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15500

Distr.
LIMITED
UNIDO/PC.136
10 April 1986
ENGLISH

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

High-level Inter-governmental Meeting
on Co-operation among Developing
Countries in the Field of Agro-industry
Development

Brasília, Brazil, 18 - 23 November 1985

REPORT*

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V.86-55533

Explanatory notes

Besides the common abbreviations, symbols and terms, the following abbreviations have been used in the report:

- ECDC - Economic Co-operation among Developing Countries
- TCDC - Technical Co-operation among Developing Countries
- UNDP - United Nations Development Programme
- FAO - Food and Agriculture Organization of the United Nations

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INTRODUCTION

The Lima Declaration and Plan of Action on Industrial Development and Co-operation adopted by the Second General Conference stressed the importance of economic and technical co-operation among developing countries and the need to develop agro-industries and to foster integration between agriculture and industry in developing countries. The Fourth General Conference of UNIDO adopted Resolution No. 7 to strengthen further the economic co-operation among developing countries and the General Assembly of the United Nations in its resolution 39/216 recognized that the economic co-operation among developing countries was an integral part of efforts to establish the New International Economic Order without being a substitute for or an alternative to co-operation between developed and developing countries. UNIDO has attached and attaches great importance to ECDC/TCDC in order to promote economic and technical co-operation among developing countries in concrete terms.

The present High-level Intergovernmental Meeting on Co-operation among Developing Countries in the field of Agro-Industry Development was organized by UNIDO in co-operation with the Government of the Federal Republic of Brazil and was held in Brasilia from 18 to 22 November 1985. This Meeting focussed on the agro-industry and endeavoured to exchange experience among participating countries and to reach agreements on concrete co-operation projects through matching capabilities and needs of the participating countries.

1. ORGANIZATION OF THE MEETING

The Meeting was attended by participants from the following countries: Argentina, China, Costa Rica, Ecuador, Egypt, El Salvador, Ghana, India, Jamaica, Malaysia, Mozambique, Nicaragua, Paraguay, Peru, Surinam, Trinidad and Tobago, Uruguay and Yugoslavia. An observer from the United Nations Food and Agriculture Organization (FAO) also participated in the Meeting.

A list of participants is given in Annex I.

Opening addresses

The High-level Intergovernmental Meeting on Co-operation among Developing Countries in the field of Agro-Industry Development was officially opened by the Minister for Agriculture of Brazil. On his opening statement, the Minister expressed his appreciation and welcome to the delegates from the developing countries and thanked UNIDO for providing this opportunity to exchange views and experience and to identify areas and projects of economic and technical co-operation among developing countries.

He stated that the agro-industry was undoubtedly a key sector for all economic fields. In Brazil, at the beginning of the 1980's, there were more than 50,000 industrial establishments involved just with the processing of agricultural and cattle raw materials, 650,000 workers directly involved in the sector, and its production represented more than 20% of the total industrial production. He further pointed out that the agro-industry was the center of a series of links among productive sectors. Besides its direct impact on employment, it magnified its importance when one took into account all the jobs that it created inside agriculture, commerce and the capital goods sectors.

He indicated that the agro-industry also played a very important political role. It was the key factor for the integration of agricultural and industrial policies and it helped peasants to strengthen their

co-operatives and thus to strengthen their organization. To implement this strategy, one must rely on three main lines: firstly, the creation of an agro-industry which could contribute to the rural development and recycle to the agricultural medium its by-products and its financing capacity. Secondly, to ensure that the agro-industry was of adequate scale and regionally placed, so that it would reinforce the rural development process. Thirdly, the agro-industry development should not only be based on the national history and experience, but should also take into account the experience of other developing countries.

He expressed the confidence that this meeting would lead to the strengthening of mutual co-operation, which was not only a wishful thinking, but also a necessity of the development process. He saw as the only way that the developing countries could solve the hunger problem, the employment problem, the so called crisis of growing pattern, was through technical, economic and political co-operation among themselves, and he was sure that agro-industry was an indicated sector to begin with.

The Co-ordinator of the operational activities of the United Nations system and Resident Representative of UNDP in Brazil stated that the series of inter-governmental meetings in the area of agro-industry was meant to be a systematic endeavour not only to promote the exchange of experiences but also to stimulate specific and durable South-South Co-operation programmes or Joint Ventures.

He said that the agro-industry had to be looked at as an integrative part of national socio-economic planning, both on a macro and on a micro level. The UN Development System in general, and UNIDO in particular, could help to promote the necessary systematical exchange of experiences among developing countries and to contribute to a better programming through new methods for formulating and evaluating industrial projects.

He stressed the importance of the exchange of experience and joint activities in the development of specific industrial technologies and appropriate management methods in accordance with the needs and conditions in the developing countries. He indicated that the support from the UN Development System will continue to be a supplement but not a substitute for national agreements. In conclusion, he expressed the hope that the meeting would come up with tangible results.

The representative of UNIDO, Chief of the Section for Economic Co-operation among Developing Countries, thanked the Government and the people of Brazil for hosting this meeting and the excellent arrangements made by them. He pointed out that the ultimate objective of this High-level Intergovernmental Meeting was to promote economic and technical co-operation among developing countries (ECDC/TCDC). He underlined and elaborated the main factors which justified ECDC/TCDC.

He stated that after operating for 18 years as a part of the United Nations Secretariat and now becoming a specialized agency, UNIDO had always attached and would continue to attach great importance to ECDC/TCDC. The agro-industry was one of the important industrial sectors for promoting ECDC/TCDC. In this field there was already a certain degree of co-operation, but still a large scope for co-operation to be extended and further strengthened.

He indicated that this meeting had been organized with the aim of matching needs and capabilities of participating countries and leading to co-operation projects. He believed that this meeting would provide a unique opportunity to promote solidarity among developing countries through achieving concrete results.

Election of the bureau

The Meeting elected Mr. Pedro SIMON, Minister for Agriculture, Brazil, as honorary chairman.

The Meeting elected the following officers:

Chairman: Mr. Rui Henrique P.L. de ALBUQUERQUE (Brazil)
Vice-Chairmen: Mr. XU Ji (China)
Mr. Kanwaljit SINGH BAINS (India)
Mr. Abdel EL SAMAHY (Egypt)
Mr. Diego GANDARA (Ecuador)
Mr. Teófilo ALIAGA (Peru)
Rapporteur: Mr. Richard BISWAHITRE KALLOE (Surinam)

Adoption of the agenda

The Meeting adopted the following agenda:

Opening of the Meeting
Election of the Chairman, Vice-Chairmen and Rapporteur
Adoption of the Agenda
Statements by the Delegates
Bilateral and Group Discussions of Co-operation Projects
Adoption of the Report
Closure of the Meeting

Documentation

Documents which were prepared and issued for the Meeting are listed in annex II.

Adoption of the report

The Meeting adopted the report at its last plenary session on 22 November 1985.

