicious allocative decisions across regions and subsectors of capital goods, and in particular by relying on multinational companies (joint ventures) of developing countries as the institutional vehicle. The one obstacle that is likely to remain insurmountable for the foreseeable future is the requirement of rapidity of new product development which characterizes some subsectors of capital goods. This would seem to rule out, or at least suggest that relatively low priority should be given to, the professional, scientific machinery and miscellaneous capital goods subsectors of capital goods as far as Southern production and South-South co-operation are concerned.

(7) On the one hand, the total value of the South's imports from the North may seriously overestimate the potential for Southern production via South-South trade. On the other hand, however, the estimates of such potential by Alexander Yeats, wherein only labour-intensive capital goods are considered, and exports to the North are taken as a precondition for such potential, may seriously underestimate that potential.

(8) Given the importance of dynamic considerations determining both the efficiency of capital goods production and the ability to export in judging the potential for growth of production and export of capital goods in the South, it is important to focus on those subsectors in which the South has in recent years achieved relatively high rates of growth of both production and exports. Very considerable evidence that this has been the case in virtually all subsectors of capital goods has been presented. Certainly this has been true of the three general subsectors favoured by previous considerations, namely non-electric machinery, electric machinery and transport equipment. Within these subsectors, particularly attractive branches of activity for development by the South would seem to be power-generating machinery (SITC 711), agricultural machinery (SITC 712), office machinery (SITC 714), metal-working machinery (SITC 715), textiles and leather machinery (SITC 717), other specialized non-electric machinery

(SITC 718 and 719), electric-power generating machinery (SITC 727), miscellaneous electric machinery (SITC 729), railway vehicles (SITC 731), road motor vehicles (SITC 732) and ships and boats (SITC 735).

(9) It is extremely difficult to translate the above considerations into a precise estimate of the additional amount of production and trade of capital goods that might be obtained through the envisioned programme of South-South co-operation in capital goods in which a Southern Capital Goods Company would be created and treated as a partly or wholly domestic enterprise in all or most regions of the South. Nevertheless, since capital goods industries are deemed to constitute the logical focus for South-South co-operation, it is important to attempt to do so. Should an effective programme of South-Suoth co-operation be brought into existence, it would seem reasonable that the rather high growth rates of value added and exports to the South could be maintained until 1990. Without such co-operation, however, further import substitution and export expansion in capital goods would be problematic, making it likely that the growth rates of production and exports between 1975 and 1990 would be considerably lower than in the recent past."

Further research on appropriate institutional mechanism for South-South co-operation, including empirical analyses of experiences of Southern multinationals, investment, technology and markets, are called for. Such research activities may be undertaken as part of a Planning, Research and Action Project for a group of developing countries.

2) Programme activities

UNIDO's activities in ECDC/TCDC cover a broad range. There is perhaps need for concentration on selected programmes or projects having maximum impact. These might differ from region to region and be closely integrated into other research, informational and operational activities of UNIDO. A programme for co-operation in the capital goods sector is suggested from the preceding analysis—perhaps for Latin America or Asia. A programme for metal-mechines for Africa could be suggested, to

include agricultural and rural equipment.

Considerable scope exists in human resource development, particularly in training and development of managers, entrepreneurs, technology licensing negotiators, financial analysts, etc. UNIDO is already active in this field, but there is potential for fuller use of Southern resources and capabilities.

Development of industrial consulting capabilities is another programme field with considerable potential for, e.g., transfer of East and South Asian or Latin American experience to Africa.

UNIDO is active in the technology transfer field. It operates a technological information exchange system among technology transfer registries of 32 developing countries. The total number of contracts registered is over 7000. Detailed information on contracts for specific technologies is provided to member institutions. A coding manual for exchange of information on service agreements is in operation. A methodology for evaluation of technology payments as well as guidelines for software licensing agreements are being developed.

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 system of TIES (Technological Information Exchange System), significant co-operation has been established among the registries to facilitate 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.

A further strengthening of TIES would undoubtedly increase the national technological capabilities in negotiating for acquisition of technology and strengthen the collective bargaining position of the developing countries in the technology market, thus bringing about greater co-operation.

During the relatively short span of its existence, TIES has proved to be an extremely useful co-operative mechanism for developing countries to learn from each others' experiences in acquisition and application of technology, and the technological,

financial and legal framework of technology transfer contracts. This has led to improved bargaining and negotiating capability on the part of developing countries in the technology market, where they are still largely dependent on the multinational and other enterprises of industrialized countries.

