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PERSPECTIVES OF SOUTH-SOUTH CO-OPERATION
IN THE AGRICULTURAL MACHINERY INDUSTRY*

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1. OVERVIEW

1.1. The world economic situation and its impact on South-South co-operation

Current developments in the world economy are affecting all countries of the South. Virtually all developing countries continue to face external financial constraints, their terms of trade have deteriorated by an additional 2 per cent and the purchasing power of their exports has further declined. The weakness of exports has had both direct and indirect effects on economic activity in developing countries; it resulted in a decline in the rate of economic growth in the developing world from 4 per cent in 1984 to a little over 3 per cent in 1985.^{1/}

A major problem is the collapse of commodity prices. Declining export earnings in real terms have forced developing countries depending on the export of primary commodities, and very recently also those depending on oil exports, to restrict their imports. Many oil-importing countries are now experiencing the adverse effects of the curtailed market for their exports, and also of reduced workers' remittances.

As has been pointed out:

The sharp decline in inflows of private finance, together with huge interest payments continue to result in large net outflows of resources from the developing countries. Reliance on the private provision of liquidity is proving to be unrealistic, and national aid agencies together with multilateral financial institutions are being increasingly used to influence the policies and priorities of developing countries in need of financial assistance. There is an evident retreat on many fronts from international co-operation.^{2/}

^{1/} International Monetary Fund (IMF), World Economic Outlook (Washington, D.C., April 1986).

^{2/} "The Kuala Lumpur Statement, South-South II: Charting the Way Forward", The Second Summit of Third World Scholars and Statesmen, Kuala Lumpur, Malaysia, 5-8 May 1986.

In many instances Governments of the North are very hesistant to support South-South co-operation, believing that it is harmful to their own interests. Developed countries also apparently act on this basis in the United Nations system, thereby negatively affecting the prospects for international support of South-South co-operation.^{3/}

The South is faced with a profound challenge to its capacity for self-determination. The concept of self-reliance is regaining importance as a development strategy that will mobilize all the resources and potential of the developing world, while at the same time making full use of the positive effects of international economic co-operation.^{4/}

1.2. Political and institutional framework of South-South co-operation

The Movement of the Non-Aligned Countries and the Group of 77 offer the broadest framework for co-operation among developing countries in the interest of achieving greater self-reliance. There is a distinction drawn between the two with regard to their respective efforts to achieve self-reliance. The approach of the Movement of the Non-Aligned Countries is primarily one of direct action, i.e. unilateral measures by developing countries, while the approach of the Group of 77 is through bargaining, i.e. through negotiations between the developed and developing countries within the framework of the United Nations.^{5/}

Non-Aligned Movement

In the Non-Aligned Movement, the concept of self-reliance was first pursued in the political sphere directed towards the preservation of political

^{3/} B. Cizelj, "South-South Co-operation", Contribution to the Panel, Panel B.1.5, World Development: Risks and opportunities, 18th World Conference SID, Rome, Italy, 1-4 July 1985.

^{4/} B. Cizelj, "Ekonomsko sodelovanje med deželami v razvoju" (Economic co-operation among developing countries), Summary, Komunist (Ljubljana, Yugoslavia), 1982.

^{5/} B. Pavlic, R.R. Uranga, B. Cizelj and M. Svetlicic, eds., The Challenges of South-South Co-operation (Boulder, Colorado, Westview Press, 1983).

independence. At the end of the 1960s the Non-Aligned Movement began to pay greater attention to economic matters. With the Lusaka Summit, a trend of recognizing the importance of economic development and co-operation among developing countries originated that was later developed further at the Georgetown Conference of Foreign Ministers and culminated at the Algiers Summit. With the Algiers Summit the Non-Aligned Movement became an international pressure group for the reorganization of the international economic system. The establishment of the New International Economic Order (NIEO) became one of the main objectives of the Movement.^{6/}

Group of 77

The Group of 77, as the principal third world organ for the aggregation and articulation of its collective economic interests vis-à-vis the developed countries, has represented developing countries in all major international economic events since 1964.^{7/} In May 1981, the High-Level Conference of the Group of 77 on Economic Co-operation among Developing Countries (ECDC), held at Caracas, Venezuela, which was the culmination of a series of important gatherings, adopted the Caracas Programme of Action (CPA) on Economic Co-operation among Developing Countries.

1.2.1. The Caracas Programme of Action (CPA)

The Caracas Programme of Action on Economic Co-operation among Developing Countries (CPA) is a very comprehensive and detailed programme on ECDC and is meant to guide intensified economic co-operation among developing countries in the areas of trade, technology, food and agriculture, energy, raw materials, finance, industrialization, and technical co-operation.

^{6/} Leelananda de Silva, The Non-Aligned Movement: Its Economic Organization and NIEO Perspectives, the Challenges of South-South Co-operation, Research Centre for Co-operation with Developing Countries, (Boulder, Colorado, Westview Press, 1983).

^{7/} These included the United Nations Conference on Trade and Development (UNCTAD) sessions, the United Nations Industrial Development Organization (UNIDO) General Conferences, the special sessions of the United Nations General Assembly on Development, the Paris Conference on International Economic Co-operation and discussions in the International Monetary Fund (IMF) and the World Bank.

The Caracas Conference also adopted a timetable for follow-up meetings at the subregional, regional and interregional levels and set up a mechanism for co-ordination, monitoring, follow-up and evaluation. Groups of experts, heads of national agencies, action committees, national research and training centres of a multinational scope, and similar bodies are to meet and to identify and implement required actions.

Among its numerous recommendations, the CPA recommended the establishment of industrial co-operation projects involving transfer of technology and the setting-up of joint ventures in various priority areas such as raw materials, fisheries, agriculture and agro-industries, mining and mineral processing, petrochemicals, chemicals, textiles, wood industries, building materials, and power generation.

1.3. Support by international organizations

Much of the work of the United Nations Development Programme (UNDP), the United Nations Conference on Trade and Development (UNCTAD), the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Industrial Development Organization (UNIDO), as well as of the regional economic commissions, is aimed at promoting co-operation among developing countries. Specialized financing agencies have also been involved in assistance for South-South co-operation. Most of these programmes in one or another way complement the CPA and the Action Programme on Economic Co-operation among Non-Aligned and other Developing Countries (APEC) or contribute to the implementation of the recommendations of these two major programmes of action of the developing countries.

The task of the United Nations is, whenever possible, to play "the role of a catalyst by providing effective assistance in critical areas; TCDC (technical co-operation among developing countries) and ECDC (economic co-operation among developing countries) are a new dimension in practical international co-operation".^{8/}

8/ B. Pavlic et al., eds., op.cit.

The need for support of ECDC and TCDC by international organizations and by developed countries will continue to grow and it is hoped that it can be achieved in spite of the present very difficult situation in the United Nations.

1.4. Current developments in South-South co-operation

Evaluation of the current situation of South-South co-operation leads to the conclusion that it has been much more effective and successful at the regional and subregional levels than at the interregional level, owing to geographical closeness and similarities in development and culture of country groupings within a region.

Nevertheless, mutual trade has made good progress in the last 15 to 20 years, primarily at the level of the developing world as a whole. The share of developing countries in total world exports increased from 4 per cent in 1973 to 7.5 per cent in 1984. The 1970s were characterized by an enormous increase in South-South trade, due to increasing oil prices and a bigger share of industrial products. By 1981 South to South exports reached \$152.2 billion, about 28 per cent of developing countries' total exports, making South-South trade the most dynamic component of international trade (but recording a decrease in 1982-1984 of almost \$20 billion).

According to Dr. Boris Cizelj:

"...except for trade, the scope of South-South co-operation is still rather marginal. There are over 2,000 intra-third world joint ventures, but most of them operate in trading, and not in production.

Financial co-operation seems to have been stagnating in recent years, after the encouraging expansion in the mid-seventies. As in production, if not even more so, the lack of an appropriate multilateral institutional infrastructure in financing (such as the proposed "South Bank") hampers the feasible and desirable patterns of South-South co-operation.

Technical co-operation among developing countries (TCDC) is also progressing slowly, primarily since it is treated by governments as a part of their international co-operation policies, rather than as an instrument of support to their economic

co-operation with other developing countries. Thus TCDC often remains a classic governmental activity, completely unrelated to the efforts of their public, and particularly private sectors in the framework of South-South co-operation."^{9/}

The increase of industrialization in the South is slowly changing the situation and providing increasing scope for exchange within the South. This was particularly felt in the 1960s and 1970s, when the pace of industrial development was increasing in many developing countries. The process gave impetus to an increase in South-South trade.

Since the 1980s, however, the process of industrialization in the South has seriously suffered. The recession in the North and the consequent change in the global environment had its impact on the cost and availability of finance, on commodity prices, and on market access, all of which combined to bring the development process in the South to a virtual standstill.

The development of capital goods production can be considered as an important and strategic element for the development of developing countries. It has also been a subject of special attention at various international conferences, including UNCTAD II, the Second General Conference of UNIDO (Lima, Peru, 1975), the Third General Conference of UNIDO (New Delhi, India, 1980), the High-Level Meeting of the Group of 77 (Caracas, Venezuela, 1981), etc.