II. SUMMARY OF THE PRESENTATIONS MADE AT THE PLENARY SESSION

Presentation of UNIDO paper

The UNIDO representative presented a paper entitled "Economic and Technical Co-operation among developing countries and UNIDO's activities in the field of Agro-Industry Development." He stressed the importance of the development of agro-based industries as a major preoccupation of UNIDO. He emphasized the concept of ECDC/TCDC as an effective means to accelerate the industrial development of developing countries. He presented the UNIDO ECDC/TCDC programme and introduced its objectives and components. He indicated that the UNIDO ECDC/TCDC programme intended to promote subregional, regional and interregional co-operation based on solidarity, equality and mutual benefit, to assist developing countries to formulate and implement policies and a framework of co-operation for increasing utilization of their human, technological and financial resources, and to provide active support for the implementation of industrial co-operation programmes and projects. He expressed the hope that this High-level Intergovernmental Meeting would promote and strengthen ECDC/TCDC activities and would result in concrete projects.

Summary of statements made by delegates

Brazil

The delegate of Brazil stressed the following points on the strategy of agro-industry development: the need for unifying the policies of agriculture and industry; the role of agro-industry to stabilize the farmers income; the importance of agro-industry in generating financial resources for rural development; the necessity of new forms of organization, business administration and training of rural agro-industry. He suggested that agro-industry should be made stronger on the following characteristics: adequate size, regionally distributed, multi-processors, integrated with national enterprises and managed by farmers and their co-operatives.

He suggested nine possible areas for co-operation: policies, planning and instruments for agro-industrial development; bio-energy; production and industrialization of starches; production and industrialization of vegetable fibers; processing of fruits, vegetables and animal products; fats, oils and animal feed processing; chemical, biological and mechanical inputs for agriculture; equipment for agro-industrial processing; and storage and distribution systems.

He indicated that the Agro-industry nuclei of the Ministry of Agriculture would make the necessary contacts at the Brazilian institutional level, and that the Brazilian research institutes and enterprises would give technical support to the bilateral and multilateral agreements.

Egypt

The delegate of Egypt provided detailed data on the Agro-industry development in his country and indicated that his Government had tried to increase the productivity of the cultivated land by using new varieties of rice and mechanizing the cultivation and harvest operation. It gained a notable success last year. The production of fancy pastas (Macaroni) was also increased from 18 thousand tons in 1952 to 202 thousand tons in 1982. It helped to enable the country to export the surplus of the rice crop. The activities of the Egyptian Government in agro-industry had shown great success in the last two years. The production of many crops - tomato, orange, sugar c. and of most of the vegetables was increased by improving the methods of cultivation, harvesting and handling of crops.

He said that the recent policy of the Egyptian Government in the field of agro-industry was to meet two main goals, namely: to increase the production to satisfy the local requirements and to export the extra quantities and to transform the villages from consuming units to producing units again.

India

The delegate of India said that India was very successful in increasing agricultural production. In food grains the output grew from 50 million tons in 1949-50 to more than 151 million tons in 1984-85. Progress in other crops like sugar cane, cotton, oilseeds, fruits and vegetables was also satisfactorily achieved.

Agro-input industries were also established such as manufacture of fertilizers, tractors, implements etc. India had sufficient capacity, in small and organized sectors to process paddy, wheat, cotton, oilseeds, pulses etc.

He indicated that of the nearly 60 million tons of fruits and vegetables only about 1 ton was being processed. However, factors like steady availability of raw materials, high cost of packaging, limited market and exports were among important constraints.

In general, infrastructures for R and D for evolving appropriate technology, training of manpower, provision of consultancy services have been established for agro-based industry.

The necessary incentives by way of tax relief, financing at low rate of interest etc., particularly for setting up processing centres in rural areas in order to encourage rural development and employment. Evolving food suitable laws and standardization of equipment were receiving attention.

He indicated that India would like collaboration in flat bread, wheat and soy-based high protein foods, snacks, processing of tomato, potatoes, packaging, storage of onions etc. Advanced technology in edible oil processing were also important areas for collaboration. Utilization of agriculture wastes and production of bio-energy were among priority fields for collaboration.

Ecuador

The delegate of Ecuador stated that the agro-industrial sector represented a significant percentage of the economy of the country and the policy of the Government was to direct all possible efforts to the development of the sector.

The new policy for the development of agro-industry was aimed at ensuring a harmonious and balanced development and creating jobs, technology and foreign exchange.

The strategy used was based on the exploitation and industrialization of natural resources that present a clear internationally comparative advantage and ensure integration of intersectoral development: access to foreign investment with shared risks; appropriate and selective transfer of technology; efficient use of regional and subregional integration systems, access to new foreign markets; efficient use of invested capital and installed capacity and the application of a viable policy of understanding among workers and entrepreneurs.

He presented various projects for bilateral and group discussion.

Malaysia

The delegate of Malaysia said that the agriculture in Malaysia was dominated by perennial crops and Malaysia remains to be the leading producer of natural rubber (37 per cent) of world export, oil palm (62 per cent), pepper (17 per cent) and cocoa. These raw materials provided the base for the development of agro-industries in the country.

He said that tyres, latex products and footwear were the most important rubber manufactured products. These industries were still considered small with an annual total output value of US\$800 million. With respect to oil palm, the down streaming activities had so far been confined to refining, where 97 per cent of 2.9 million tons of crude oil produced were exported as processed oil. However, palm oil

could be processed into secondary and tertiary products. Cocoa butter, cocoa liquor and cocoa powder were the main cocoa based industries. The milk, fruit and vegetable industries were still small.

The Government was giving considerable emphasis to the development of this sub-sector of the economy. In addition to the tax and other incentives, it was providing strong support services to generate appropriate cost-effective technologies; to avail attractive credit facilities; and to promote and market the products in the international market.

China

The delegate of China informed the Meeting of the agricultural development in China, which centered on those industries that had given an impetus to the fast development of China's agricultural sector and the vigorous development of small business in the rural areas.

He said that over the past few decades the Chinese Government had carried out wide-ranging economic and technical exchanges with other developing countries, of which co-operation in agro-industries constituted a very important component. He mentioned that relevant departments of the Chinese Government had sent different groups of experts to many countries of Asia, Africa and Latin America to help them with growing rice and vegetables and raising poultry. Such co-operation had proved to be mutually beneficial. China accumulated some experience in building small hydroelectric power stations, in the development of biogas, in the construction of small and medium-sized factories of chemical fertilizers and in the spread of rice-transplanting machines and walking tractors in the rural areas, etc. There were possibilities for furthering economic and technical co-operation between China and other developing countries in the above-mentioned fields.

He said that many developing countries, including Latin American countries, gained experience in the development of agriculture, animal husbandry and meat processing. China was also interested in learning about this experience.

He was confident that co-operation among developing countries would be expanded. He stressed the importance of mutual visits among their representatives.

Paraguay

The delegate of Paraguay said that the economy of his country mainly based its development on the agriculture and livestock and forestry activities. These sectors provided nearly 35% of the GNP and employed 43% of the economically active population.

Out of the total GNP 16% came from the industrial sector which employed 14% of the economically active population. Paraguay's agro-industries were composed of foodstuffs, beverages, tobacco, textiles, clothing, leather, shoe manufacture, timber, furniture and some products of the chemical sector. They all together represented 67% of the industrial production.

