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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

**FIRST
CONSULTATION
MEETING
ON THE
AGRICULTURAL
MACHINERY
INDUSTRY**

Stresa, Italy, 15–19 October 1979

REPORT

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FIRST CONSULTATION MEETING ON
THE AGRICULTURAL MACHINERY INDUSTRY

Stresa, Italy, 15 - 19 October 1979

Report

Explanatory notes

The following abbreviations of organizations are used in this report:

ESCAP	Economic and Social Commission for Asia and the Pacific
GATT	General Agreement on Tariffs and Trade
IAIGC	Inter-Arab Investment Guarantee Corporation
IDCAS	Industrial Development Centre for Arab States
IFAD	International Fund for Agricultural Development
ITC	International Trade Centre (UNCTAD/GATT)
UNCTAD	United Nations Conference on Trade and Development
UNIDF	United Nations Industrial Development Fund

PREFACE

The Second General Conference of the United Nations Industrial Development Organization (UNIDO), held at Lima, Peru, in March 1975, recommended that UNIDO should include among its activities a system of continuing consultations between developed and developing countries and among developing countries themselves with the object of raising the developing countries' share in world industrial output through increased international co-operation.^{1/}

At its seventh special session in September 1975, the General Assembly of the United Nations, by resolution 3362 (S-VII), decided that the System of Consultations should be established at global, regional, interregional and sectoral levels.^{2/} UNIDO, at the request of the countries concerned, should provide a forum for the negotiation of agreements in the field of industry between developed and developing countries and among developing countries themselves.

The Industrial Development Board at its tenth and eleventh sessions in 1976 and 1977 decided that consultations should be convened among member countries, the participants from interested countries to include officials of Governments, as well as representatives of industry, labour, consumer groups etc.^{3/}, ^{4/}

The Lima Declaration stressed the development of efficient agro-related industries to achieve a high degree of integration between the expansion of agriculture and industry in the developing countries. Accordingly, at its twelfth session in May 1978, the Industrial Development Board authorized UNIDO to proceed with preparations to convene the First Consultation Meeting on the Agricultural Machinery Industry.^{5/}

The agricultural machinery sector is the sixth industrial sector to be covered by Consultations, the others being iron and steel, fertilizers, leather and leather products, vegetable oils and fats, and petrochemicals.

^{1/} "Report of the Second General Conference of the United Nations Industrial Development Organization" (ID/CONF.3/31), chapter IV, "The Lima Declaration and Plan of Action on Industrial Development and Co-operation", para. 66.

^{2/} Official Records of the General Assembly, Seventh Special Session, supplement No. 1, para. 3.

^{3/} Ibid., Thirty-first Session, Supplement No. 16, para. 60.

^{4/} Ibid., Thirty-second Session, Supplement No. 16, para. 162.

^{5/} Ibid., Thirty-third Session, Supplement No. 16, para. 163a.

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INTRODUCTION

1. The First Consultation Meeting on the Agricultural Machinery Industry was held at Stresa, Italy, from 15 to 19 October 1979. The Consultation was attended by 172 participants from 56 countries and 13 international organizations (annex I).

AGREED CONCLUSIONS AND RECOMMENDATIONS

2. The Consultation came to the following conclusions and recommendations:

Action at the national level

(a) Promote basic facilities, services and availability of appropriate raw materials in rural industrial sectors;

(b) Find ways and means of orienting vertical integration to be the nucleus of horizontal integration and promotion of ancillary industries;

(c) Find ways and means of promoting horizontal integration through well-defined national basic facilities and services;

(d) Establish appropriate incentives for rural workshop units and for artisans and craftsmen;

(e) Promote manufacturing of intermediate agricultural implements and equipment with the objective of increasing their capabilities to act as ancillary component suppliers to medium-scale and large industries and to develop co-operative manufacturing and marketing activities;

Action by UNIDO

Meetings

(f) In response to the offer of China, organise a meeting in China on economic co-operation between developing countries in the development of the agricultural machinery industry;

(g) Interlink small- and medium-scale industry in industrialised and selected developing countries with small- and medium-scale industries of developing countries for promotion of production, basic facilities and services in the latter countries, and investment promotion. In that connection, the offer of the delegation from France to host a meeting in Paris in co-operation with UNIDO to promote contacts and co-operation between small- and medium-scale enterprises in France with their counterparts in the developing countries should be accepted with appreciation and used for the creation of such co-operative mechanisms;

(h) Convene investment promotion meetings on the agricultural machinery sector, the first to be held in Africa;

(i) Organise a regional consultation meeting on agricultural machinery in Africa in 1980;

Application and adaptation of suitable designs

(j) In co-operation with the regional commissions and the United Nations agencies concerned assist in the establishment in developing countries of national research centres and regional networks on agricultural machinery and implements along the lines of the Regional Network for Agricultural Machinery established in the Philippines;