So far, the share of capital goods in the exports of developing countries is still very low, slightly more than 6 per cent. This production is concentrated in only 10 to 12 more advanced developing countries, while the others have practically no capital goods industry at all.

1.4.1. South-South co-operation in the agricultural machinery industry

The situation is very similar in the agricultural machinery industry. According to studies by UNIDO, the world agricultural machinery industry is heavily concentrated in a small number of countries. Among developing

^{9/} B. Cizelj. "South-South Co-operation", Contribution to the Panel, op.cit.

countries, only Argentina, Brazil, India, Republic of Korea, and Yugoslavia have a significant domestic production of agricultural machinery, while Mexico is emerging as an important new producer. There is also some production of non-motorized agricultural implements and machinery in Colombia and a few other developing countries.^{10/}

Production of agricultural machinery in developing countries started as import substitution, largely supported by government policies. For example, in Brazil, production of agricultural machinery started as additional production in the spare parts industry for automotive industries and also through expansion of repair shops into production units. In these workshops the imported machinery was reproduced and, later on, improved by certain changes in order to better suit local farmers' needs.

In 1980 the exports of agricultural machinery from 13 developing countries totalled nearly \$163 million (at constant 1975 prices). The share of Latin America in these exports was 88 per cent, of which 85 per cent came from Brazil alone, followed by Argentina, Mexico, Columbia and El Salvador. Asia's share was about 11 per cent, led by Singapore, which accounts for about one third of the agricultural machinery exports by Asian developing countries. Exports by African countries are almost negligible, with less than 1 per cent of the total exports of agricultural machinery by developing countries.

About 80 per cent of developing countries' exports of agricultural machinery are directed to other developing countries, the majority of this being exports from Brazil to other Latin American countries.^{11/}

While most South-South co-operation is limited to trade, there are also some examples of production co-operation between developing countries, such as the assembly of Romanian and Yugoslav tractors in Egypt and India.

^{10/} UNIDO, "The agricultural machinery industry: an appraisal of the current global situation production and market outlook", vol.II, Statistical Compendium (UNIDO/IS.408/Add.1), 1983.

^{11/} UNIDO, "A Survey of the Latin American agricultural machinery industry" (UNIDO/IS.407), 1983.

2. SURVEY OF THE EXPERIENCE AND NEEDS OF DEVELOPING COUNTRIES IN RELATION TO SOUTH-SOUTH, PARTICULARLY INTERREGIONAL, CO-OPERATION

2.1. Background and methodology

The seriously deteriorating economic position of developing countries and the inadequate implementation of action programmes for economic co-operation within the Group of 77 and the Non-Aligned Movement set a very high priority for the Harare Summit on a critical evaluation of the experience and achievements of developing countries in regard to South-South co-operation.

Analysing resolutions, recommendations and action programmes for South-South co-operation adopted by developing countries at various meetings and conferences at the high ministerial level, it is easy to identify numerous repetitions that point to a lack of appropriate specific knowledge and experience on the part of the respective representatives, including a relatively small participation by business-oriented persons and entrepreneurs in the preparation of these documents and proposals. In many cases, South-South co-operation is still a domain of political rather than economic competence, and to date very few proposals have been transformed into successful measures promoting economic co-operation among developing countries.

From these observations, the idea emerged for a major research programme on South-South co-operation, jointly launched by the Research Centre for Co-operation with Developing Countries (RCCDC), Ljubljana, Yugoslavia, and the Zimbabwe Institute for Development Studies (ZIDS), Harare, in order to analyse South-South co-operation in a new and more practical way and evaluate in a business-like and critical manner the achievements and programmes of economic co-operation among non-aligned and other developing countries.

2.1.1. Methodology used

A general questionnaire on South-South co-operation was, therefore, prepared in order to obtain the required empirical data and information on the status, problems and achievements of South-South co-operation as they are seen

by different actors, such as government bodies and agencies, business associations, chambers of commerce and economy, development and commercial banks, insurance companies, engineering and consulting firms, universities, research institutes, scholars, experts and other eminent persons of the third world. Additionally, field interviews are being conducted in a selected number of developing countries. It is expected that new insights regarding general awareness, motives, limiting factors and the most promising fields of South-South co-operation will be obtained through this task.

By the end of May, 77 completed questionnaires were returned to RCCDC from 30 developing countries in Africa, Asia, and Latin America and the Caribbean. This number includes the field interviews conducted in Brazil, Guayana and Thailand. The composition of this pilot survey is the following: 24 respondents represent government institutions, including national focal points, associations, chambers and universities; 25 respondents are from the field of banking, representing development and commercial banks; and 28 respondents represent business: manufacturers, import-export firms, consulting organizations etc.

Working in close co-operation with UNIDO, a special part of the survey was prepared in which particular attention was paid to perspectives of South-South co-operation in the agricultural machinery industry, with emphasis on interregional co-operation between Latin American and Asian developing countries and the countries of Sub-Saharan Africa. In order to detect and cover essential sections of the prospective population, three additional questionnaires were prepared for the respective groups of respondents:

(a) Government and institutional bodies and financing institutions in Africa; owing to their important role in national development policy and particularly in the agriculture and agricultural machinery industry sector;

(b) Manufacturers, dealers and users of agricultural machinery, implements and equipment in Africa;

(c) Manufacturers, consultants, exporters and individuals in selected Latin American and Asian developing countries; to determine their attitude towards possible co-operation with African countries in the production of tools, agricultural machinery and implements.

With the objective of monitoring the socio-economic development of developing countries, and in view of the situation in Africa and discrepancies between proclaimed resolutions and implemented policies and actual results at national and entrepreneurial levels, this part of the survey was extended by conducting field interviews in selected countries of Sub-Saharan Africa. The aim of these interviews, conducted in Côte d'Ivoire, Ghana, Kenya, Mali, Senegal, Tanzania, Zambia and Zimbabwe, was to examine the opinions of different groups and their awareness of potentials for South-South co-operation, to compare these findings with the results of sectoral studies of the research programme on South-South co-operation that RCCDC and ZIDS are preparing for the Harare Summit, and to analyse the replies received in connection with the general questionnaire on South-South co-operation.

For this part of the survey, 55 additional questionnaires on perspectives of South-South co-operation in the agricultural machinery industry sector in Africa were collected: 25 from government and financing institutions and 30 from entrepreneurs and potential partners.

2.2. Main issues covered and results of the survey

2.2.1. Motives, goals and implementation levels for South-South co-operation

The results of the survey on South-South co-operation, based on the general questionnaire, confirm that there is a strong feeling among the actors of South-South co-operation that the concepts of self-reliance and mutual co-operation among developing countries should become an integrated part of the development strategy of developing countries, and that this will benefit each country and the group as a whole. The respondents agreed that South-South co-operation is not a substitute for North-South economic relations, but that it is a part of international economic relations, one way of facing the problems and influences of developments in the world economy.

The respondents are very critical of the experience and achievements in South-South co-operation to date and they give higher priority to "national development goals and economic factors" than to "global approaches" such as bargaining positions vis-à-vis the North etc. Economic co-operation among developing countries still tends to reflect the prevailing political interests of the governments of developing countries rather than the economic ones. It is time to include to a greater degree the "bottom-up" approach in the preparation of new recommendations, and to transform many of the proclaimed solutions and recommendations into adequate measures and instruments for promoting South-South co-operation starting at the national level.

(a) Motives

Two thirds of respondents consider the "Promotion of national development" and "Access to new markets" as the most significant motives for economic co-operation among developing countries.

So-called global motives, "More favourable co-operation compared to North-South relations", "Easier overcoming of developed countries' protectionism in trade and transfer of technology" and "Improvement of bargaining position....." form the next group of important motives for South-South co-operation, which seemed to be less significant but still relevant motives.

Additionally, two thirds of respondents consider "Diversification of developing countries' international economic co-operation" not so important motives for South-South co-operation.

Among the replies on specific perspectives in the agricultural machinery industry, nearly all respondents put "Access to new markets" or "To gain new market" at the top of their (entrepreneur) motives.

(b) Goals

Assessing the relative importance of various goals of South-South co-operation, the respondents have similar opinions as for the motives.

"Promotion of South-South trade (62.8 per cent) and "Promotion of national development goals" (61 per cent) are the two main goals to be achieved through mutual co-operation among developing countries. It is interesting that 68 per cent of the replies from business circles put emphasis on trade rather than other forms of economic co-operation among developing countries, which is a rather traditional view. One of the reasons could be that they see in the promotion and liberalization of trade among developing countries a way to enlarge the markets and potential demand for future joint investments, industrial production etc.

The question of goals is a very subtle one, dealing with different levels of South-South co-operation at the subregional, regional and possibly on the interregional level (as is the case with the agricultural machinery sector).