He offered the following co-operation areas: modern bee keeping, honey production, gelée Royale (honey obtained from queen bees), production of improved queens, fish hatching in tanks and production of "mate" herb. He also sought co-operation areas as follows: textiles and clothing, edible and industrial oils, industrialization of livestock, pork breeding, poultry and fisheries, fruit and vegetable production, timber industry, fuel alcohol industry, bottling industry, capital goods for the agriculture, cattle raising and forestry sectors.

Ghana

The delegate of Ghana outlined the nature of the manufacturing industry in Ghana and pointed out that the agro-industry formed the largest sub-sector of the manufacturing industries.

He categorized the agro-industry into two main groups - the food group and the non-food group - each of which consisted of indigenous and modern enterprises. He highlighted the problems encountered by each group. He indicated that the indigenous industries were small-scale and that within the modern industries large-scale, medium-scale and small-scale enterprises could be found. He briefly mentioned the setting up of the National Board for Small-Scale Industries for the promotion and development of small-scale industries, especially agro-industries.

He then focussed attention on the potential needs of the agro-industries within the ECDC/TCDC concept which included preparation of profiles of small-scale industries, techno-economic feasibility studies for finding suitable alternatives to manufacturing procedures, workshops for small-scale industries, establishment of fruit concentrates and spare parts factories, rehabilitation of abandoned factories, reactivation of idle plants, manpower training and technology transfer.

Finally, he announced the holding of the First Industrial and Technological Fair in Ghana from 1 to 10 March 1986 and solicited participation of countries represented at the Meeting.

Yugoslavia

The delegate of Yugoslavia stated that his country was willing to share its experience in the agro-industry development with other interested developing countries. He informed the Meeting of the achievement of Yugoslavia in food production and indicated that it was ready to establish a long-term co-operation agreement on a joint venture basis with other interested countries. He pointed out that Yugoslavia was also ready to offer co-operation in 17 areas related to agro-industry, some of them were mentioned: designing, building and equipment of agro-industrial complexes; preparation of feasibility studies; establishment of agricultural farms; equipment for production; processing and storage facilities, including those for all kinds of meat, milk, eggs and fish; construction of irrigation and reclamation systems; construction of agro-industrial processing facilities.

He indicated that Yugoslavia was ready to extend equipment and services to those interested countries with financial difficulties on the basis of commodity exchange.

Uruguay

The delegate of Uruguay explained the current discussion on the policies of the agro-industry in his country concerning the revitalization of the sector. He pointed out that the agro-industrial activities were of great importance to the country in its economic consolidation process together with other sectors since they built a basis for an export-oriented economy.

She informed the Meeting that the results of this discussion led to the recognition that all efforts for the modernization of this sector including the technological aspects should be undertaken, in order to achieve a high productivity, taking into account the scarcity of the available raw materials.

She pointed out the fact that the modernization and expansion of agro-industry required a flexible policy taking into consideration the economic financial and human resource difficulties faced by the country, as well as other external factors.

She emphasized the importance of economic and technical co-operation in the promotion of agro-industrial development. In this context she stressed that due to the small size of the economy of her country and the present economic difficulties, economic co-operation is of essential importance. She expressed the hope that the meeting would result in certain co-operation agreements and frameworks.

Surinam

The delegate of Surinam said that his country was conducting a policy that was in line with its available skills, the existing conditions and with the objectives to increase export-earnings, increase the production of goods for the local market, and improve the living and social conditions of the people concerned.

He explained that the scale of operations was not decisive for the success of a policy and should be managed in such a way that there was balance between the different types and sectors of the agro-industry.

He referred to the situation of the world economy and pointed out that heavy emphasis had been placed on development and strengthening the agro-industrial sector especially in the fields of rice, bananas and oil palm, where they were looking for further ways of product development.

The development of new agro-industries was a main priority especially with regard to fishery products, starches and oils and fats.

He mentioned the problems faced by Surinam, which are mainly the high cost of labour together with low productivity and the fact that they had to import the major part of the inputs such as fertilizers, pesticides, agricultural processing and transportation equipment.

Peru

The delegate of Peru emphasized the following characteristics of the Peruvian agro-industry:

A high concentration with regard to ownership and in the location of production which is mainly in Lima and the Coast; a high proportion of imported raw material; a low capacity utilization of the plants; control of the important products in the agro-industry, such as oil and fats, milk, mills etc; by oligopolic groups; only the large industries have a quality control system; insufficient storage facilities; the main export products are: cacao, asparagus, canned fruits, sugar, vegetal colorants, essential oils.

He said that in order to develop the agricultural sector it was necessary to have a clear agro-industry policy, where the production of the raw materials and the agro-industrial production must be closely interlinked.

He pointed out that the Government of Peru considered agriculture as high priority, giving preference to rural development. In this context the interest rates for financing the agriculture were reduced from 110% to 19%.

On the other hand it was a standing goal of government policy to promote changes in consumption habits, going back to native products, which it was possible to produce in the Andean region, thereby reducing the external debt.

Jamaica

The delegate of Jamaica said that the population of his country was of 2.3 million people, but had an unemployment rate of 26%; over 59% of the population were less than 24 years old.

He pointed out that in recent months Jamaica lost 500 million US\$ in foreign exchange revenues due to a down turn in the aluminum market. This loss of revenue created serious problems on the country's ability to pay for raw materials such as fuel oil and other crucial imports such as wheat, corn, soyabean for human food and livestock consumption, raw materials for the manufacturing sector, as well as

on the planned development strategy in social services such as education, roads and water supplies, etc. He regarded the Meeting as a beneficial effort in respect for co-operation among developing countries in promoting and implementing agro-industrial policy.

He mentioned areas, where Jamaica could co-operate with other developing countries such as corn, soyabean for human food and livestock, aloe vera for the pharmaceutical and the cosmetic industries, coconuts to supply the edible oils and fats for food and for the production of soaps and detergents.

He stressed the importance of increasing coffee, citrus production for export thus utilizing the possibility under the Caribbean Basin Initiative and extract more by-products from sugar.

He pointed out two areas of co-operation, for which Jamaica was seeking technical assistance, namely: the technology of growing a variety of the cane plant for producing gasohol as well as the mechanical equipment; the know-how in growing the African palm or oil palm and the mechanical technology in manufacturing the oil.

Trinidad and Tobago

The delegate of Trinidad and Tobago informed the Meeting that the economy was characterized by its heavy dependence on the exports of petroleum products, fertilizers and sugar and the imports of food for both human and animal consumption.

He said that the agricultural sector was divided into a declining unprofitable export sub-sector based on such traditional crops as sugar, cocoa and coffee and a growing domestic sub-sector producing vegetables, root crops, pulses and grain (rice) etc. The agro-industrial sub-sector was developed in isolation from the production sector and is heavily dependent on imported raw materials. Both the primary production and processing sub-sectors suffered from major structural weaknesses.

He said that all efforts to promote agro-industrial development in Trinidad and Tobago would aim at creating a mechanism that would ensure both pre and post-harvest activities were fully integrated and harmonized, preferably in the context of a comprehensive rural development framework, using as many local inputs as possible.

He proposed projects that would make an immediate impact on the agro-industrial sector of Trinidad and Tobago and which could receive assistance within the framework of ECDC/TCDC: establishment of a semi-commercial, multi-process plant for undertaking research and development projects; assistance in the rationalization of research and development, extension and training in the field of agro-industrial development; assistance in the production and processing of tomatoes, cassava, animal foods (from indigenous raw material), and tuna as far as possible; a feasibility study relating to the potential for fuel alcohol.