(k) Discuss with the Consultative Group on International Agricultural Research the possibilities of its various institutes' orienting their research programmes into appropriate research on relevant agricultural machinery to promote local production where appropriate;

(l) Assist developing countries in their efforts in design and development of specific agricultural tools and equipment by actively promoting contacts with appropriate institutions and enterprises;

Regional analysis

(m) Undertake, with the assistance of UNDP, a survey in selected developing countries on a regional basis, starting with Africa, in order to investigate the practical implications of the planned production of local low-cost and intermediate agricultural machinery, its problems and requirements (for example, financing, research, repair, servicing, training etc.), and to identify the types of products required. The survey, which should preferably be undertaken by consultants from developing countries, would help to determine the planning and location of manufacturing units based on actual needs and demand. The objective of the survey would be to assess manufacturing possibilities on a regional basis similar to that envisaged for the ESCAP region;

(n) Conduct a study of successes and failures of the developing countries in the effective commercialization of locally developed low-cost small tractors, power tillers, engines, pumps and similar technology, taking account of the experience of the Regional Network for Agricultural Machinery in the ESCAP region;

(o) Prepare an analysis of the experience of some developing countries (for example, Algeria, Argentina, India and Yugoslavia) in manufacturing tractors and other agricultural machinery. The analysis should cover such aspects as deletion allowances and increases in local costs in relation to increasing local contents, whereafter the secretariat should develop model manufacturing programmes to serve as a guide to developing countries (covering governmental initiatives and incentives, horizontal integration, manufacture of components etc.);

Training

(p) The UNIDO secretariat should establish a working group on the training of personnel from developing countries in the manufacture, repair, maintenance and use of agricultural machinery, in which representatives of FAO, IPAD, ILO, UNESCO, the World Bank, and other interested international organizations might be invited to participate, as well as representatives of those who would provide the training and those who would receive it;

Least developed, land-locked and island developing countries

(q) Prepare guidelines and organize subregional programmes for least developed, land-locked and island developing countries;

(r) FAO and UNIDO should jointly provide guidelines on the promotion and economic utilization of existing high-powered tractors on small scattered farms for the least developed, land-locked and island developing countries, and organize subregional programmes for those countries;

Information dissemination

(s) Prepare technological guidelines and profiles on manufacturing appropriate equipment such as selected irrigation pumps, low-powered tractors and forged hand tools;

(t) Assist in providing sources of information on specifications and the availability of the right type of raw materials and equipment for the agricultural machinery industry manufactured in other countries;

(u) Prepare appropriate documentation on selected technological trends on the generation and use of non-conventional energy relevant to agricultural equipment and machinery;

(v) The UNIDO secretariat should continue to update the World-wide Study on the Agricultural Machinery Industry to provide an overall view of the direction in which this industry is moving, due account being taken of both supply and demand;

(w) Document the nature and content of the problems addressed during the consultations held so far, the recommendations adopted at those consultations and the action taken by UNIDO to implement them;

Long-term arrangements

(x) Prepare for the next Consultation model contracts to deal with import policies, licensing for local manufacture and joint ventures, taking into account, wherever appropriate, the model contracts under preparation within the framework of the UNIDO System of Consultations;

(y) Establish guidelines on incorporation of basic facilities and services in manufacturing and contractual agreements and investment promotion;

Horizontal integration

(z) Encourage and promote horizontal integration and co-operation between developing countries;

Action at the international level

(aa) UNDP, IFAD and the contributing Governments to UNIDF should increase their contributions to assist in the implementation of the recommendations of the First Consultation Meeting on the Agricultural Machinery Industry.

I. ORGANIZATION OF THE MEETING

Opening of the meeting

3. The First Consultation Meeting on the Agricultural Machinery Industry was opened by the representative of the Executive Director of UNIDO, M.A. Siddiqui, Chairman of the UNIDO Task Force on Agricultural Machinery, who stressed the key role that the production of agricultural machinery could play in the alleviation of food supply problems. The Consultation was then addressed by the Mayor of Stresa, Albert Galli, the Chairman of the Piedmont Region, Aldo Viglione, and the Under-Secretary of State, Ministry of Industry, Government of Italy, Francesco Rebecchini.

Election of officers

4. G.G. Duosi (Italy), was elected Chairman.

The following Vice-Chairmen were elected:

- M.A. Bedri (Sudan)
- F. Horchler (Hungary)
- R. Lantin (Philippines)
- J. Villanueva Barradas (Mexico)

Adoption of the agenda

5. The following agenda was adopted.

1. Opening
2. Election of officers
3. Organization of the Consultation
4. Consideration of the following three issues:
 - (a) Formulation of a strategy for the agricultural machinery industry in developing countries;
 - (b) Basic facilities required in the developing countries for the production of the most simple to the most sophisticated machinery;
 - (c) Practical issues relating to international arrangements concerning imports, local assembly and manufacture of agricultural machinery.
5. Recommendations to the next Consultation
6. Adoption of the report

Establishment of working groups

6. The Consultation decided to establish two working groups in order to discuss the following issues and propose conclusions and recommendations for the consideration of the plenary session:

Basic facilities required in the developing countries for the production of the most simple to the most sophisticated machinery

Practical issues relating to international arrangements concerning imports, local assembly and manufacture of agricultural machinery

Adoption of the report

7. The report was unanimously adopted, including the recommendations of the working groups, in the Plenary session on Friday, 19 October 1979.