When assessing the level of implementation of the major goals of South-South co-operation, 52 per cent of respondents are convinced that "Promotion of national development goals" and "Promotion of South-South trade" are for the present "partly achieved", as is also the case with the "Promotion of national technological capabilities". The respondents are quite critical about the level of implementation of the following South-South co-operation goals: "Reducing disparities among developing countries' economies", "Development of joint infrastructure" and "More effective North-South negotiations". While the latter is not in the hands of developing countries alone, the two former goals are hampered partly by external and partly by internal factors.

(c) Principal measures

As was already mentioned, the majority of respondents think that "Liberalization of trade" is by far the most important measure for promoting economic co-operation among developing countries (66.9 per cent). Less importance was given to "Promotion of various forms of payment arrangements" (48 per cent) and "intra-commercial bank co-operation" (40 per cent).

In the next category of important measures, "Support programmes for least developed countries" and "Implementation of joint sectoral programmes" were each listed by approximately one third of the respondents.

The second group of principal measures consists of those listed as "Less important" measures by the respondents. This group includes "Harmonization of investment codes" and "Preferential treatment of joint firms", two measures usually put on the list of incentives expected by firms from other developing countries when they enter into joint ventures or other more advanced forms of economic co-operation with a developing country.

One third of respondents consider "Establishment of developing countries' multinationals" as a less important but still relevant measure for promoting South-South co-operation. This confirms the experience that developing countries' multinationals have been created as regional marketing or holding companies in Africa, Asia, and Latin America and the Carribean, following the integration groupings or associations of producers of primary commodities. ^{12/}

The strategies of the Lagos Plan of Action and the Industrial Development Decade for Africa (IDDA) are also based on the liberalization of trade and the preferential treatment of joint programmes (firms). An integrated market is a sine qua non for the development of local agricultural machinery production and for potential South-South co-operation in this sector on the interregional level.

It is evident that respondents are aware of the importance of the principal measures for South-South co-operation, but it appears that they do not possess enough information and evidence on the real impact of these measures on their country's economic relations with developing countries. More research and analyses will be necessary to answer the promoters of South-South co-operation on such questions.

^{12/} E. White, in: B. Pavlic et al., eds., op.cit.

2.2.2. Reinforcement of the institutional framework

The present international situation, including the financial crisis of the United Nations system, is not favourable for any larger changes in North-South relations and global negotiations which could positively affect South-South co-operation. The respondents to the survey stated that South-South co-operation is not receiving adequate attention within the United Nations system. According to their replies, the United Nations should contribute more in training and consultations, and particularly in sectoral programmes, in order to develop the local human resources and other potential resources in developing countries that have to become the main actors in the development process of these countries.

The respondents stated that they thought that South-South co-operation was not receiving adequate attention within the existing institutional framework, such as the Group of 77 and the Non-Aligned Movement, and that that situation needed to be improved. Improvement would mean transforming political decisions adopted at the global level into concrete proposals, forms, instruments and measures that were capable of supporting economic entities in their search for projects and partners in other developing countries, both within the subregion or region, and, if possible, outside the region.

The institutional aspects of South-South co-operation are entering into a new phase. Actions taken by the Group of 77 and the Non-Aligned Movement are becoming more and more co-ordinated, and the roles of the two are becoming better defined. The Non-Aligned Movement is becoming the initiator of concrete forms of co-operation between developing countries, while the Group of 77 is becoming the executing body. It is of crucial importance for the development of South-South co-operation that developing countries become interested in mutual co-operation, even if it is in a programme of a smaller scope, but with the prospects that it will become a programme belonging entirely to the Group of 77, providing mutual assistance and self-help. To accomplish this goal, developing countries need an infrastructure and skilled management personnel; further, they must organize the exchange of information and experience, training, the development of human resources, etc.

2.2.3. Some key factors in South-South co-operation

It appears that developing countries have been rather passive to date in establishing a stronger "third world identity" among their people. Recently, the dissemination of accurate information on the economic problems and needs of developing countries has become a part of the flow of information between developing countries, thanks to the pool of news agencies of the non-aligned and other developing countries. However, this information is still very modest compared to the tremendous amount of information on the third world possessed by the developed countries and transnational corporations. It is necessary to develop a comprehensive and systematic exchange of information among actors and promoters of South-South co-operation in order to overcome the disadvantaged position of developing countries caused by a lack of information. The existing information systems of the United Nations agencies could be of great help in this respect.

It is time to introduce changes in the curricula of third world universities and technical colleges, including, for example, information about the soil, climate and other conditions of agricultural production in various regions; economic geography of the third world; industrial development, its achievements and constraints in individual countries or subregions; and the position and potential of South-South co-operation in the world economy.^{13/}

Respondents to the survey place relatively high importance, as a "positive" factor, on a "degree of complementarity of developing countries' national economies" (50 per cent). In other words, the respondents count on complementarity as one of the vehicles for development of the joint programmes within the subregion or region. That was particularly emphasized for the two African groupings: the Preferential Trade Area for Eastern and Southern African States (PTA) and the Economic Community of West African States (ECOWAS), in relation to industrial development and an integrated market for agricultural machinery for the modern sector.

^{13/} B. Cizelj, "South-South Co-operation", Contribution to the Panel, op.cit.

Under "negative" factors, the respondents placed greatest emphasis on "Substantial differences in the patterns of developing countries' international economic relations (regulations on foreign investment, double taxation, import-export duties etc." (57 per cent), and on "Lack of suitable technologies". If the third "negative" factor, i.e. "Lack in tradition of South-South co-operation" is added and this group of factors is compared with the limiting factors, it can be seen that many of the obstacles to greater South-South co-operation at the regional and interregional level lie in the "traditional ties" between former colonial powers and their ex-colonies, now independent States. Different industrial standards, education systems, legal systems and regulations make South-South co-operation a more complicated and time-consuming process. Too great dependence on partners from developed countries for standardization, quality control and metrology has in many cases eliminated as potential partners developing countries from other regions or groupings. This has considerably narrowed the perspectives for interregional or even intra-regional co-operation.^{14/}

The next negative factor, "Inadequate perception of national interests causing tension and conflicts on the regional and international level" (50.6 per cent of the listed replies) brings up the problem of diversity of the South in respect of historical, cultural and socio-economic differences.

2.2.4. North-South relations

There is an evident standstill in the North-South dialogue and an absence of effective means for international co-operation. The majority of respondents consider North-South relations as a very important factor for South-South co-operation and they indicated that North-South relations have an "impact" on South-South co-operation (83 per cent of the listed replies).

^{14/} Preliminary findings of a sectoral study on standardization, quality control and metrology, South-South co-operation, Research Centre for Co-operation with Developing Countries (RCCDC) and Zimbabwe Institute for Development Studies (ZIDS), 1986.

It is the opinion of 37.7 per cent of respondents that North-South relations have had a "negative" impact on the development of South-South co-operation. This can be linked with the assessment of external factors and their impact on South-South co-operation, where approximately one third of replies indicated that the "Impact of other external factors like state policies, transnational corporations, special North-South agreements etc." were "negative", or with the replies on limiting factors where "Traditional North-South flows of foreign transactions" were ranked as the main limiting factor in 23 cases.

One third of respondents think that North-South relations have a "positive" impact on South-South co-operation. The results of the field interviews in Africa on the potential for South-South co-operation in the agricultural machinery industry reinforce the role of North-South relations and, in particular, the possibilities for trilateral co-operation.

The options for co-operation are numerous, especially in the production of agricultural machinery for the modern farm sector, where all of the larger projects in Africa require the assistance of the international community, including the large manufacturers of tractors and implements from developed and developing countries.

2.2.5. Major effects of South-South co-operation

Some of the criteria for judging the efficiency of South-South co-operation in the long run could be an evaluation of its contribution to the economic development of the countries or sectors involved in South-South co-operation. Respondents to the survey were asked to rank ten possible "major effects" that South-South co-operation could contribute to the particular sectors or economies in question.

The respondents placed "Capital and technology flows", "Joint development programmes" (44.2 per cent of listed replies each), and "Access to new markets" (37 per cent) at the top of this list. They think these effects are "positive" for the development of their sector or country.

Effects like "Growth rate", "Development of infrastructure", and "Economy of scale" were listed among "neutral or non-definable effects" (about one third of respondents), which probably confirms the earlier statement that the actors of South-South co-operation do not always possess an adequate mechanism or instrument to measure its achievements or indirect contributions.

The respondents think that the achievements of South-South co-operation in their sector are "good" at the bilateral level (33.8 per cent), "modest" at the regional level (38.4 per cent) and "poor" at the interregional level (38.4 per cent).

2.2.6. Forms and instruments of South-South co-operation

It has been suggested that:

"Due to the great variety of developing countries' objective international and internal positions, except mutual trade, other areas of economic co-operation (more sophisticated or demanding) have not had a very satisfactory record at the interregional level. It seems that the main reason for that lies in the peculiar fact that this type of co-operation implies - at least in the beginning - an unfavourable cost-benefit ratio, which is particularly difficult to accept when the anticipated benefits are not closely related to direct, short-run interests of countries concerned." ^{15/}

The replies of respondents to the survey confirmed the above findings; 42.9 per cent of them ranked trade as the "most important" form of South-South co-operation in their sector. "Financial co-operation" and "Technical co-operation" are the second and third most important forms, but much less emphasized (only 14 per cent of listed replies each).