El Salvador

The delegates of El Salvador informed the Meeting that it based its economy on a group of three agro-industrial activities, which were considered as their traditional export products, i.e. coffee, cotton and sugar. These products nonetheless face serious problems i.e. their internationally low prices and the seasonal character of their production.

It was necessary for the country to expand and diversify its agro-industrial production based on non-seasonal agropecuary activities by way of intensifying the technology of agriculture, livestock, cattle raising and fishery.

He said that with this preoccupation the Government was intensifying its efforts to apply the policy of the integrated agro-industrial development which was aimed at strengthening the institutions dealing particularly with transfer of technology, research and training.

He indicated the areas established for the development of agro-industry such as the production of fruits, vegetables, cereals, oil seeds, milk, meat, fishing, aquaculture and other minor industries, bio-energy.

He stressed the great importance of technical and economic co-operation among developing countries as an indispensable means for achieving a betterment of the social and economic situation of developing countries.

Costa Rica

The delegate of Costa Rica informed the Meeting that agro-industry was an important economic activity, not only because it produces products for consumption, but also because of its high participation in the manufacturing sector. The agro-industry development offered excellent opportunity for creation of jobs, particularly for the rural development. It further contributed to the generation of export earning.

He said that the agro-industrial subsector in Costa Rica basically began with the industrialization of two traditional export products: coffee and bananas. This made the country's economy rather vulnerable in terms of external factors.

The main objectives of the National Development Plan are: to achieve a greater integration of agriculture and industry in order to ensure better use of the natural and human resources. Such development would create employment opportunities and increase individual incomes with a view of improving the standard of living in the rural areas; and decrease the disequilibrium of the balance of payments by favouring exports of non-traditional products.

He pointed out that certain economic and financial measures would be adopted in order to obtain the above objective.

He also informed the Meeting of the difficulties encountered in the fulfilment of goals and objectives. Nevertheless the country possessed a good agro-industrial sector to satisfy the domestic needs and to plan a new agro-industrial project.

Nicaragua

The delegate of Nicaragua described the economic situation before and after the revolution in his country and pointed out that it was necessary to introduce basic concepts of a planned economy. In this respect an agrarian reform was being initiated, which would serve as the axis of the agricultural transformation of the country. It will permit thousands of farmers to incorporate themselves into the agricultural production and thereby to increase the capacity to supply food to the population and to improve the quality of life in the rural areas. The objectives of the agrarian reform were: the setting-up of a new industrial structure which is based on the processing of its natural resources in line with the necessities of an integral development of Nicaragua; the multiplication of its capacity to produce foodstuff; the exploration of natural resources in order to find a rational use for these as well as their planning and development.

He indicated that considerable resources would be necessary from friendly countries and international organizations which would contribute to develop an agro-industry and would respond to the needs of the people and to the global recovery of the economy of his country.

Mozambique

The delegate of Mozambique stated that his country became independent only in 1975, after 10 years of armed struggle. As a result of the war the economy was almost destroyed and left without reserves.

He indicated that from 1975 until 1980 and despite the withdrawal of Portuguese settlers and technicians, the general output of agricultural and industrial production increased.

In addition to the South African aggression, which affected roads and communication, Mozambique has been faced since 1981 with a four year drought situation which severely affected the agricultural production, the main sources of foreign exchange. As a result of this situation the industrial production decreased.

He said the main aim at the moment was to rehabilitate the existing industry, to train skilled workers and technicians and to attract foreign investment.

He mentioned that promoting co-operation among developing countries would face financial problems and in this respect he suggested that the meeting should explore ways and means of tackling them. He proposed the initiation of a survey of training and research institutes.

Argentina

The delegate of Argentina stressed the fundamental importance of integration between agro-industry with a view of strengthening the level of the economies of developing countries, in order to put an end to being only producers and exporters of raw materials.

He said that special attention should be paid to the food processing sector, such as meat processing, dairy, fisheries, oil seeds, cereals and flours, canning of fruits and vegetables and bottling. He indicated that Argentina was able to improve its export on the basis of comparative advantages as well as to satisfy the domestic market need.

He mentioned that Argentina had the technology for the above areas and was ready to co-operate in these areas on the basis of mutual interest.

He informed the Meeting of two studies dealing with cereals and the flour sectors, submitted for the benefit of the participating countries.

Presentation of project proposals by UNIDO

The Head of Agro-Industries Branch of UNIDO presented a project proposal entitled "Integrated Food Processing Technologies Adequate for Latin America". He said that several delegates had indicated the necessity to establish some kind of permanent co-operation programme between Latin American institutions and bodies involved in Research and Development (R + D) activities related to technology and development of the food processing industry. The concept was discussed and highly recommended at the 5th Latin American Seminar on Food Science and Technology held on 12-16 October 1985 in Chile, with full support of representatives from a number of countries, such as Mexico, Guatemala, Costa Rica, Colombia, Brazil, Peru, Argentina, Chile, Uruguay and Ecuador.

The concept of the above-mentioned co-operation programme was formulated by the UNIDO Secretariat and presented in a preliminary form at the meeting. The main objectives of the programme were to facilitate co-operation and mutual assistance among the participating countries in the development of industrialized food products through the establishment of an operational regional network capable of: gathering and disseminating information on technologies, processes, research results; arranging consultancy/advisory services in appropriate research activities; identifying, initiating and co-ordinating inter-country (R + D) programmes; assisting in the preparation of preliminary studies based on applied research results; organizing training programmes, seminars, workshops and study tours and to provide support to regional and country institutions in their activities.

A need to further accelerate food production and processing was recognized in most Latin American countries and there was a full justification for creation of a network as envisaged in the proposed programme.

In presenting the concept of the project, its justification, activities and expected results were provided.

The participants were invited to express their views on the subject programme and if supported, UNIDO would be in a position to follow-up on this subject. It was indicated that as a first step, it might be advisable to make a survey of the existing institutions and organizations, their capacity and facilities, and then to organize a meeting of the selected group of experts to elaborate further details and a full scale project document.

During a separate session on the subject, additional details were explained on the formalities involved in the final formulation of the project and on the process of its approval. Several delegates from Latin-American countries (El Salvador, Paraguay, Peru, Costa Rica, Surinam, Brazil, Uruguay), considered the project idea as an excellent one and that this is an opportune time for initiating action. The basic purpose of the programme may relate to processing technology and related applied R + D activities. Corresponding economic aspects, preparation of studies, market analyses, etc. may also be included. The co-operation between existing institutions and exchange of information should be strengthened including within the countries themselves.

A group of delegates from several Latin-American countries adopted a position paper on this subject, which is attached as annex III.

The UNIDO consultant presented a paper (UNIDO/PC.120.) prepared for the Meeting. He pointed out that Brazil, Colombia, El Salvador, Guyana, Peru and Trinidad and Tobago were analysed as to policies, planning,

programming, strategies being followed and obstacles to development. There were food technology centers in a great majority of the countries as well as laboratories applied to other areas of agro-industry such as textiles, rubber, leather, cellulose, wood etc. In the area of research in food crops and livestock production the work of EMBRAPA (Brazilian Agricultural Research Enterprise), CEPLAC (Executive Commission for the Cocoa Development Plan) (Brazil), INIPA (Peru), ICA (Colombia) was very important. Development of human resources in agro-industry especially food technology was also deemed as satisfactory in the above countries.