Documentation

8. Documents issued prior to the Consultation are listed in annex II.

II. FORMULATION OF A STRATEGY FOR THE AGRICULTURAL MACHINERY INDUSTRY IN DEVELOPING COUNTRIES

Introduction by the secretariat

9. In introducing the subject, the secretariat stated that the formulation of a strategy for the development of the agricultural machinery industry should be based on an assessment of the overall machinery requirements for agriculture and of what should be produced locally. The strategy depended on the agricultural mechanization policy of each country, which had links with the international situation in the agricultural mechanization field. It was currently characterized by the imbalance in consumption, production and international trade between industrialized and developing countries that used only 12 per cent of modern agricultural machinery, produced less than 6 per cent of world output and exported only 1 per cent of international trade. In the developed countries, mechanization had become increasingly heavy and sophisticated. In the developing countries there was a gradual trend towards heavy mechanization, not infrequently inappropriate to local conditions. Another factor in the majority of those countries was a decline in the agricultural land available per caput, which necessitated the intensification of agriculture and optimization of land use and of returns to labour. It had been noted that the basic industrial infrastructure was generally weak and the effective demand often externally induced.

10. Recognizing the fact that the strategy would necessarily differ from country to country, the secretariat stated that there were some common features and it was important to identify them. First, the demand for agricultural machinery had to be assessed as the basic guide for industrial production giving special attention to the real needs and capabilities of the users. Secondly, a decision had to be taken with regard to the extent and types of local production to meet the aforesaid demand and to determine the technological and economic dimensions of local production. Thirdly, appropriate decisions had to be taken on the distribution of activities on the basis of advantages and disadvantages of specialized versus multipurpose production units. Also consideration should be given to vertical or horizontal integration of production. Fourthly, institutional mechanisms would have to be established at the national level, with the power to make policy decisions in order to integrate agricultural and industrial strategies. It would be extremely useful

to set up centres for experimentation and testing in the field of agricultural machinery and equipment. Lastly, operational information in technological, economic and commercial spheres should be available for decision-makers. UNIDO could provide, inter alia, that service for the development of agricultural machinery.

11. It was also stated that it would be useful to forecast developments in the agricultural machinery sector as they were related to the solution of other problems affecting the sector. In that connection, the secretariat drew attention to the FAO studies on agriculture up to the year 2000 for their usefulness in estimating agricultural mechanization needs.

Summary of discussion

The strategy should be formulated at the national level

12. The starting point for the strategy should be the collection of data on types of crops, size of plots, the current status of mechanization, topographical and climatic characteristics, the land tenure system, the socio-psychological characteristics of the local population, their current levels of income, the extent and potentialities of local craftsmen, the industrial infrastructure etc. The next step would be to formulate the strategy within the framework of national policies and objectives on economic and social development with the assistance of the data mentioned above. In that connection, the Consultation stressed some important factors such as the recognition of the importance of the evolution of agricultural mechanization, bearing in mind the need to pay due regard to agronomic and socio-economic considerations, with special attention being paid to industrial labour, women and the poorest sector in the agricultural community; the appreciation of the dangers of excessive and untimely diffusion of heavy mechanization; careful examination of alternative technologies and the selection of the most appropriate ones; use of incentives for the establishment of co-operatives among farmers; organization of exchanges of experience, particularly with countries and enterprises that were conducting research on new types of equipment with the objective, inter alia, of stimulating design and manufacture of machinery and equipment suited to the varying conditions of developing countries.

13. The Consultation suggested the establishment of agricultural machinery committees or their equivalent at national and, if necessary, local levels, for the formulation of strategies and policies for the production and use of agricultural machinery and equipment. Such committees could play an important role in the implementation of the strategy and might, in appropriate cases, recommend the establishment of agricultural machinery research and development centres for closer co-operation with farmers, on the one hand, and engineering and designing centres, local or foreign, on the other. The participants suggested that UNIDO and FAO should formulate jointly and disseminate appropriate guidelines for the formulation and implementation of the strategy for farm mechanization and the development of the agricultural machinery industry, taking into account the recommendations of the Consultation.