If these figures are compared with the assessment of the most promising forms or instruments of South-South co-operation, the situation is more in accord with the recommendations and long-run possibilities. "Joint venture financing" (37.7 per cent), "Project financing" (36.4 per cent) and "Industrial co-operation" are considered as "most promising" forms of South-South co-operation.

^{15/} B. Pavlic et al., eds., op.cit.

Other forms, particularly "Bilateral and multilateral countertrade arrangements", "Joint investment" and "Multilateral payment and credit arrangements" are ranked among "promising" forms and instruments (approximately 48 per cent of listed replies each).

2.2.7. Conclusion

South-South co-operation must become a self-generated development process with multipurpose goals and multiple ways to achieve it. It must be based on the national development strategies of the developing countries, pooling resources and potentials for particular, well-defined and "tailored to needs" projects and programmes.

Among the useful observations and proposals on how to improve South-South co-operation emerging from the survey were the following: "South-South co-operation is still a low priority for governments of the developing countries" and "it needs to be improved through meetings with the participation of entrepreneurs".^{16/}

The following list comprises specific findings on South-South co-operation in connection with the production of agricultural machinery emerging from the survey:

(a) Most of the interviewed persons in Africa have had some previous experience in international co-operation, and particularly in technical co-operation. Their experience has been good and they are interested in establishing co-operation in the production of the following:

- Tractor-drawn implements
- Agricultural machinery
- Tractors
- Hand tools

(b) The respondents are in favour of new production in their own existing factories, either with substantial enlargements or with minor adaptations.

^{16/} Answers from the survey on South-South co-operation carried out by RCCDC and ZIDS.

(c) The main problems for the establishment of new production lines are lack of capital and availability of appropriate technology and know-how. They expect that these problems could be solved by adequate assistance from their governments and national development banks.

(d) In addition to this, they seem to be dissatisfied with the supply of spare parts for tractors and farm machinery and they blame primarily the lack of foreign exchange and the dealers' lack of means for stocking parts.

(e) They see the training of farmers and of special maintenance and service personnel as most important for the modernization of agricultural production.

(f) The interviewed persons from overseas developing countries stressed the importance of adequate information exchange, particularly with regard to local conditions and the stage of development of the agricultural sector. Among the greatest obstacles to co-operation, they also mentioned the following:

- Farmers' low purchasing power
- Primitive farming methods
- Relatively long period needed for investments to be profitable

(g) Their main interest seems to be to gain ground for firms in Africa, and they are in favour of lifting import licensing and removing import duties from components and semi-finished goods for the production of agricultural machinery in Africa.

3. PROSPECTS FOR SOUTH-SOUTH CO-OPERATION IN THE AGRICULTURAL MACHINERY INDUSTRY

3.1. The importance of agriculture for developing countries

Agriculture is a predominant sector for most low-income countries. About 70 per cent of their population depends on agriculture; 60 to 70 per cent of

income is spent on food; and many non-agricultural activities also depend on agriculture. There are strong links between agriculture and overall economic growth. Few countries have achieved sustained economic growth without developing their agricultural sector.^{17/} In the late 1970s agricultural exports accounted for 30 per cent of the total export earnings of developing countries.

Over the past three decades there has been impressive progress in agricultural development in the South. It has been supported by major research efforts applied to food crops, more efficient use of existing land and better quality seeds, and by irrigation schemes, all of which increased food production in much of Asia, North Africa and the Middle East. The Green Revolution has transformed the lives and prospects of millions. However, it has not yet taken place in many parts of the developing world.

Agricultural output in developing countries grew by just under 3 per cent annually in the last decade; but because of the growing population, per capita output growth was only 0.3 per cent per year. This average conceals sharp differences; the per capita output growth ranged between 1.4 per cent in South-East Asia, 0.6 per cent in Latin America, and little or none in the low-income countries.

In Africa, agricultural output declined from 2.7 per cent in the 1960s to 1.3 per cent in the 1970s. The situation in Sub-Saharan Africa was still worse, as shown in table 1.

^{17/} World Bank, The World Development Report 1982 (Washington, D.C., 1982).

Table 1. Growth of agricultural production in Africa
South of the Sahara (1960-1982)

(Percentage)

<u>Average annual rate of growth of production</u>				<u>Average annual rate of growth of production per capita</u>			
<u>Food</u>		<u>Total agricultural production</u>		<u>Food</u>		<u>Total agricultural production</u>	
<u>1960-70</u>	<u>1970-82</u>	<u>1960-70</u>	<u>1970-82</u>	<u>1960-70</u>	<u>1970-82</u>	<u>1960-70</u>	<u>1970-82</u>
2.5	1.8	2.5	1.4	0.2	-0.9	0.2	-1.1

Source: World Bank, Toward Sustained Development: A Joint Program of Action
for Sub-Saharan Africa, 1984.

The drought of 1983-1984 (although its duration is longer in many areas) reduced agricultural production further and affected food crops, cash crops, livestock, water levels and power supplies, in effect, all economic activities.

3.2. Agriculture in Africa

The agricultural sector in Africa, particularly in the countries of Sub-Saharan Africa, provides employment for 80 per cent of the population, and contributes up to 60 per cent of Gross Domestic Product (GDP) and about 50 per cent of export earnings. Through governmental pricing policies and tax systems, it creates a great part of domestic accumulation. Agricultural output is the most important determinant of overall economic growth in Africa, and its sluggish record in recent years is the principal factor underlying the poor economic performance of African countries.

A predominant part of the agricultural sector in Africa comprises small farmers who are using traditional farming methods; their main tools are the pick, hoe and machete.

Export crops and food for urban populations are mainly produced by modern farms and plantations, which employ only 10 per cent of the active rural population, and which are equipped with modern machinery. During the 1960s and 1970s many African countries directed a substantial proportion of their investment to large-scale, government-operated estates which involved heavy capital outlays for mechanization and irrigation schemes. Most of these ventures did not fulfil their expectations. They were beset with management problems, overemployment of staff, underutilization of machinery, and problems of maintenance of equipment and infrastructure.^{18/}

Except for a few African countries, irrigated cultivation is not traditional. Irrigation schemes prevail in Egypt, where they cover 100 per cent of arable land and, in Sudan, where they cover 75 per cent. In all other African countries this figure is below 10 per cent, in most cases below 5 per cent, except for Madagascar and Mauritius.

3.2.1. The need for local development and use of industrial inputs

Efficient local production and use of the right kind of agricultural equipment and machinery are fundamental to the development of Africa. In the long run, most African countries cannot afford to import agricultural equipment in the quantities required to meet their social and economic goals. In addition, there is a tendency for outside suppliers to be more interested in supplying what is convenient and profitable for them rather than what is appropriate to African users.

A strong domestic agricultural machinery industry would make progress possible in five areas:

(a) It would contribute to greater productivity in agriculture and food self-sufficiency;

(b) It would raise employment, rural incomes and the quality of life;

(c) As an industry producing capital goods, and as a purchaser of industrial products, the agricultural machinery sector would become the seed for industrial development and a stimulus for related industrial activities;

^{18/} World Bank, The World Development Report, 1982, op. cit.

(d) The agricultural machinery industry may lead to the creation and expansion of a reservoir of skills and technical knowledge that can be employed throughout the entire industrial sector;

(e) Local production of agricultural machinery will help to save foreign exchange.

3.2.2. Local production of agricultural machinery in Africa

In their efforts to find solutions to overcome the problem of food production in Africa, FAO and UNIDO have prepared projections and programmes for the development of agricultural production in Africa and for related industrial inputs, including agricultural machinery and equipment.

The African continent has the basic natural and human resources needed for the production of industrial agricultural inputs; however, these resources are still utilized relatively little. Local production of agricultural machinery and equipment is fundamental to Africa's development, because without local production the achievement of self-sufficiency will be delayed, employment will stagnate, and higher income in rural areas will not be achieved. Rural development is of crucial importance, as it is the only way to stop migration to urban areas.

Apparent demand for agricultural machinery and equipment in Africa currently amounts to \$ 1 - 1.5 billion annually, according to UNIDO estimates.^{19/} Less than 10 per cent of this is supplied by local manufacturers. There are about 100 industrial and semi-industrial units in Africa producing some \$ 150 million worth of agricultural implements and machinery per year. Their value added is only about one third, so that the actual import of agricultural machinery, implements and components is over 95 per cent.

^{19/} UNIDO, "A survey of the African agricultural machinery industry" (UNIDO/IS.377), 1983.

The annual demand for agricultural machinery and equipment projected by FAO (Scenario B) for the year 2000 is about \$ 2.7 billion. According to this projection, demand would double by the year 2000, while local production would have to increase 20 times in order to meet this demand.

The development of the agricultural machinery industry in Africa should be directed towards two goals: (i) to increase production in respect of quantities and range of products, including tractors and motorized equipment, if possible by enough to cover the total demand; and (ii) to increase the value added.