He mentioned that Brazil was the country with the best understanding of agro-industrial integration so reflected in its policies and activities in the areas of agronomical and agro-industrial research, extension, credit, promotion, marketing, planning, production, development of human resources and training. This had contributed to its success in the production of sugar, ethyl alcohol, cocoa and cocoa products, coffee and coffee products, soya products, meat and meat products, orange juice, shoes, tobacco, cellulose, etc. Brazil, Peru and Colombia had a great potential to expand arable land. Brazil utilized at present 60,000,000 ha. and can triplicate this area in the near future.

Through an analysis of the present stage of the agro-industries, existing obstacles, its potentials and limitations and discussions with key administrators at the food technology centers, universities and government officials, a number of projects of interest for each country were identified. In addition it was suggested the names of the countries capable to co-operate in each project. International technical co-operation is already being carried out in all six countries. Twelve projects of interest to the whole Latin America and Caribbean were also identified, as follows: integrated food bio-energy production, biogas, alcohol production, cassava and yam, farm implements and equipment for agro-industries, processed fruit and tomato products, post-harvest losses, food packaging, fishery products, composite flours, animal feeds and agro-industrial planning/evaluation of agro-industrial projects.

III. BILATERAL AND MULTILATERAL DISCUSSIONS

Bilateral and multilateral discussions on co-operation projects were held between the host country and the participating countries as well as among the participating countries themselves. In order to identify areas for co-operation four Working Groups were established on the following subjects:

- Working Group I: Bioenergy
- Working Group II: Agro-industry products processing
- Working Group III: Industrial input to agricultural development
- Working Group IV: Agro-industry policies, programming and mechanisms for implementation

The areas that had been identified by these four Working Groups were further discussed and elaborated during the bilateral and multilateral discussions. The minutes of those discussions were agreed upon. The following covers the substantive contents of these minutes.

Bilateral discussions

Discussion between Brazil and China

During the discussion the following areas for co-operation were identified and the respective project concepts agreed upon:

1. Study on agro-industry policies, planning and mechanisms for implementation

One Brazilian mission consisting of 6 government officials from the Ministries concerned will visit China for two weeks to study China's experience on the above subject and to exchange views with the Chinese counterpart.

2. Technical co-operation in the field of bio-energy

The Chinese side is very interested in the bio-energy technology especially the production of ethanol. The Brazilian side is also interested in technology of bio-gas production and utilization of residuals of sugar cane in China. To this end, a technical team consisting of 5 experts from China will visit Brazil for two weeks to study the adaptation of alcohol production technology to existing sugar factories in China and to facilitate the modernization and expansion of the sugar factories to attend ethanol requirements. The team is also requested to bring information on China's bio-gas technology.

3. Technical co-operation in research and development of food processing and packaging industry

Both sides agreed to establish contacts between the institutions concerned and to exchange experiences between them. The institutions involved are: China Association of Packaging and China Association of Food Processing; ITAL (Food Technology Research Institute of the Agriculture Secretariat of Sao Paulo; FEA/UNICAMP (Food Engineering Faculty, of the Campinas State University. The technical team consisting of 6 Brazilian experts will visit China for two weeks to investigate the capacity and needs in these areas and to explore the concrete programme of co-operation. A Chinese expert team will also visit Brazil. Training opportunities are also offered by the Brazilian side in this area.

Concerning the financing, China and Brazil agreed to cover the local costs including board and lodging and local transportation for the visiting teams and will make internal contacts to meet these expenditures. The United Nations Development System including UNDP and UNIDO is requested to support the financing at the international level.

In addition to the above both sides expressed also interest in exchange of information on small hydro-electric plants. Mutual technical visits are also envisaged at a later stage.

Discussion between Brazil and Egypt

The two delegations exchanged views on possibilities of co-operation in the field of agro-industry.

The Egyptian delegation gave information on its country's interest in establishing a factory for the production of canned meat (corned meat) for export in the Middle East countries. This project could be undertaken on a joint venture basis.

The Brazilian delegation gave information on their capabilities in planning, constructing and delivering know-how and equipment necessary for the establishment of the project.

Both sides agreed that the first step for the realization of this project would be the establishment of a technical and economic feasibility study. With regard to the financial implication of the study, it was stated that Egypt would cover the local cost of Brazilian experts such as per diem and local transportation and Brazil counterpart, UNICAMP (Campinas State University), would pay the salaries of the experts. UNIDO and other UN Organizations would be requested to cover the cost of the international travel of the experts.

The Brazilian delegation offered the Egyptian delegation to train four Egyptian experts in thermoplastic extrusion of starches and flours for food use and industrial application. The period of the training would be two weeks (short course).

The Brazilian side would provide all the facilities for training: the international travel and per diem would have to be covered by a third party. Both sides requested UNIDO and other UN Organizations financial assistance.

Discussion between Brazil and Ghana

Both delegations felt this meeting to be a useful contribution to better mutual information and understanding of the ways and means, in which mutual co-operation could be developed. Areas of interest and possible co-operation were identified:

- establishment of Cassava processing plant
- cold storage system and ice production
- plantation of sisal for processing of rope

For all indicated areas techno-economic feasibility studies would have to be undertaken. The Brazil side was ready to conduct these feasibility studies, however the fund necessary for it should be sought from a third party. UNIDO and UN financial assistance would also be requested. The institutions of both sides involved were identified:

- Ghana - Ghana National Board for Small Scale Industry;
- Brazil - ITAL (Food Technology Research Institute of the Agriculture Secretariat of Sao Paulo, FEA-UNICAMP (Food Engineering Faculty, of the Campinas State University, IAC (Campinas Agronomic Research Institute, of the Agriculture Secretariat of Sao Paulo) and IPT (Technological Research Institute of the Industry Commerce, Science and Technology Secretariat of Sao Paulo.

Discussion between Brazil and India

The two delegates exchanged information on the development of agro-industries of their countries.

The Indian delegate expressed interest in co-operation in the area of production and utilization of alcohol and it was agreed to arrange for technical visits. Institutions involved were identified: Brazil - NUAGRO (Special Nuclei for Agro Industrial Development of the Ministry of Agriculture) and EMBRATER (Brazilian Enterprise of Technology Assistance and Rural Extension); India - CFTRI, all Indian sugar mill associations. Feasibility Study would have to be undertaken jointly. Local expenses could also be considered by both countries, and UNIDO and UN financial assistance was requested, to pay convertible currency.

Another area of co-operation was processing of fruits and vegetable and soybean. As a first step in this co-operation it was agreed to arrange an exchange of experts of both countries to study the level of technology and the kind of collaboration between them. Further steps of co-operation in these areas were also considered, such as training of personnel collaboration in research and discussion between both sides concerning joint venture.

Exchange of information in the development of packaging for fresh food and vegetables was also regarded as an important area of co-operation. It was agreed to arrange for a technical visit between the two countries.