Training

14. There was a consensus in the Consultation that the training of personnel was a key element in any national plan for action. It should include training of local craftsmen, farmers, agricultural technicians as well as training of manufacturers for industry, including production personnel, supervisors and managers of enterprises. The participants felt that a comparative analysis of existing human resources and those required for the manufacture of agricultural equipment of various types should make it possible to determine precisely the nature of the training programmes required. The participants approved the recommendation of the secretariat to establish a working group on the training of personnel from developing countries, which working group, taking account of action being undertaken in the special fields of responsibility of the various United Nations agencies, should cover the manufacture, repair, maintenance and use of agricultural machinery. The participants agreed that, in view of the working group's broad terms of reference, representatives of FAO, IFAD, ILO, UNESCO, the World Bank and other interested international organizations might be invited to participate in the working group as well as representatives of those who would provide the training and those who would receive it. The participants felt that the working group should consider requirements in the field, the optimum use of existing training facilities, the establishment, if necessary, of new training facilities, and the formulation of long-term training programmes.

Co-operation between developing countries

15. The participants emphasized the necessity of co-operation between developing countries in order to avoid duplication of production capacities and to optimize advantages of experience and co-operation. It was stressed that co-operation between developing countries, by way of exchange of information on appropriate technologies and experience gained in industrial projects, would be very useful. It might also lead to exploration of possibilities for the division of labour within regions or subregions and might bring about arrangements for joint research in appropriate areas. It was felt that the identification of obstacles to the expansion of trade in agricultural machinery between developing countries would be to the benefit of all concerned. In that connection, the Consultation took note with appreciation of the offer of the delegation of China to host a meeting on co-operation between developing countries in the establishment and development of the agricultural machinery industry.

Co-operation between developing and developed countries

16. The participants agreed that exchanges between the developing and developed countries in the area of planning for the agricultural machinery industry were very important. The participants stressed, inter alia, the importance of co-operation between medium-sized enterprises in developing and developed countries oriented to the manufacture and development of machinery for intermediate mechanization.

17. The Consultation felt that frequent exchanges between developing countries and manufacturers in developed countries might lead to the desired orientation of the existing product lines in the developed countries to meet the specific requirements of the developing countries in the field. It would improve the information from suppliers of technology on the contents and real cost of transfer of technology. The Consultation recognized the necessity of increased assistance from the Governments and enterprises of the market economy and centrally planned economy countries in the area of training.

Co-operation between international organizations

Regional commissions

18. ECE. The ECE representative mentioned the programme of activities elaborated by the Committee on Agricultural Development and, in particular, the development of agricultural machinery. He supported continued ECE/UNIDO activities in that field.

19. Taking into account the experience on studying problems of agricultural mechanization accumulated by the Working Party, he pointed out the importance of exchanging technical, technological and economic information in that field.

20. ESCAP. The ESCAP representative summarized ESCAP/UNIDO/FAO joint programmes in the field of agricultural machinery, and made particular reference to the establishment and successful operation of the Asian Regional Network for Agricultural Machinery, with headquarters in the Philippines. That ESCAP/UNIDO/FAO joint project might serve as an example to the other regions.

United Nations Development Programme

21. The UNDP representative affirmed its support in training, economic and technical co-operation between developing countries, regional co-operation in manufacture, and research and development. He also emphasized its support for rural development with incorporation of engineering capabilities as back-up services for small- and medium-scale manufacture in agricultural machinery and implements.

United Nations Conference on Trade and Development

22. The UNCTAD representative emphasized the importance of the expansion of trade in agricultural machinery between developing countries, and assured the support of UNCTAD in pursuing that objective.

Specialized agencies and ITC

23. ILO. The ILO representative supported fully the need for integrated training programmes in the agricultural machinery field and highlighted some of the activities of ILO in selected developing countries. He supported joint UNIDO/FAO/ILO action in the promotion of training activities.

24. FAO. The FAO representative highlighted the continued FAO/UNIDO co-operation in the field of agricultural machinery and implements. He explained some of the significant joint activities, and assured continued FAO support in the promotion of the agricultural machinery industry.

25. ITC. The representative of ITC, the focal point for all United Nations technical assistance programmes in trade promotion for developing countries, supported fully the need for co-operation with UNIDO to assist developing countries in the planning, programming and implementation of all market development and export marketing activities related to the agricultural machinery and implements industries, both at national and regional levels.

Other organizations

26. IAIGC. The representative of IAIGC expressed the preparedness of his corporation to make available its extensive experience in the investment field in the Arab countries in close co-operation with UNIDO.

27. IDCAS. The IDCAS representative described the programme of activities elaborated by IDCAS in co-operation with the Arab Fund for Socio-economic Development which included a preliminary study of the agricultural machinery and equipment industry in the Arab countries. The findings of that study would be discussed at a meeting of Arab countries and appropriate action initiated.

III. BASIC FACILITIES REQUIRED IN DEVELOPING COUNTRIES FOR
THE PRODUCTION OF THE MOST SIMPLE TO THE
MOST SOPHISTICATED MACHINERY

28. An open-ended working group was set up to discuss the basic facilities required in developing countries for the production of the most simple to the most sophisticated machinery, under the chairmanship of F. Horchler.