3) Informational activities

UNIDO carries out information gathering and dissemination mainly through its data bank, Industrial and Technological Information Bank (INTIB). INTIB came into existence in 1977. It collects and disseminates industrial information through national focal points. The following sectors are covered:

- Iron and Steel
- Fertilizers
- Agricultural Machinery and Implements
- Agro-Industries
- Non-Conventional Sources of Energy
- Petrochemicals
- Vegetable Oils and Fats
- Leather and Leather Industry
- Pharmaceuticals
- Capital Goods
- Food Processing
- Lost Cost Transport for Rural Areas
- Paper Products and Small Pulp Mills
- Energy for Rural Requirements
- Textiles
- Food Storage
- Sugar
- Light Industries and Rural Workshops
- Construction and Building Materials
- Electronics

Technical information profiles as well as manuals are prepared to strengthen the data base. In 1984, 1300 enquiries were handled—from enterprises, information centres, Research and development Institutions, consulting firms, governments,

universities, banks, professional bodies, etc.

Apart from INTIB, a wide range of UNIDO activities result in analysis of data and experiences which may be of value for South-South co-operation e.g. documents and publications on technologies, industrial sub-sectors, country experiences, etc. More time and attention needs to be paid to analysts of relevant operational experiences and their dissemination, e.g., industrial energy management, direct reduction technology for sponge iron manufacture, design and development of agricultural equipment, biofuels and synfuels, etc. Legal, economic and financial aspects, including contractual arrangements, financing methods, management techniques, etc. need to be covered in manuals and publications.

Finally, attention may be drawn to the comprehensive resolution on the subject of ECDC unanimously adopted by the Fourth General Conference of UNIDO held in August 1984, which will govern future perspectives of UNIDO's role in this field. This resolution is appended.

Appendix

Strengthening economic cooperation among developing countries⁴ The Fourth General Conference of the United Nations Industrial Development Organization.

Emphasizing the increasing relevance of and need for economic co-operation among developing countries, particularly in the present international economic climate, as a valuable instrument for promoting the rational and efficient use of human, material, financial and technological resources available in developing countries for their individual and collective welfare.

Recognizing that economic co-operation among developing countries complements North-South co-operation.

Considering the relevant provisions of the Programme of Action on the Establishment of a New International Economic Order,⁵ the Lima Declaration and Plan of Action on Industrial Development and Co-operation,⁶ the Arusha Programme for Collective Self-Reliance and Framework for Negotiation, adopted by the Fourth Ministerial Meeting of the Group of 77 at Arusha in 1979,⁷ the Buenos Aires Plan of Action for Promoting and Implementing Technical Co-operation among Developing Countries,⁸ the New Delhi Declaration and Plan of Action on Industrialization of Developing Countries and International Co-operation for their Industrial Development⁹, the Caracas Programme of Action adopted by the High-Level Conference on Economic Co-operation among Developing Countries, held at Caracas from 13 to 19 May 1981,¹⁰ the International Development Strategy for the Third United Nations Development Decade,¹¹ and the Economic Declaration adopted by the Seventh Conference of Heads of State or Government of Non-Aligned Countries, held at New Delhi from 1 to 12 March 1983.¹²

Recognizing that the Caracas Programme of Action, adopted by the developing countries, provides their basic framework for activities and arrangements in the field of economic co-operation among developing countries.

Mindful that economic co-operation among developing countries could improve the industrial viability and strength of

developing countries, facilitate more efficient and rational utilization of their resources and develop their collective self-reliance.

Recognizing that economic co-operation among developing countries would promote international co-operation on the basis of equality, solidarity and mutual benefits.

Emphasizing the need to intensify the activities of the United Nations Industrial Development Organization for the promotion of technical co-operation among developing countries.

Further Emphasizing the need to encourage international financial institutions of developed countries to continue providing financial assistance to developing countries under such favourable terms and conditions as have characterized the operations of such institutions.