The institutions involved were identified FEA/UNICAMP (Food Engineering Faculty, of the Campinas State University), Central Food Technology Research Institute, India.

UNIDO and other UN financial assistance was requested for all above-mentioned areas. Brazil would also contribute.

Discussion between Brazil and Malaysia

Both parties discussed and agreed that co-operation will be in the exchange of information on current technical and technological achievements in agro-industry.

The Malaysian delegate has expressed interest in co-operating and obtaining information in relation to composite flour technology; tropical fruit and vegetable processing technology; and ethanol technology. Brazil has indicated interest in rubber and palm oil production technology.

In this discussion between the two sides it was even jointly estimated that conditions for co-operation exist especially in the above-mentioned areas. As a first step in this co-operation, both sides agreed to explore the possibility of making study tours to learn in greater detail the fields of interest.

Possible institutions in Malaysia that will co-operate are the Malaysian Agricultural Research and Development Institute (MARDI), the Rubber Research Institute of Malaysia (RRIM) and the Palm Oil Research Institute of Malaysia (PORIM). The counterparts in Brazil are EMBRAPA (Brazilian Agricultural Research Enterprise), CEPLAC (Executive Commission for the Cocoa Development Plan), ITAL (Food Technology Research Institute of the Agriculture Secretariat of Sao Paulo and EMBRATER (Brazilian Enterprise of Technology Assistance and Rural Extension).

Both sides may request UNIDO and other UN Organizations for financial assistance to implement the programme.

Discussion between Brazil and Mozambique

Discussion on the promotion and expansion of co-operation in the field of agro-industries centered on the following projects:

Firstly, the setting-up in Mozambique of a starch and flour plant from cultivated cassava with an approximate capacity corresponding to 500 tons of starch per year. Co-operation here would be between the Ministry of Agriculture of Mozambique and the State Secretary for Food and Light Industry of Mozambique and a number of possible Brazilian institutions (FEA/UNICAMP - Food Engineering Faculty, of the Campinas State University; CTAA-EMBRAPA - Technological Centre for Food and Agro-Industrial Research; CNPMP-EMBRAPA - National Centre for Cassava and Fruit Production Research). As a first step towards implementation, the carrying out of a technical and economic feasibility study is envisaged.

Secondly, the delegation of Mozambique expressed its interest in co-operation in the field of agro-industrial training. The following areas of training were identified.

- cereal technology
- fats and oils technology
- fruits and vegetables
- sugar and derivatives
- animal feeds
- alcoholic and soft beverages
- leather and by-products
- tobacco

The precise nature of the training would be defined between the State Secretary for Food and Light Industry of Mozambique and the Brazilian institutions involved (FEA/UNICAMP - Food Engineering Faculty, of the Campinas State University; CTAA-EMBRAPA - Technological Centre for Food and Agro Industrial Research; ITAL - Food Technology Research Institute of the Agriculture Secretariat of Sao Paulo; SENAI - National Service of Industrial Training). Both sides agreed to seek finance from third parties.

Discussion between Brazil and Yugoslavia

1. Both countries expressed willingness to co-operate in exchanging of visits of several researchers to visit research institutes in respective countries with a purpose of exchanging technical information and experience related to the activities of research institutions and their facilities, including laboratory equipment, in the following fields:

- Meat processing industry
- Dairy industry
- Thermal treatment and irradiation of food products
- Drying and storage of cereal grains

Both parties agreed to follow this matter further through Brazilian organizations FEA/UNICAMP - Food Engineering Faculty, of the Campinas State University and ITAL - Food Technology Research Institute of the Agriculture Secretariat of Sao Paulo and Yugoslav Federal Ministry of Agriculture and Yugoslav Embassy in Brasilia.

2. Planning and execution of agro-industrial policies was another subject of discussion between the two parties. The purpose of co-operation will be to enable Brazilians to familiarize themselves with Yugoslav experience in the field of agricultural production and operation of agro-industries.

Both parties agreed that a team of Brazilian experts will visit Yugoslavia to discuss with relevant Government authorities and institutions about Yugoslav experience in the planning, establishment and operation of agro-industrial co-operatives and complexes. On the other side, Yugoslavia would send a team of consultants to Brazil to discuss with

the people in charge of agro-industrial policy the possibilities of co-operation on the mentioned establishment of agro-industrial complexes in Brazil.

Yugoslavia and Brazil will cover local costs in the respective country. Co-operation with UNIDO will be requested to cover international travel costs within the UNIDO/Yugoslav Programme of co-operation in the field of agro-industry.

Discussion between Brazil and Argentina

There have been agreements between these countries in 2 areas:

- (1) industrialization of fish;
- (2) production of composite flour

Within the first area, 2 project ideas have been elaborated, namely (a) to establish guidelines for the sanitary conditions in respect of the exploration of bivalvular molluscs (starfish, shellfish, mussels); (b) to determine standards for the control of critical points in processing lines and to seek conditions for a perfect quality evaluation of the final product.

As for the production of composite flour, the co-operation will focus on the exchange of know-how for producing different flours.

The institutions involved in these activities will be

- Argentina: SIPA, INTI;
- Brazil: SUDEPE (Fishing Development Superintendence), ITAL (Food Technology Research Institute of the Agriculture Secretariat of Sao Paulo, UNICAMP (Campinas State University), USP (Oceangraphic Institute of the University of Sao Paulo), FEA (Food Engineering Faculty).

The activities will comprise:

- the definition of quality parameters;
- the evaluation of applied purification systems;
- the creation of standards for the raw material and the final product.

Discussion between Brazil and Costa Rica

The delegates of Costa Rica and Brazil identified fruits and vegetables (cashew, mango and onion) as co-operation area. A feasibility study would have to be prepared. The expenses for the study should be explored.

The Costa Rican delegate identified production and its industrialization of cassava as another co-operation area. It was agreed to undertake a pre-feasibility study, the funding of which was requested from UNIDO and other UN Organizations.

The financial incentive for the development of agro-industry system was found as a possible area of co-operation. It was agreed to organize a technical visit at government level for both countries to study the experience of Brazil and Costa Rica respectively. Expenses for this visit would be partly met locally and financial assistance from UNIDO and other UN Organizations was requested.

It was also agreed to co-operate in the area related to the industrialization of soya, particularly the erection of extraction factories in soya-growing areas.

Discussion between Brazil and Ecuador

The country representatives agreed on co-operation in two areas:

- 1) refrigeration/cold storage of fruits, vegetables and flowers;
- 2) reproduction, development and fattening of sweet-water shrimps.

As for the refrigeration of fruits, vegetables and flowers, the following institutions will be involved:

- Ecuador: Ministério de Agricultura y Ganaderia del Ecuador;
- Brazil: Research Tropical Foundation;
UNICAMP/FEA (Food Engineering Faculty of the Campinas State University).

The main activities within this area will be:

- the execution of an economic feasibility study for the refrigeration demand;
- a project on a pre-cooling and a cold storage system;
- technical and training assistance.

The cost of these activities has been estimated at US\$ 60,000, of which UNIDO would be requested to contribute US\$ 45,000, and Brazil would provide US\$ 15,000.