Introduction by the secretariat

29. In introducing the issue, the secretariat stated that the agricultural machinery sector incorporated a wide range of products classifiable into four broad categories: simple, intermediate, traditionally powered and specialized. It involved various levels of manufacturing and technology including small rural units, small-scale units, and medium-sized and large factories.

30. Generally classified under engineering, metallurgical and capital goods industry, the basic facilities of the agricultural machinery sector consisted of production facilities and services which could act as the nucleus for horizontal industrial integration. At the lower level of integration, those facilities were simple such as welding and fabrication shops with ancillary wood-working shops, heat treatments, etc. At higher levels of manufacture, the facilities included malleable, spheroidal and non-ferrous foundries, steel foundry, gear and transmission shops, surface treatment plants, tool rooms, complex heat treatments, with ancillary plants producing rubber, electrical, plastic and other components. Where a number of small factories were established, some of the basic facilities could be set up as common facilities. Attention was drawn to the manufacturing profiles and services for different levels of production (ID/WG.307/6).

31. At the planning stage consideration should be given to such factors as the range of products, production volume, raw material requirements, standardization and quality control, backward and forward linkages, skills requirement, market potential, financial requirements and design development. Another important factor would be to decide to have either a large production unit or a number of small units that would collectively provide the same volume of production yet greater employment opportunities. The additional advantage in the latter alternative would be forging of links between basic facilities and rural industries.

32. The setting up of basic facilities through vertical integration might not be economically viable in the absence of adequate demand. It might therefore become necessary to establish basic facilities through horizontal integration. In effecting such horizontal integration, regional complementarities should be considered.

Summary of discussion

33. After examining the subject in detail, the Consultation agreed on a number of key issues. It was felt that the manufacturing capacity should be related to realistic demand based on long-term agricultural development, and the manufacturing promotion strategy should take into account the existing production capacity, the degree of the utilization of its output, the regional implications and links with technological developments in other developing and industrialized countries. There was a need to consider the special requirements of tropical agriculture in developing countries. The importance of evolution of manufacturing simple agricultural machinery into the manufacturing of power operated machinery was stressed. Since assembly operations alone are not of much benefit to the developing countries, a programme of appropriate local manufacture should be borne in mind from the outset.

34. Training in all aspects of manufacture, use, repair and maintenance, and research design and development was emphasized as a key element.

35. Research and development institutions in developing countries could play an important role in the promotion of the industry. They needed assistance in the fulfilment of their objectives by the provision of linkages with international research and development institutions, national institutions in developed countries and between themselves, and in the flow of technological information and supply of prototypes. In that connection, it was recommended that UNIDO discuss with the Consultative Group on International Agricultural Research with a view to exploring the possibilities of its various institutes further reorienting their research programmes into appropriate research on agricultural machinery and implements suitable for developing countries. It was also felt that those centres should pay particular attention to the strengthening of the small- and medium-scale manufacturing units.

36. Many developing countries had insufficient information on specifications and availability of the right type of raw materials and products manufactured in other countries. UNIDO was requested to assist in providing sources of information.

37. The Consultation felt that in many developing countries the rural artisans and family workshops had potential that could make substantial contribution to the development of rural industries generally and the agricultural machinery industry in the rural areas, particularly if appropriate incentives were provided to them. Those might include supply of upgraded and appropriate production equipment, establishment of appropriate supporting industries in wood-working and hardware, establishment of simple heat treatment facilities and introduction of quality control measures. For fuller exploitation of their potential, it would also be necessary to improve their accessibility to training facilities, provide improved prototypes, appropriate raw materials, concessional credit facilities, research and development facilities and encouragement for formation of co-operative marketing arrangements, with governmental institutional support on standardization.

38. Small-scale industries should be promoted and encouraged to manufacture intermediate agricultural implements and equipment and to act as ancillary component suppliers to medium-scale and large industries. The strengthening of the small industries should include small- and medium-scale foundries, forge shops, common engineering facilities, upgrading of production facilities, provision of appropriate materials at reasonable prices, establishment of suitable training programmes and introduction of co-operative marketing arrangements. Provision of credit on soft terms and institutionalized research and development support in terms of improved designs, drawings and prototypes would also be required.

39. In the promotion of medium-scale and large industries manufacturing powered agricultural machinery, measures were needed to develop ancillary and supporting industries that would establish a solid industrial base and links with small- and medium-sized industries.

40. To promote the establishment of appropriate manufacturing facilities, it was necessary to establish effective links at enterprise levels; such links could take several forms. They could be established with enterprises in developing countries which had already acquired successful experience in manufacture, and with small- and medium-scale manufacturers of industrialized

countries. The programmes of large international manufacturers should also be oriented to the actual needs of the developing countries. In that connection, the Consultation recommended that UNIDO should interact with large international manufacturers of agricultural machinery and implements and jointly explore the possibilities of their reorienting their programmes to the actual needs of the developing countries. The Consultation also noted with appreciation the offer of the delegation from France to host a meeting between developing countries and the French small- and medium-scale enterprises in France to develop co-operative programmes and to establish operational links. It was felt that meetings of that type would help the establishment of the required links between medium-scale operators in developed and developing countries. Appreciating the offer of China to host a meeting in 1930 on economic co-operation between developing countries in the field of the agricultural machinery industry, the Consultation hoped that the deliberations in that meeting would establish similar links between small- and medium-scale operators in the developing countries.