Large investments will be required to fulfil those targets. The costs of these investments are beyond the possibilities of African countries and they will need assistance in funds, technical co-operation and training. It is expected that this assistance will be extended through co-operation of developed and developing countries.

The First Regional Consultation on the Agricultural Machinery Industry, held in Addis Ababa in 1982, and the Second Consultation, held in Vienna in 1983, analysed the factors needed for international co-operation in the agricultural machinery industry and adopted recommendations on measures to promote local manufacturing of industrial inputs in developing countries, assisted by transnational corporations and the international community. So far the results have been limited.

3.3. The Industrial Development Decade for Africa (IDDA) as a framework for interregional co-operation

The alarming situation in Africa South of Sahara has made the world aware of the complexity of problems to be solved and the difficulty of barriers to be overcome. It has become clear that Africa must exploit to the fullest its natural and human resources. To take any other course of action would result in further weakening and impoverishing of Africa for future generations.

The commitment of the Heads of State and Government of the Organization for African Unity (OAU) in the Lagos Plan of Action to accord the major role to industry reaffirms their determination to change the economic structure of Africa. This determination was reinforced in the General Assembly's decision of proclaiming the years 1980-1990 as the Industrial Development Decade for Africa. The stimulation of economic growth of Africa must come, it was stated, first and foremost from within. Priority should be accorded to achieving food self-sufficiency by providing the physical and economic policy conditions necessary for exploiting the land fit for cultivation.

The second priority was to promote a gradual economic integration at the regional level and to co-ordinate development policies of various countries grouped together geographically, not only to facilitate the creation of preferential regions and markets, but also to co-ordinate the economic policies of African countries in facing non-African economic partners.

The key objective of the Lagos Plan of Action is the development of industrial activities at the subregional level. The integration of the whole economy will be achieved by creating effective linkages between industry and agriculture, by providing the infrastructure of agricultural machinery and equipment in the broad sense, that is, irrigation, food processing and storage equipment, etc.

Within regional groupings such as PTA and ECOWAS, there are already established programmes of country specialization in the production of agricultural inputs. These programmes and orientation on the intra-regional level should have some effects on interregional co-operation between Africa and other developing regions, and not necessarily negative ones. Third parties should take into account all the regulations and modalities of the regional groupings and through co-operation with African partners find the way to penetrate the now enlarged and more sophisticated markets. Better managed and enlarged African markets will provide better opportunities for South-South economic co-operation than the present unstable and poor markets.

In the present situation, African countries are not yet able to fulfil the demand for agricultural inputs with local production. Increased local production is, at least in its initial stages, possible only through co-operation with other countries.

South-South co-operation in the production of agricultural machinery has some advantages in comparison with traditional North-South co-operation. First, through interviews with users, dealers and producers of agricultural machinery in different African countries, it has been found that products made in countries with similar climatic and soil conditions (e.g. in Africa, Asia and Latin America and the Caribbean) are better adapted to African conditions than those produced in the Northern hemisphere because of the experience of these countries and knowledge of what quality and quantity of mechanization is best suited for tropical conditions. Secondly, production technology transferred from other developing countries to Africa is more appropriate to African conditions than highly sophisticated technology from the developed world. Thirdly, technical personnel at all levels can be obtained from developing countries, either through technical co-operation between developing countries (TCDC) or through co-operation contracts at the entrepreneurial level.

3.4. Potential for South-South co-operation

It is clear that African countries should put greater emphasis on local production of industrial inputs for agriculture. In the search for possible ways to achieve this, the potential for South-South co-operation in the production of agricultural machinery is receiving more and more attention. According to the findings of the survey, respondents judged the advantages of South-South co-operation in this field to be the following:

- (a) Enlargement of the number and selection of potential partners;
- (b) Products and appropriate technologies better adapted to conditions in Africa;
- (c) Willingness to participate in joint programmes and joint ventures in the production of agricultural machinery and implements within a broad range, from simple to sophisticated technologies;

- (d) Little or no resistance to unpackaging of technology;
- (e) Competitive prices for supplies of components and spare parts;
- (f) Expertise and experts available at lower costs, including training of personnel and provision of instructors.

The Third Consultation on the Agricultural Machinery Industry (Belgrade, Yugoslavia, 29 September - 3 October 1986) can be an opportunity to assess the potential advantages of co-operation between developing countries in the agriculture machinery sector in Africa.

3.4.1. Transfer of know-how and technology

In examining the potential for South-South co-operation, it is necessary to consider the two different agricultural sectors in Africa: the traditional and the modern one. Similar to the basic division of African agriculture into the traditional and modern sectors, the types of agricultural implements and machines, as well as the technology of producing them, can be divided into the following:

- (a) Hand tools, animal-drawn implements, hand-driven (operated) machines and pumps; and
- (b) Tractors, tractor-driven implements, harvesters and other motorized machinery, motor-driven pumping equipment etc.

The production technology for the first group is either simple or intermediate, the manufacturing takes place in small or medium-size multi-purpose units and factories. The emphasis of training for this group of implements is placed on introducing more modern farming methods, soil conservation, irrigation, the use of fertilizers, selective use of seeds, conservation of crops and the first stages of processing crops.

The second group of machinery is mostly confined to the modern sector. The operation of tractors requires considerable training of young or younger farmers who already have a certain amount of general technical education. Manufacturing the machines in this group is a rather sophisticated process that requires quite high technology and medium- to large-size factories specialized for one or a group of products.

In addition to these two groups, there is also a third group of equipment, of intermediate character, to supplement the needs of the traditional sector. This consists of simple tractors, diesel engines for driving pumps, and some machinery such as threshers, aeolian pumps and other similar machines. Manufacturing this type of machinery requires partly intermediate technology but it also involves demand for components.

In respect of all the above-mentioned technologies, technical co-operation will play a very important role in the adaptation of techniques, knowledge and experience to specific situations and to the needs of a given country or region. It is clearly a task for the developing countries themselves, and in particular on a regional or interregional level.

In the implementation of these programmes, non-African developing countries are able to offer co-operation in supplying buffer stocks of components for machines and equipment for which the effective demand of the moment might exceed the supplying capacities of African manufacturers to supply them. Assembly would probably not present a bottleneck. However, this type of co-operation demands more individual work at all levels and commitment of engineers, planners, marketing and other services. Technology transfer seems to be a minor problem, but there is a wide range for improvement and redesigning of products, changes in materials and production technology.

Agricultural machinery and equipment for the traditional sector

The production of agricultural machinery and equipment for the traditional sector will take place in an integrated system of ancillary production points; certain parts will be made by village smiths, who are already producing practically all the hand tools used by farmers, such as hoes, picks, machetes etc. Other parts will be manufactured in central foundries and forges, machined in workshops in smaller towns. Assembly will take place either there, or in larger workshops and factories. Certain components, such as ball bearings etc., will be imported.

Through the decentralized system of production, the population will be drawn into a process of technical education. Small repair and maintenance workshops will become practical schools where young farmers will become acquainted with the functioning, handling and maintenance of machines and equipment.

The timing of the growth of this production system will not be simple in terms of financing. In principle, agricultural production is of foremost priority. The availability of industrial inputs should not be the limiting factor; as soon as the farmer is ready to introduce new methods, he should be provided with implements, seeds, fertilizers etc. As soon as water is available and pumps are required, they should be ready at hand. This principle is not only psychologically important, but also economically founded, as any delay in increasing the domestically-grown food supply increases the financial burden on the country.

Through the interviews and additional questionnaires in the survey, it was found that about two thirds of the respondents in Africa think that their countries will be interested in co-operation for the production of agricultural machinery and implements with non-African countries. They are equally interested in co-operation with developed and developing countries, with slightly more interest in more advanced developing countries.

Agricultural machinery and equipment for the modern sector

The modern sector accounts for the bulk of existing agricultural mechanization in Africa and invariably receives the major share of imports of agricultural machinery, fertilizers, pesticides and other inputs.

Africa depends heavily on imports of agricultural machinery and equipment. Foreign manufacturers supply mainly tractors, combine harvesters, land-clearing equipment and other motorized equipment. They also provide components and raw materials for local production of agricultural machinery for the modern farm sector. The main suppliers of agricultural equipment and machinery are transnational corporations and large manufacturers from developed countries. If local production of some items is undertaken, it is usually in response to pressure from the national Governments.

Some of the more advanced developing countries, such as Argentina, Brazil, India, Mexico, Republic of Korea and Yugoslavia, have already developed a substantial production of agricultural machinery and tractors. Many of these units are based on licensing from a transnational corporation or as a local subsidiary of a large international manufacturer from the Federal Republic of Germany, Japan or North America. However, interregional co-operation among developing countries, and in particular with African countries, is very modest. The reasons are twofold: first, the manufacturers of tractors and agricultural machinery in developing countries are primarily oriented to neighbouring subregional and regional markets; secondly, their financial means for potential investments in overseas countries are limited.