1. *Recommends* the developing countries to formulate policies and establish frameworks of co-operation with a view to sharing information and facilitating the flow of human, scientific, technological, energy and financial resources, as well as increasing direct investment among themselves and collaboration, and increasing South-South trade and other exchanges;

2. *Invites* the developed countries to undertake measures in support of economic co-operation among developing countries through, *inter alia*, increased voluntary contributions to the United Nations Development Programme and special-purpose contributions to the United Nations Industrial Development Fund, especially for financing the aspects relating to technical co-operation among developing countries of the Programme for the Industrial Development Decade for Africa;¹³

3. *Decides* to accord high priority to industrial co-operation among developing countries in the activities and Programmes of the United Nations Industrial Development Organization;

4. *Requests* the United Nations Industrial Development Organization to provide, at the request of developing countries, more active support for the implementation of industrial co-operation among developing countries within the overall context of economic and technical co-operation among developing countries and to this end to assist the subregional, regional and interregional co-operation efforts being undertaken by the

developing countries, *inter alia*, for the purpose of:

- a) Planning industrial development and carrying out prospective studies on industrial technology;
- b) Co-ordinating industrialization policies and strategies and carrying out consultations both in a general framework and in specific sectors and branches;
- c) Exchanging information and experience on industrial policies, sectors and branches;
- d) Studying and adopting agreements on industrial integration and complementarity, the establishment of joint ventures and the general promotion of industrial investments;
- e) Studying and adopting industrial agreements and programmes, thus promoting inter-industry exchanges of manufactures that would promote industrial co-operation among the developing countries;
- f) Carrying out joint programmes and other forms of co-operation with regard to training, research and the development of industrial technology;
- g) Establishing regional consultancy networks;
- h) Identifying and strengthening the existing centres of excellence in developing countries for technological research and training;
- i) Organizing expert meetings to explore economic co-operation among developing countries in selected industrial branches;
- j) Increasing the flows of investment capital among developing countries.

5. *Requests* the United Nations Industrial Development Organization:

- a) To improve its programme of solidarity ministerial meetings in the industrial sector for the benefit of the least developed countries;
- b) To strengthen the Technological Information Exchange System;

- c) To strengthen the activities of the Industrial and Technological Information Bank, particularly in order to provide information on existing and necessary appropriate technologies in various developing countries;
- d) Upon request by a developing country, to disseminate information on its industrial projects that offer possibilities for the participation of other developing countries;
- e) To strengthen its project development services while ensuring compatibility with the quality standards of financial institutions;
- f) To arrange for joint ventures for economic co-operation among developing countries in its industrial investment promotion activities;
- g) To give technical assistance for the development and implementation of special programmes and projects in the field of economic and technical co-operation among developing countries in support of developing countries, and especially least developed countries and African countries within the framework of the Industrial Development Decade for Africa.

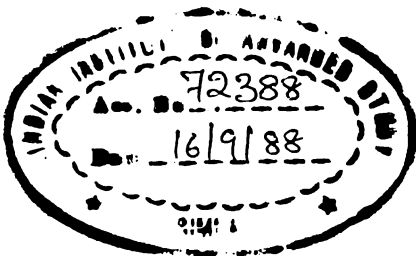
6. *Recommends* the United Nations Industrial Development Organization to continue to follow the usual United Nations procedures for activities in the field of economic and technical co-operation among developing countries in industry, and organizations, in particular United Nations regional commissions and other regional specialized organizations, in the area of economic and technical co-operation among developing countries, so as to avoid duplication of efforts and to ensure the optimum utilization of resources.

References

- 1 Much of the analysis in this paper is based on UNIDO documents and publications. However, the theme of the paper, the views and comments are those of the author, and do not commit in any way the UNIDO Secretariat or Governing Body.
- 2 Based on UNIDO, *Industrial Development and South-South*

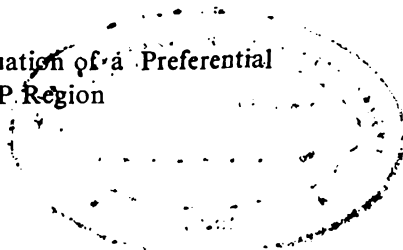
Co-operation, UNIDO/IS. 453 and UNIDO: Industry and Development, Global Report 1985, ID/333.

- 3 James Riedel, "Trade as the Engine of Growth in Developing Countries Revisited," *Economic Journal*, 94, March 1984.
- 4 The Conference adopted the resolution (ID/CONF. 5/RES. 7) by consensus.
- 5 General Assembly resolution 3202 (S-VI).
- 6 ID/Conference 3/31, chapter IV.
- 7 See TD/236.
- 8 *Report of the United Nations Conference on Technical Co-operation among Developing Countries, Buenos Aires, 30 August to 12 September 1978* (United Nations publication, Sales No. E. 78. II. A. II. and corrigendum), chapter I.
- 9 ID/Conference 4/22 and Corrigendum 1, chapter VI.
- 10 A/36/333 and Corrigendum 1.
- 11 General Assembly resolution 35/36, annexure.
- 12 A/38/132, annexure.
- 13 ID/287.



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