41. The Consultation recommended that UNIDO should organize a regional consultation meeting in Africa, preferably in 1930, to provide the developing countries in Africa an opportunity to discuss the problems of the agricultural machinery industry in depth and to develop a programme of action at various levels.

42. The Consultation stressed the necessity of assisting least-developed, land-locked and island developing countries in the promotion and economic utilization of existing high-powered tractors on small scattered farms. Assistance was also required in defining appropriate mechanization systems and the manufacture of matching agricultural machinery. The Consultation recommended that FAO and UNIDO should jointly provide guidelines in those areas and organize subregional programmes for those countries. Those programmes should help them at national and co-operative regional levels.

43. It was felt that UNIDO should assist the developing countries by providing technological guidelines and profiles on the manufacture of appropriate equipment such as centrifugal pumps, small tractors and forged hand tools.

44. The Consultation recommended that UNIDO should encourage and promote horizontal integration and co-operation between developing countries to enable them to exchange ideas and experiences on all aspects of the agricultural machinery industry.

IV. PRACTICAL ISSUES RELATING TO INTERNATIONAL ARRANGEMENTS CONCERNING
IMPORTS, LOCAL ASSEMBLY AND MANUFACTURE
OF AGRICULTURAL MACHINERY

45. An open-ended working group was set up to discuss the practical issues relating to international arrangements concerning imports, local assembly and manufacture of agricultural machinery, under the chairmanship of M.A. Bedri.

46. The terms of reference had been provisionally set in background documentation (annex II) and were that UNIDO prepare:

(a) Model contracts to deal with import policies, licensing for local manufacture and joint venture;

(b) An analysis of the experience of some developing countries (Algeria, Argentina and India) in manufacturing tractors through licenses. On the basis of this analysis, to develop a model manufacturing programme to serve as a guide to other developing countries covering governmental initiatives, incentives and horizontal integration etc.;

(c) A study on the success stories in the developing countries on effective commercialization of locally developed low-cost small tractors, power tillers, engines, pumps and similar technology.

Introduction by the secretariat

47. In the introductory statement given by the secretariat, it was pointed out that the developing countries accounted for 6 per cent of the world's production of agricultural machinery in 1975 as against the 25 per cent target set for total industrial production by the year 2000 in the Lima Declaration and Plan of Action.

48. Currently, the developing countries met their agricultural machinery needs either wholly from imports or from imports and varying degrees of local manufacture. In both cases, however, rational import policies were often lacking, which not only contributed to a deterioration of the countries' trade balance, but also meant that resources were wasted on inappropriate technologies, brands proliferated and after-sales service was poor. Demand in the developing countries continued to be influenced by supply from the developed countries.

49. In order to ensure that any contract between importers or local manufacturers and their foreign partners was to be fair, equitable and economically viable, it was essential that the negotiating and contracting capabilities of the developing countries be strengthened.

50. Important elements of model contracts for imports were identified as follows:

Product coverage, including specifications
Territory
Exclusivity of contract
Period of agreement
Brand name
Sales volume
Importer's responsibilities
Manufacturer's responsibilities
Parts
Service
Warranty
Advertising and sales promotion
Pricing
Credit
Commission for indent sales^{6/}
Termination of agreement and related compensation
Confidentiality of technical information
Resolution of disputes
Language

Summary of discussion

Elements of model contracts

51. In the ensuing discussion, the contractual elements listed below were emphasized.

Exclusivity of contract

52. Exclusivity or non-exclusivity of representation should be spelled out in the contract.

^{6/} "Indent sales" refer to supplies purchased by an importer from a foreign producer through an intermediary agent. In closed indent the importer names the required supplier while in open indent the agent is free to select the most suitable source.

Period of agreement

53. An initial period of test marketing might be provided for in the agreement.

Parts

54. Provision should be made in the contract for the establishment of a parts policy, including the maintenance of inventory levels, the supply of parts manuals and the question of the return of obsolete parts and excess stock. Other considerations might include the purchase of parts from sources other than the supplier and the provision of training in parts management.

55. It was felt that a minimum initial stock should be established including an appropriate ratio of fast-moving to slow-moving parts. In that connection, supply problems arising from rapid model changes were pointed out as were the complications that arose when a local distributor ceased to operate on account of import controls.

56. It was suggested that provision should be included for discount on parts based on volume and regular purchases. It was noted that, while not suggested for inclusion in the contract, the preparation of lists of common spare parts of various items of equipment would facilitate the procurement of spare parts from different sources.