An essential problem of farm mechanization in Africa is the maintenance of the machinery. The high proportion of machinery out of use, long waiting times for repairs, lack of spare parts and wide variety of types of tractors in use make the maintenance and service situation very difficult. One of the ways to overcome these problems is training. Certain non-African developing countries, in the first place India, could play an important role by supplying instructors at various levels for training tractor drivers and maintenance and repair personnel for repair shops in villages and larger towns. Technical assistance can gradually develop domestic capabilities for reconditioning machinery; in time some forms of industrial co-operation can develop, including supplying machines and tools for fitting and repair as well as spare parts.

The potential of this market approach is emphasized by the fact that one of the leading international tractor manufacturers, which accounts for about 40 per cent of the tractors in Africa, has decided to build large repair shops in different African countries in order to recondition thousands of idle and non-usable tractors. The cost of reconditioning the tractors will be a fraction of the cost of new tractors.

The capabilities of developing countries in the agricultural machinery industry (in the broad sense, i.e. including food processing equipment etc.) as well as in designing and providing capital equipment for such machinery, are substantial. They also have appreciable human resources, and the

willingness to co-operate exists, although it differs by country and the size of the company. The technologies available vary from sophisticated ones, such as those acquired from industrial countries, to technologies adapted to local conditions and intermediate technologies.

3.4.2. Standardization of types of equipment in subregional co-operation programmes

The diversity of makes and models existing in the market presents a great obstacle to the agricultural machinery manufacturing programmes in developing countries. The majority of African countries have rather small markets that are unable to absorb a sufficiently large number of a specific type of machinery or implement.

The thresholds at which economies of scale are attained are different for different products and components, and for different technologies and types of manufacturing equipment. If each country individually builds up its capacity to manufacture all the agricultural machinery and equipment it needs, the result will be scores of manufacturing units with high production costs and probably unsatisfactory quality. Agricultural machinery manufacturers in Africa have not fared well financially in recent years. They have been under-utilized, and they have not achieved a very satisfactory ratio of manufacturing value added (MVA) in their production.

Standardization of types of equipment to be produced should be carried out together with the co-ordination of manufacturing programmes within subregions in Africa, which would in turn require specific trade arrangements among the countries of each subregion. The arrangements necessary to achieve this can only be reached at the intergovernmental level.

3.5. Instruments and forms of South-South co-operation

3.5.1. Small and medium-scale industries

An important segment of self-reliant and self-sustaining industrial development of developing countries can be realized through the development of small and medium-size enterprises.

The agricultural machinery industry in Africa is certainly one sector where small and medium-size enterprises could play an important role, not only in providing a basis for building up African manufacturing^{20/} but also as a potential basis for South-South co-operation, particularly interregional co-operation. The experience of many developing countries, such as India, Morocco, Pakistan and Venezuela, has shown that there are also "hidden export potentials in small and medium-size industries if they are given initial impulses and assistance in financing, marketing and export promotion".^{21/}

In the agricultural machinery industry, small and medium-size enterprises are predominant in the production of handtools and animal-drawn implements, and sometimes also in producing equipment for tractors. The survey showed that small and medium-scale enterprises (SMEs) are a most welcome form of South-South co-operation in production where partners would like to develop a new production line for a new product or (in many cases even preferably) revitalize an existing one. Such ventures can to a greater extent rely on local capital, manpower and raw materials.

Medium-size, multi-purpose production units seem to be the "most promising" form of South-South co-operation for the production of tools, implements and intermediate machinery, according to the majority of the listed replies to the survey. The main reasons given for this preference are limited markets and financial constraints (80 per cent of the respondents).

3.5.2. Joint ventures and multinationals of developing countries

Joint ventures represent a form of investment that is greatly preferred in almost all African countries. All new investment codes in African countries offer incentives for joint ventures. The reasons are manifold: lack of capital, lack of managerial and technical skills, need for transfer of technology and know-how, limited markets etc.

^{20/} Final Report of the International Conference on SMEs in Developing Countries, RCCDC, Belgrade, 17-19 September 1985.

^{21/} UNIDO, A Programme for the Industrial Development Decade for Africa (ID/287), 1982.

The large majority of the interviewed persons in Africa wish to establish joint ventures for the production of agricultural machinery. They have no preference regarding developed or developing countries as partners and they even think that a tripartite co-operation would be a very good solution. It is expected that partners from the home country will supply know-how, technology and training of personnel (more than two thirds of the respondents). The provision of financing is important and the African partner expects to hold a minority share.

The potential partners from overseas developing countries showed great interest in co-operation with the private sector. However, public enterprises can also be engaged in joint ventures for the production of larger agricultural machinery. Usually their first task is to support development programmes. Some of them own farms and agricultural machinery, and they are engaged in services, distribution of crops, and financing of agricultural development; they are also importers and exporters of agricultural products and machinery.

3.5.3. Multinational companies of developing countries

"By establishing multinational companies, developing countries could pool their limited resources and undertake those economic activities which otherwise could not be undertaken on the rational economic conditions. This holds for all technologically intensive activities, which are usually also capital intensive in terms of needed research and development activities. Through joint action, developing countries can promote and develop more modern, research and development-intensive, activities, those involving economies of scale and those which demand large capital investments."^{22/}

In the agricultural machinery industry in Africa, future integrated markets will provide a solid basis for the establishment of multinational companies at the subregional or regional level. The advantage of such sectoral integration is the reduction of management and marketing expenses, the establishment of service networks, and the sharing of risks and profits.

^{22/} M. Svetlicic, "Strategy and potentials for establishing MEs of developing countries" in: B. Pavlic et al, eds., op.cit.

Multinational companies will certainly also become more attractive partners for larger projects in co-operation with partners from other developing countries or, where suitable, for tripartite North-South-South co-operation. They will also have a wider credit basis, spread over several countries, thus providing better chances for South-South co-operation on an interregional level. Finally, multinational companies of developing countries may be able to support industrial programmes of least developed countries in the sector in a variety of ways, by offering technical assistance, supplying certain items, absorbing part of their products, or simply by integrating their production of agricultural machinery, implements and tools.

The Governments of developing countries have a major role to play in providing incentives and support or, in appropriate cases, by being a direct partner in new ventures. It is expected that such joint ventures will also involve patterns of specialization and will include small and medium-size enterprises in different partner countries in joint industrial programmes.

3.5.4. Preferential treatment

The liberalization of trade within the agricultural machinery sector is the first prerequisite for successful subregional, regional and interregional co-operation in the area of production. This principle has been clearly adopted in the Programme for the Industrial Development Decade for Africa:

"Mechanisms should be established to eliminate tariff and non-tariff barriers among member States"²³

Field interviews have revealed a lack of uniformity of opinion in respect of the exact functioning and scope of trade liberalization, although there is a consensus that the present trade barriers obstruct the development of the sector. For the agricultural machinery industry, it is important to remove tariff and non-tariff barriers among member States only as far as they apply to the products of this sector, that is to final as well as intermediate

^{23/} UNIDO, A Programme for the Industrial Development Decade for Africa (ID/287), op.cit., "Guidelines for the formulation of strategies for major industrial subsectors and areas (1980-1990)", point 26.(b).

products, and to raw materials insofar as their supply is seriously obstructed or the price raised significantly. The removal of tariff and non-tariff barriers within the above scope is a sine qua non for co-operation in the sector and is the first task of the concerned Governments.

With regard to interregional South-South co-operation in the agricultural machinery sector, the interested developing countries should consider putting the components for local joint production in Africa on the list of the generalized system of tariff preferences (GSTP) in order to lower the cost of the production of machinery in Africa.

For entrepreneurs in Latin America and Asia who are interested in co-operation for local production in Africa, it is very important to know what the conditions and incentives for joint investments are for a longer period in advance (the opinion of the majority of non-African respondents).

3.6. The role of the organizations of the United Nations system and other international organizations

The effectiveness of economic co-operation between Africa and overseas developing countries will to a large extent depend on progress within the subregional and regional groupings in Africa and on the formulation of specific action programmes in critical economic sectors. This co-operation will involve the import of capital goods and parts from developing countries and include co-operation in production and technical assistance directed towards improving skills and effective repairs and maintenance; whenever possible, it should involve tripartite arrangements North-South-South.^{24/}

Many of these activities and goals can be achieved only with assistance from, and through co-ordinated action by, the organizations of the United Nations system and other international organizations, including the regional economic commissions and the multinational organizations that have been established under the auspices of the Economic Commission for Africa (ECA) and the Organization for African Unity (OAU).

^{24/} H.M.A. Onitiri, "South-South Economic Co-operation: What role for Africa", Conference on South-South co-operation, Harare, 1985.

There is a general feeling that such assistance should extend to the elaboration of pre-investment studies for joint programmes of African countries, with an aim to developing and strengthening consultancy organizations of developing countries, in order to fully utilize local potentials and resources and to exchange valuable experience between the developing countries in Africa.

The development of the agricultural machinery industry in Africa will be a long process which will require co-operation in research and development, development of human resources, transfer of technology, and standardization of equipment, parts and components, especially in sectors where importing such products requires large foreign currency expenditures.

Sectoral programmes, consultations and seminars, regional training and documentation centres seem, for the majority of the respondents, to be a very appropriate form of United Nations support to technical co-operation between developing countries/economic co-operation between developing countries (TCDC/ECDC).