The co-operation on sweet-water shrimps will involve:

- Ecuador: Ministerio de Agricultura y Ganaderia del Ecuador;
- Brazil: SUDEPE (Fishing Development Superintendence);
IPA (Pernambuco State Enterprise for Agricultural Research); PESAGRO (Rio de Janeiro State Enterprise for Agricultural Research); UFPE (Oceanographic Department of the Federal University of Pernambuco).

No further details have been agreed in this area.

Discussion between Brazil and El Salvador

Discussion on the promotion and expansion of co-operation in the field of agro-industries centered on the following projects:

1. Production and industrialization of cassava. It was planned to evaluate in form of an expert mission from a Brazil proposed cassava plant in El Salvador under industrial, agronomical and commercial criteria.
2. Study on alternatives to replace wheat flours. It is proposed that the Brazilian research institute FEA-UNICAMP (Food Engineering Faculty, of the Campinas State University) would evaluate the production of different types of flour to replace wheat flour and/or composite flours mainly by corn flour and rice flour.
3. Fluid - Milk Processing. It was envisaged to realize a survey of the fluid milk production of El Salvador in order to obtain information for the setting-up of a network of small milk-processing units.
4. Vegetable and fruit production and processing. Brazil would provide expertise for the start-up and establishment of a processing plant for tomatoes and other vegetables to produce various processed foods.
5. Biogas production from agricultural and industrial by-products. In order to investigate the possibilities of utilizing agricultural wastes from cotton and sugar cane production, as well as agro-industrial by-products such as coffee pulp, to produce biogas a Brazilian expert (possible institutions: FEA-UNICAMP (Food Engineering Faculty, of the Campinas State University), ITAL (Food Technology Research Institute of the Agriculture Secretariat of Sao Paulo), EMBRAPA (Brazilian Agricultural Research Enterprise) would visit El Salvador for one man month. He would be required in addition to indicate the possible technological alternatives and equipment currently existing for biogas production. The estimated local costs amount to the equivalent of US\$3,000, with hard currency costs of US\$7,000. Financing would be requested from the co-operative Algodonera of El Salvador and UNIDO/UNDP.

6. Production of energetic inputs from agricultural and industrial by-products. The delegate of El Salvador was interested in a 2 man month mission of an expert from a Brazilian research institution (eg. UNICAMP-FEA (Food Engineering Faculty, of the Campinas State University) or ITAL (Food Technology Research Institute of the Agriculture Secretariat of Sao Paulo)) to aid the programme of agro-industrial development of El Salvador in carrying out tests with different agricultural and agro-industrial by-products to be utilized as fuels for domestic and small work-shops' use. Local currency costs were estimated at US\$4,000, hard currency costs at US\$11,000, financial assistance would be requested from the programme of agro-industrial development of El Salvador and UNIDO.

7. Production of fuel ethanol from sugar-cane in micro-industrial plants. A mission of 2 experts for one man month each would be required to carry out a feasibility study to establish one or more fuel-ethanol micro-industrial plants, as well as to formulate suggestions on how to reduce the sugar cane transportation costs from the rural areas to the industrial units. Total costs were estimated at US\$35,000 of which US\$5,000 would be in local currency. The INAZUCAR Institute of El Salvador and UNIDO, would be requested for financial assistance.

8. Fish processing and marketing. The objective of the co-operation would be to exchange information related to a system of capturing, processing and marketing shark meat which would serve as a model for other interested countries. The main activities would be to investigate "in loco" the efforts in this field in both countries as well as the elaboration of models for the integral use of shark meat for different levels of production and different products. SUDEPE (Fishing Development Superintendence) was identified as the institution dealing with the proposal on the bilateral agreement between Brazil and El Salvador. The cost would be defined at a later date. UNIDO financing would be requested.

9. Vegetable oils processing plant. The delegate of El Salvador indicated its interest in the setting-up of a vegetable oils processing plant to process soybeans and thereby substituting the existing cotton seed

production. Additionally, the possibility of replacing 20,000 hectares of cotton seed cultures with soybeans should be investigated. The activities for co-operation with Brazil (CTAA-EMBRAPA - Technological Centre for Food and Agro Industrial Research) would include an evaluation of the climatic and soil conditions necessary for the substitution, as well as an estimate of the soybean production costs and a feasibility study of the oil mill.

10. Production of fish oil and fish meal. This would entail the elaboration of a feasibility study for a fish meal plant for food manufacturing. The Brazilian counterpart agency to carry out the study would be FEA-UNICAMP (Food Engineering Faculty, of the Campinas State University).

Both sides expressed their desire and readiness to intensify their mutual co-operation through the above-mentioned projects.

Discussion between Brazil and Nicaragua

Discussions on the promotion and expansion of co-operation in the field of agro-industries centered on the following projects of technical assistance:

1. Processing of fruits and vegetables (tomatoes): The objective would be to assist Nicaragua in the global planning of the production and conservation of fruits and vegetables. Two Brazilian experts, one agricultural engineer and one food processing engineer would carry out technical feasibility studies to explore the possibilities of adapting existing plants to diversify their production of fruits and tomatoes. The date envisaged for the mission was January to March 1986.
2. Production and refinement of palm oil: This would entail technical assistance to evaluate the vegetable oil extracting industries of Nicaragua and investigate the possibilities of their adaptation for the extraction of African palm oil. It would be implemented in the form of a study tour to Nicaragua of Brazilian experts to evaluate the existing facilities and to collect the required data as well as the execution of a technical feasibility study of the production and refinement of palm oil.
3. Yeast production: The objective of co-operation in this field would be to explore the possibilities of yeast production in Nicaragua. Firstly, by a preliminary evaluation of the existing studies realized by France, Germany and the Netherlands on this topic and secondly by means of a study for the setting-up of a yeast industry in Nicaragua, taking into account the necessity to maximize the use of local resources.
4. Alcoholic Fermentation: Nicaragua indicated its desire to receive assistance in the recuperation of CO₂ from alcoholic fermentation. The Nicaraguan side proposed to send for evaluation by a Brazilian research institute a study carried out by the Nicaraguan Ministry of Industry, specifying the relevant technological and economic parameters existing. This would constitute the basis for a two-week mission of a Brazilian expert, who would visit the existing institutions to evaluate - in loco - the technological options available to Nicaragua. The total costs were

estimated at US\$ 3,000 of which US\$ 1,200 would be in local currency. Both parties agreed to explore possibilities of financial assistance by Brazilian institution SUBIN (Economic and Technical International Secretariat of the Ministry of Planning) and UNIDO.

5. Assistance in agricultural and agro-industrial policy-making: Nicaragua expressed its interest in the transfer of relevant experience in the organization of peasant production and its relation to the food processing agro-industry of the Ministry of Agriculture of Brazil. It was suggested that this transfer could be implemented by study-tours of Nicaraguan policy-makers to Brazil to relevant Federal and State bodies for one or two weeks. The costs involved were estimated at US\$ 3,600 of which US\$ 1,200 would be in local currency. Funding would be requested from Brazilian institutions as well as UNIDO.

Discussion between Brazil and Peru

The two delegations exchanged views on further possibilities for co-operation in the field of agro-industries between the two countries.