Service

57. The importance of securing good service conditions through an appropriate service policy was stressed; those should include manufacturers' technical support, minimum service facilities, provision of service manuals, and training of operators and technicians. A recommended list of special service tools might also be provided.

Warranty

58. The following must be clearly established: the period of warranty; the basis on which the warranty becomes effective; and allowances for parts and labour.

Credit

59. The terms for credit and interest should be stipulated.

Resolution of disputes

60. The contract should indicate the arbitrators who could be completely independent bodies.
61. Other elements mentioned by participants were as listed below.

Delivery

62. It was felt that delivery terms should be specified with particular attention being paid to the seasonal nature of demand.

Deletion allowances

63. It was pointed out that in many cases deletion prices of components were lower than their procurement prices, which was a disincentive to local procurement. That problem could be overcome if a master price list with deletion allowances were provided at the outset of negotiations.
64. Reference was also made during the discussion to financial arrangements such as tied aid, which prevented the developing countries from selecting appropriate machinery. It was pointed out that in the case of tractors a distinction needed to be made between tractors per se and auxiliary implements so as to allow for purchases from different sources. The possibility of two or more developing countries jointly negotiating import agreements to effect economies in imports was also mentioned.
65. In the discussion it was stated that, as far as possible, contracts for imports should be concluded on a long-term basis. The supplier should have a trial period during which he could test his products on a sample scale in local conditions to guarantee their suitability. The contract should include provisions for such items as organization of after-sales services; training of maintenance and operational personnel; and setting up management systems for spare parts. Furthermore, contracts for imports should allow not only for subsequent local manufacture of spare parts with the assistance of the supplier, but also for future local manufacture of the entire product.

Local manufacture

66. The secretariat drew attention to several critical elements of agreements for local manufacture involving the transfer of technology:

In the case of joint ventures, equity structures, board of directors, voting rights and related matters

Licensing fees and other payments

Degree of local content and subcontracting

Value of completely knocked down kits and deletion values

Restrictive clauses

Trade marks

Training of personnel

Management assistance

67. It was pointed out that elements highlighted in import contracts were also of relevance to contracts for local manufacture.

68. The participants agreed that model contracts for local manufacture under licensing or joint ventures should be prepared by the secretariat and that additional elements should be considered such as:

Selection of products acceptable to farmers

Selection and adaptation of technology suited to local conditions

Specification of facilities to be set up and services required

Continuous flow of information on product and process improvements

Scheduled supply of components and avoidance of tie-in clauses ^{1/}

Identification of component parts for local manufacture and time-frame for such manufacture

Royalty calculations excluding the value of imported components

Guarantees

Laws governing agreements

69. The participants described their experiences and problems with respect to local manufacture. It was stated that the establishment of assembly without gradual increase in local content was not beneficial to developing

^{1/} "Tie-in" clauses in contracts refer to the linking of loans or technical assistance to the supply of equipment from a particular country or producer.

countries. The costs of local manufacture were sometimes higher than the prices of imported machinery partly as a result of high fees for the transfer of technology. It was suggested that UNIDO carry out a study on licensing practices in the agricultural machinery sector.

70. Transfer of technology, licensing fees, and completely knocked down components had been paid for, in some cases, by supplying accessories and parts to the licensor, and it was felt that arrangements of that type should be encouraged, provided that requirements of price, delivery and quality were met. With respect to restrictive clauses, it was noted that export restrictions militated against the raising of local production to an economic level. However, it was pointed out that this might be detrimental to the licensor, particularly if it was carried out on a subsidized basis, and thus might inhibit companies from entering into co-operative agreements. Greater emphasis should be placed on subregional, regional and interregional co-operation as a means of achieving the requisite economies of scale.

71. Attention was drawn to the importance of government intervention in developing countries through suitable regulations in the solution of economic, organizational, financial and other aspects of agricultural machinery industry development through international co-operation. It was stressed that it was in the national interests to supply agricultural implements and machinery to the farmers at reasonable prices, hence the costs of production should be minimized.

72. The experience of one country with regard to "product-in-hand" contracts^{3/} was described. Under that type of contract, it had proved possible to use local manpower and achieve product performance and quality standards fully equivalent to those of the licensor.

Investment promotion

73. The participants discussed the role of investment promotion meetings in achieving results, in involving small- and medium-sized industries as potential joint venture partners, and in promoting regional co-operation. It was stated that a global approach covering financing for agricultural production, agricultural machinery manufacture, as well as agro-industries was desirable and

^{3/} "Product-in-hand" contracts refer to arrangements for a company in an industrialized country to install capacity for a product in a developing country and retain responsibility for operating the plant with local manpower for a sufficient period until the quality of the output is proved to be fully equivalent to the standards reached in the industrialized country.

feasible through co-operation between UNIDO, FAO and financing institutions. Several African countries expressed interest in holding an investment promotion meeting on the agricultural machinery sector in their region. African participants stressed the need for adequate preparation by UNIDO to obtain maximum possible benefits from the proposed investment promotion meeting. The delegate from Senegal suggested Dakar as a possible venue for a preparatory meeting.