3.7. Exchange of information

Special attention should be given to the exchange of information. The lack of accurate information about local conditions, the legal system, taxation control, incentives, repatriation of profits, size of the market, potential sub-contractors and agents, etc. is still a big obstacle for many potential investors in overseas developing countries interested in Africa. Therefore, additional efforts should be made in order to improve the exchange of information on local conditions, potential partners, technology and products available, joint projects and proposed programmes.

Developing countries need to be much more active in making use of existing information systems within the UN system, and particularly in UNIDO. At the same time they should introduce the idea of a multisectoral information network (MSIN) into the national or subregional information systems or programmes.

3.8. Obstacles and barriers to South-South co-operation in the agricultural machinery industry

South-South co-operation in the agricultural machinery industry has so far mainly taken place in intra-regional trade in Latin America and Asia. The situation in Africa is different: the share of intra-regional trade in agricultural machinery is very low, less than 0.5 per cent of imports. The import of agricultural machinery from overseas developing countries is ten times greater, but still extremely small, considering the existing potential in overseas developing countries and the value of present imports.

The reasons for this situation in Africa are the following:

(a) The purchase of machinery is oriented towards developed countries; agricultural machinery from developing countries is relatively unknown, and even for machinery which was donated or delivered under concessional terms, there was no follow-up on spare parts, service and even training of operating personnel at the very beginning;

(b) The domestic production of implements and some machinery, which has started to develop in several African countries, was based on technical assistance from industrialized Western countries and Japan. There is no evidence of initiatives on the part of more advanced developing countries to offer technical assistance for the production of agricultural machinery in Sub-Saharan African countries, although such assistance would be desirable;

(c) In addition to the lack of initiatives, there are several obstacles which have contributed to the absence of interregional South-South co-operation in the field of agricultural machinery:

(i) Traditional ties: Former colonial powers have kept a predominant position with their former territories that are now independent countries. The language, educational system, technical standards and knowledge of local conditions are all in their favour;

(ii) Interests of transnational corporations: The major position as suppliers of agricultural machines and equipment to African countries is held by firms in the former colonial powers and by transnational corporations and their subsidiaries;

(iii) Lack of knowledge of local conditions: Although in Latin America and Asia climatic conditions and, partly, types of soil are similar to those in Africa, the agricultural machinery and equipment used there still has to undergo certain adaptations (in shape, size, weight etc.) before it can be used in Africa;

(iv) Lack of exchange of information between developing countries, causing insufficient knowledge in African countries about supply possibilities and potential partners in Latin America and Asia;

(v) Low effective demand: Low prices of agricultural products have not only worsened the poor financial condition of small farmers, but have also affected the large farms. The result is a low and fluctuating demand for agricultural machinery and equipment, which does not attract newcomers to the market;

(vi) Financing is a strong reason in favour of firms from developed countries, as important projects or purchases of agricultural equipment in Africa cannot be implemented without loans or financial aid.

Field interviews have shown that the present conditions in Africa are not favourable for a large-scale development of the agricultural machinery industry in any individual Sub-Saharan African country; they allow only the existence and also development of medium-size units for the production of animal-drawn implements and hand-operated machines, manufactured by intermediate technology and in small series. As regards the development of large-scale production, which would include tractors, harvesters, diesel engines, engine-driven pumps and other more demanding products, the small markets in individual countries will remain a limiting factor for a considerable time.

Seen from this perspective, the present obstacles to the development of both intra-regional and interregional South-South co-operation in the production of agricultural machinery can be summarized as follows:

(a) Lack of integrated markets, at least at a subregional level, for the sale of agricultural machinery;

(b) Lack of preferential schemes for the purchase of raw materials and other inputs for the production of agricultural machinery from developing countries;

(c) Lack of consistent policies in respect of providing spare parts, financing stocks, and organizing an adequate system of repair shops. The number of machines in disrepair is substantial, which reduces the available machinery to a fraction of its potential capacity and thus impairs not only agricultural production at present, but the development of modern agriculture in general;

(d) A limiting factor of great importance for development lies in the conservative farming methods prevailing in the traditional sector. It will require a time-consuming process of conversion to modern cultivation methods to expand the potential demand for agricultural machinery and equipment.

The above difficulties hamper at the same time both the development of the domestic agricultural machinery industry in African countries and technical and economic co-operation with developing countries in Latin America and Asia.

4. STRATEGIES FOR SOUTH-SOUTH, PARTICULARLY INTERREGIONAL, CO-OPERATION IN THE AGRICULTURAL MACHINERY INDUSTRY

4.1. Institutional framework

South-South co-operation is a part of international economic relations and, therefore, must be considered in terms of three dimensions:

- (a) Global or international co-operation, including existing and future interregional economic relations;
- (b) Subregional and regional co-operation;
- (c) National, including bilateral economic relations.

Each of these levels should have certain priorities and responsibilities, as well as prospects for development and influence on other levels.

In the Lagos Plan of Action, African countries firmly declared their intention to lay the foundation for industrial integration at the subregional and regional levels and to achieve a minimum of 1.4 per cent of world industrial production by the end of the decade.

Of the eight proclaimed targets, the first three concern the agricultural machinery industry:

- (a) Creation of a solid base for self-sustained industrialization at the national and subregional level;
- (b) Development of human resources to ensure that they are fully mobilized in the industrial development process;
- (c) Production in sufficient quantities of agricultural inputs such as fertilizers, pesticides, agricultural tools and machines.

The programme explicitly calls for industrial co-operation with developing countries. The main task has to be carried out by the African countries themselves. The initiatives must be twofold:

- (a) Internal, in order to implement adopted subregional programmes at the national level and bring them down to entrepreneur level;
- (b) External, in planning, selecting the actors and promoting integration of markets in order to achieve economies of scale for larger, modern agricultural machinery production at the subregional or regional level.

The Non-Aligned Countries have already adopted a special Plan of Action on Africa in 1985. The forthcoming meetings of the Non-Aligned Movement should consider ways and means of strengthening this Plan of Action and ensuring an accelerated pace of its implementation in the spirit of solidarity and co-operation and bearing in mind that the least developed countries require special and preferential treatment, particularly in respect of international technical and development assistance.

In light of this, the Group of 77 should address an invitation to the Governments and national focal points for economic co-operation between developing countries and technical co-operation between developing countries of those developing countries that manufacture and export agricultural tools, tractors and machinery, in order to launch initiatives to explore with their manufacturers and consulting firms, chambers of economy and other institutions, including financial ones, the possibilities for co-operation with African countries in industrial programmes, particularly in the agricultural machinery industry.

A special role in this systematic establishment of mutual contacts and examination of mutual interests and possibilities for industrial co-operation could be played by the institutional bodies of subregional and regional integration groupings that have the experience in similar programmes or in training, research and development.

It is expected that the United Nations agencies, in particular ECA, JNDP and UNIDO will set aside a portion of their resources for the implementation of special programmes of assistance to the African countries and help to ensure that a high priority is assigned to the industrial activities in Africa.^{25/}

No resolution will solve a problem if the decisions are not implemented at all possible levels, starting from the international to the national level, and within the national level from the Governments down to the administrative services. It will depend on the conditions in which economic entities operate whether they will be interested and stimulated to enter into long-term co-operation with other developing countries, or if, after an initial attempt, efforts will be abandoned.

The survey has shown that individual countries must recognize that they should not give priority to their short-term interests above the long-term goals of the subregion. The removal of a tariff barrier for the products of a developing country means a certain initial loss, but in the long run it opens up possibilities for co-operation and joint production within the subregional development programme.

4.2. Strategic priorities for South-South co-operation

The following list represents strategic priorities for South-South co-operation:

(a) First priority must be given to the maintenance and reconditioning of existing machinery. This includes establishing a policy for the procurement of spare parts. The organization of repair shops and service networks should provide a basis for the training of workers and should develop into future production units. The problem of standardization of machinery should be studied at the national level and, wherever possible, be introduced

^{25/} The United Nations General Assembly, in its Declaration on the Critical Economic Situation in Africa, declared that "the international community, in particular the developed countries and the multilateral financial institutions, should endeavour to provide additional financial resources to maintain and to increase a net transfer of resources to African countries". It also urged the World Bank and regional development institutions to explore possible approaches with donors.

into subregional development programmes. The exchange of experience and of experts with other developing countries could be very valuable in this connection.

(b) The exchange of information among developing countries about needs and potentials for joint production of agricultural machinery and implements should be established. The Governments of developing countries should instruct national focal points to collect and disseminate such information, utilizing the existing information systems of United Nations agencies, such as UNIDO, FAO etc.

(c) The removal of trade barriers within subregions is a sine qua non for the development of production in the agricultural machinery sector. Preferences should be provided within the generalised system of tariff preferences (GSTP) as a long-term goal to promote joint production co-operation at the interregional level.

(d) Discussions should be initiated with transnational corporations that have important interests in the agricultural machinery sector in Africa in order to:

- (i) establish local production units in Africa to a great extent;
- (ii) devise adequate maintenance and reconditioning schemes;
- (iii) allow their subsidiaries in other developing countries to establish links with potential partners in Africa and to participate in local joint ventures in Africa;
- (iv) open the doors for participation of third parties from other developing countries in joint ventures in Africa;

(e) Priorities in production programmes and production stages should be chosen so that implements and machinery are available to farmers as soon as they are ready to use them, since agricultural production is being given top priority;

(f) The availability of agricultural machinery and implements should be accompanied by financial assistance to enable farmers to purchase them. Domestic and foreign financial resources should be pooled for this purpose;

(g) The development of human resources, including training of farmers, repair personnel etc., is a precondition for the modernization of agricultural production in Africa. Developing countries could play an important role in providing their expertise and personnel for carrying out this task. This activity could be implemented through bilateral or multilateral technical co-operation between developing countries (TCDC) arrangements;

(h) African countries should introduce adequate policies and incentives for establishing small and medium-size multi-purpose production units as a basis for possible interregional co-operation for the production of agricultural machinery and implements.^{26/}

^{26/} This point was particularly stressed by a majority of interviewed persons outside of Africa.

CONCLUSIONS

In the light of the results of the survey on South-South co-operation in relation to the agricultural machinery industry and the experience of developing countries to date, the following conclusions can be reached:

1. Potential exists for South-South co-operation in the agricultural machinery industry in Africa. However, this potential will not be realized unless economic integration at the subregional and regional level in Africa is accelerated.
2. A successful industrialization programme can only be carried out on the basis of an integrated market, which requires the removal of tariff and non-tariff barriers. Only under these conditions can the agricultural machinery industry in Africa develop as foreseen.
3. Larger markets will also be more attractive for potential partners in developing countries outside Africa. A number of more advanced developing countries have already developed capabilities for producing modern agricultural machinery, implements and equipment. There is a need for more information on local conditions, import-export duties, development priorities and projects.
4. Traditional ties between developing countries and individual developed countries as well as the interests of transnational corporations considerably restrict the possibilities of manufacturers in larger developing countries to enter new markets.
5. The traditional agricultural sector is predominant in Africa, and the production of tools, intermediate equipment and implements will have to develop in harmony with progress in farming methods and increasing purchasing power of small farmers. Small and medium-size enterprises seem to be a good solution for a flexible and gradual development of local production of agricultural machinery and implements in Africa.

6. Regional and/or subregional standardization of equipment, parts and components should be given serious consideration, since it can reduce foreign exchange expenditures and at the same time open possibilities for local production.

7. A comprehensive programme of reconditioning existing tractors and other machinery should be launched, and the repair-shop system should at the same time serve as training facilities for a new generation of technical workers.

8. A system of co-ordinating activities related to the adaptation and redesigning of tools and implements should be sponsored by Governments, with the aim of defining a unified range of types of products to be produced within the subregional grouping. Existing research and development capacities and their resources in individual countries should be pooled together for co-operation in joint development programmes.

9. In the timing of agricultural development programmes, priority should be given to the development of human resources, including the training of farmers; to the co-ordination of the stockbreeding and farming occupations, which in certain parts of the region are separated, thus hampering the introduction of animal traction; to the introduction of better farming methods; to drilling wells; and to related activities.

10. Joint ventures are considered to be a very good form of South-South co-operation in the agricultural machinery industry. African entrepreneurs are equally interested in joint ventures with developing and developed countries; they expect transfer of technology and know-how, training of personnel and a minority share (greater than 30 per cent). Joint development programmes can promote the establishment of multinational joint ventures of developing countries within subregional groupings. Such African multinational corporations could be an attractive partner for the manufacturers from overseas developing countries, due to the economies of scale and better financial position that can be achieved by the multinational corporations.

11. Tripartite North-South-South co-operation should be considered as one desirable form of international co-operation that can result in using an optimal combination of local human resources, equipment and machinery purchased from developing countries and some high-technology items from leading developed countries.

12. United Nations agencies should help to promote co-operation between developing countries, including interregional co-operation, by providing technical co-operation, promoting the exchange of information and experience, holding consultations and seminars, and formulating guidelines, as well as through jointly financed and co-ordinated projects etc.

13. African countries should mobilize the international community by taking the initiative and implementing concrete programmes for the development of agriculture and the production of agricultural inputs, particularly fertilizers, pesticides and agricultural machinery and implements.

14. Special attention must be given to the programmes for the least developed countries. It is expected that more advanced developing countries will demonstrate solidarity and develop special programmes in support of the Lagos Plan of Action and the Industrial Development Decade for Africa (IDDA) in close co-operation with the United Nations regional economic commissions and other intergovernmental and non-governmental organizations.

15. The Group of 77 should call upon Governments and the national focal points for technical/economic co-operation between developing countries (TCDC/ECDC) to exchange information regarding areas of mutual interest and possibilities for industrial co-operation and to initiate systematic contacts among interested partners, consultants and manufacturers in other developing countries with potential partners in African countries.

BIBLIOGRAPHY

Afro-Asian Industrial Co-operation Meeting, within the framework of IDDA, New Dehli, 17-21 November 1985, "Report of experts", Vienna, February 1986.

Jean Bouyer, "Situation et comportement des acteurs des pays industriels face à la coopération industrielle avec les pays en développement" (Rapport provisoire I, II), 1983.

Dr. Boris Cizelj, "South-South co-operation", Contribution to the Panel, Panel B.I.5, World Development: Risks and opportunities, 18th World Conference of the Society for International Development (SID), Rome, July 1-4, 1985.

Dr. Boris Cizelj, "Ekonomsko sodelovanje med deželami v razvoju (Economic co-operation among developing countries)", Summary, Komunist (Ljubljana, Yugoslavia), 1982.

Final report of the International Conference on small and medium-scale enterprises (SMEs) in developing countries, Research Centre for Co-operation with Developing Countries (RCCDC), Belgrade, Yugoslavia, September 17-19, 1985.

International Monetary Fund (IMF), World Economic Outlook (Washington, D.C., April 1986).

International Trade Centre UNCTAD/GATT, "The development of trade in selected agricult. al machinery and implements among developing countries", 1983.

"The Kuala Lumpur Statement, South-South II, Charting the way forward", The Second Summit of Third World Scholars and Statesmen, Kuala Lumpur, Malaysia, 5-8 May 1985.

H.M.A. Onitiri, "South-South economic co-operation: What role for Africa", Conference on South-South co-operation, Harare, 1985.

Breda Pavlic, Paul R. Uranga, Boris Cizelj and Marjan Svetlicic, eds., The Challenges of South-South Co-operation, Westview Press, Boulder Colorado, 1983.

Research Centre for Co-operation with Developing Countries (RCCDC) and Zimbabwe Institute for Development Studies (ZIDS), "Preliminary findings of sectoral study on standardization, quality control and metrology, South-South co-operation", 1986.

Dr. Marjan Svetlicic, "Strategy and potentials for establishing medium-scale enterprises (MEs) of developing countries" in: B. Pavlic et al., eds., op.cit.

Society for International Development (SID), 18th World Conference, Rome, 1985:

- Stephen Bolaoni, "The viability of river basin projects in food production: Lessons from Hadejia Jumaare River Basin projects", Kano State, Nigeria
- Stanley Please, "Special assistance needs for Sub-Saharan Africa".

United Nations, "Sub-Saharan Africa: Towards oblivion or reconstruction?", Journal of Development Planning No. 15, 1985.

United Nations Industrial Development Organization (UNIDO):

- "Africa's external debt in respect of the industrial sector. Review, conclusions and recommendations (IDDA)", 1985
- "Agricultural machinery and rural equipment in Africa" (UNIDO/IS.377), 1983
- "The agricultural machinery industry: An appraisal of the current global situation, production and market outlook" (UNIDO/IS.408), 1983
- "The agricultural machinery industry in the 1980s. Factors for international co-operation" (ID/WG.400/1), 1983
- "Conditions of entry into the capital goods sector and integrated manufacture" (ID/WG.442/3), 1985
- "Industrial co-operation through the Southern African development co-ordination conference (SADCC)" (UNIDO/IS.570)
- "Linkage between industry, agriculture and food production (IDDA)", (UNIDO/OED.140), 1985
- "Policies and measures to promote industrial co-operatives in Africa" (UNIDO/IS.561), 1985
- "The present situation of the agricultural machinery industry in Latin America" (UNIDO/IS.581), 1985
- "The present situation of the agricultural machinery industry in North America and Western Europe" (UNIDO/IS.503), 1984
- A Programme for the Industrial Development Decade for Africa (ID/287), 1982
- Report of the First Regional Consultation on the Agricultural Machinery Industry, Addis Ababa, Ethiopia, 5-9 April 1982 (ID/285)
- "A survey of the Latin American agricultural machinery industry" (UNIDO/IS.407), 1983.

Eduardo White, "The challenges of SSC", in: B. Pavlic et al., eds., op.cit.

World Bank, Washington, D.C.:

- The World Development Report 1982
- Toward Sustained Development. A joint Program of Action for Sub-Saharan Africa, 1984.