Annex I

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Annex II

LIST OF DOCUMENTS

Information documents

Provisional agenda	ID/WG.307/1
Advance information for participants	ID/WG.307/2
Provisional list of documents	ID/WG.307/3
Provisional list of participants	ID/WG.307/7 and Add.1

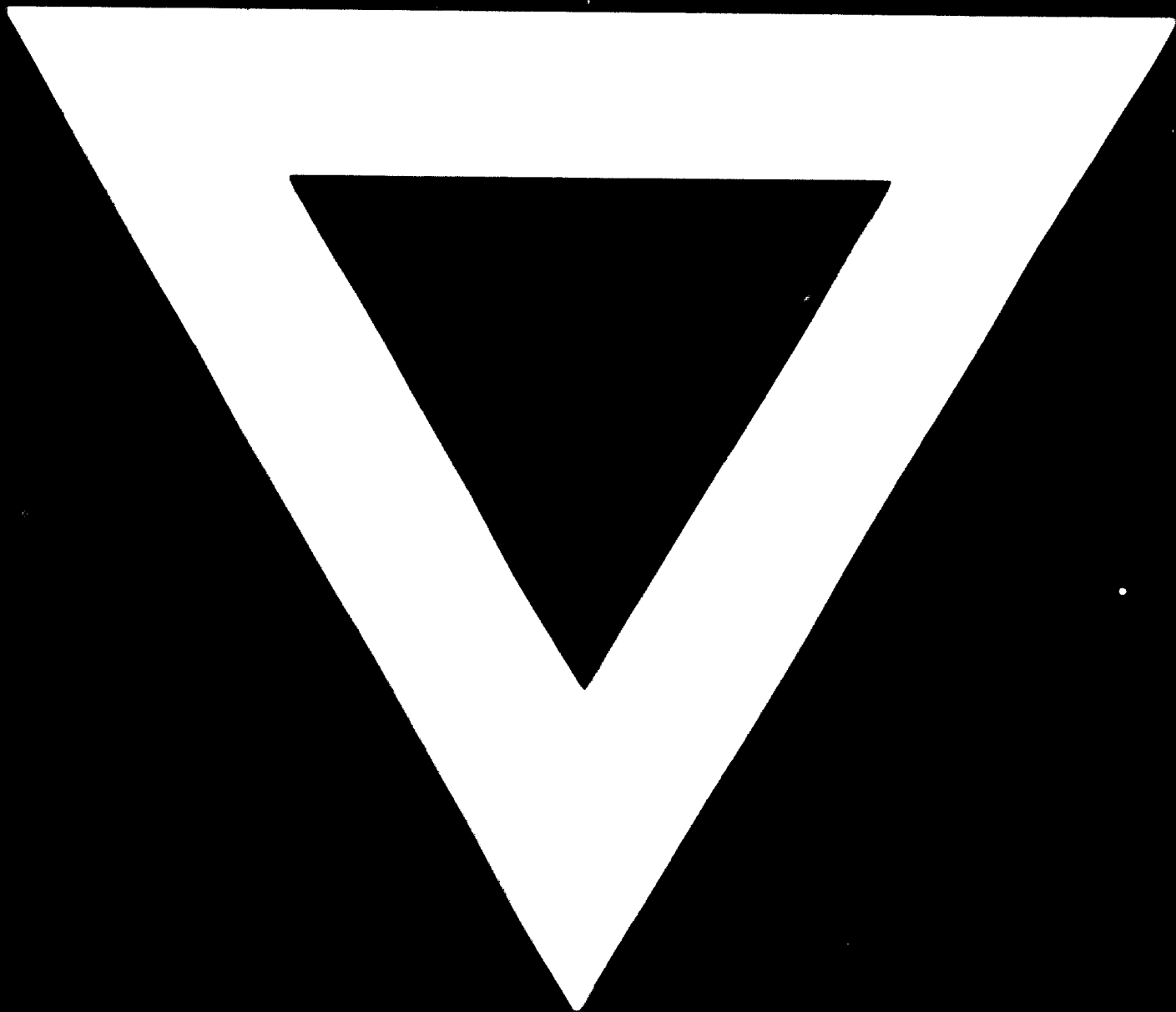
Main discussion document

Issues to be considered by the Consultation Meeting and supporting background material	ID/WG.307/6
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Background documents

Agricultural machinery and implements	ID/WG.307/4
Background information on possible local assembly and manufacture of agricultural machinery	ID/WG.307/5
Report of the Global Preparatory Meeting for Consultations on the Agricultural Machinery Industry, Vienna, 5-8 June 1979	ID/WG.297/2
World-wide study on the agricultural machinery industry	UNIDO/ICIS.119 and Add.1

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