Specifically, the following projects were discussed:

Study on possibilities of substitution of wheat

Specialists would visit both countries in order to analyze the existing infrastructure and interchange information. In addition it is planned to hold a seminar on the subject. The costs involved are around US Dollars 20,000 with financing envisaged through a UNIDO/FAO (Food and Agriculture Organization) project.

Course on Milling Technology of Wheat and Sorghum

Two participants from Peru will attend this 14-day course which will be held at the Federal Government Research Center - CTAA/EMBRAPA (Technological Centre for Food and Agro Industrial Research) in Rio de Janeiro.

Course on Thermoplastic Extrusion of Starches and Flour

Two participants from Peru will attend this course at CTAA/EMBRAPA (Technological Centre for Food and Agro Industrial Research) on chemistry of thermoplastic extrusion for human food and industrial applications.

In addition it was agreed to exchange information and possibly organize training in the areas of packaging, conservation of fruits and vegetables and food processing equipment between ITAL (Food Technology Research Institute of the Agriculture Secretariat of Sao Paulo (Brazil)) and the National Institute for Agro-industrial Development of Peru.

Peru has also indicated its interest to participate in the proposed regional project "Preparation of Study (Book) on Cassava Agriculture, Technology and Marketing".

Lastly, the Peruvian delegate also requested Brazil for provision of technical assistance in equipment design. For the food industry, information on biotechnology, especially in the field of short-run alcohol processing, as well as information and technical assistance in the areas of cultivation and growth of shrimps.

Discussion between Brazil and Uruguay

The delegates of the two countries agreed on co-operation in the area of training.

The objective of this project is to implement training courses for the specialization of agro-industry technicians within an existing agreement between UNICAMP (Campinas State University) and the University of the Oriental Republic of Uruguay. These courses will be designed for students of either of the countries and will be held by professors of either of the countries.

The main activities will be:

- the creation of an organizational committee for the training courses, consisting of lecturers of either of the universities;

- the realization of a pilot training course to be evaluated by either of the countries;
- the institutional organization of the modality that will direct future activities.

As a second point, the delegates of the two countries agreed on the implementation of joint sectoral projects, on specific agro-industrial sectors to be defined by both countries. These joint projects would cover:

- joint market studies of the defined products;
- human resource formation
- required techno-scientific research
- integration of the utilization of the required agropecuary inputs to these projects.

Discussion between Brazil and Paraguay

The two delegates exchanged views on a number of areas of possible co-operation in the field of agro-industry. The Paraguayan side requested technical assistance in the following areas:

Improvement of refrigeration and cold storage facilities:

This would entail the mission of an expert to Paraguay to evaluate the possibilities of modifying and adapting the existing facilities with the objective of a multiple utilization.

Leather and Footwear Technology:

The technical assistance should focus on small industry and rural areas and in the form of a training programme.

Wood and furniture Technology:

Technical assistance in the wood products and furniture production in the form of feasibility studies and the setting up of a training programme to improve furniture design and production.

Textile Fibres:

A Brazilian expert will investigate the possibilities of industry textile production and evaluate its production potential. Furthermore, a study to determine the necessary technological modifications in the already existing industries would be required to improve product quality.

Vegetable Processing:

Technical assistance was proposed in the form of training programme for Paraguayan experts in Brazil in the production and adaptation of new varieties of garlic as well as a study to evaluate the possibilities to produce powdered garlic.

Yucca Processing:

Examination of the possibilities of introducing yucca processing industries in the rural areas as well as a study exploring the possibilities of technological improvement of these industries was requested.

Furthermore the delegates agreed to strengthen the links already established by UNIDO and Brazil in the area of alcohol production, and to strengthen the area of mechanical inputs to increase agricultural production.

Discussion between Brazil and Surinam

Both delegations exchanged information on possible co-operation in the following areas:

- Establishment of rice paddy drying and storage facilities for small farmers: it was agreed that details on this project would be discussed at a later stage.

- Composite flours: The delegate of Surinam requested ITAL (Food Technology Research Institute of the Agriculture Secretariat of Sao Paulo) to provide information on the science and technology of composite flours. The Brazil delegation would provide the required information.

- Fuel Alcohol: The delegate of Surinam discussed the possibility of obtaining relevant information on the subject. The FEA/UNICAMP-SAO PAULO (Food Engineering Faculty, of the Campinas State University) would furnish Surinam the desired data.
- Hydrogeneration/and steam distillation equipment: Brazil offered to provide information on the above.
- Technology for baby and infant foods. It was agreed to further discuss this matter through technical visits of experts of both sides.

Discussion between Brazil and Jamaica

Both sides exchanged information on possible co-operation in the area of improvement of gasohol technology and its production and commercial usages in Jamaica. Another possibility of co-operation was also identified in vegetable oils processing facilities for soybeans, coconut and palm oil, for the production of crude oils, refined oils and meal.

The institutions involved in this co-operation were identified as: FEA/UNICAMP (Food Engineering Faculty, of the Campinas State University), CTAA/EMBRAPA (Technological Centre for Food and Agro-industrial Research) Brazil. A feasibility study would be required for this project.

It was agreed that the Jamaican delegate would report to his Minister concerning this subject. This matter would then be further pursued.

Discussion between Brazil and Trinidad/Tobago

Both parties recognized the potential for co-operation between their two countries especially in the field of agro-industry.

The delegation of Trinidad and Tobago specifically expressed interest in the following co-operative projects.

Cassava production and processing. This project would involve the provision of a technological package by Brazil for the production and processing of cassava for animal and human consumption as well as the exchange of experts.

Field production and processing of tomatoes. It was envisaged to conduct a feasibility study through an exchange of experts.

Canned tuna fish processing. The Brazilian side expressed its interest to carry out a techno-economic feasibility study in Trinidad involving all aspects of tuna fish production.

Both sides agreed to follow-up these possibilities of co-operation and explore possible sources of financing.

Discussion between Jamaica and Malaysia

Both sides exchanged information on possible co-operation in the area of improvement of palm oil technology and its production and commercial usages in Jamaica. Since the delegate of Jamaica was not authorized to discuss the details of co-operation, it was agreed that he would report to his Minister concerning this subject and the matter would then be further pursued.

Discussion between India and Ghana

The delegation from India and Ghana identified the setting up of plants for disposal of municipal wastes as a possible co-operation field.

Arrangements between the two countries institutions (City Council of Accra and Ministry of Urban Development India) to co-operate in setting up the plant would be further pursued.

Credit for financing the project would be explored, and UNIDO and other UN financial assistance was also requested.

Discussion between Yugoslavia and Ecuador

Both countries agreed to co-operate in the areas of

- fruit juice;
- industrial production of fish meal and oil;
- fruit dehydration;
- wood products and exploitation of the potential of Equatorial forests;
- shoe production;
- strengthening of meat (cattle and swine) production and its industrialization.

These activities would involve the Committee of Agriculture, Hydrology and Forestry of Yugoslavia and the Ministerio de Agricultura y Ganaderia del Ecuador.

Discussion between Ecuador and El Salvador

The country representatives have agreed on co-operation in

- 1) production of salt water shrimps;
- 2) fabrication of starch, flour and animal feed made of yucca.

The objectives of the co-operation have been defined as

- exchange of know-how for the production of shrimps and shrimp larvae
- supply of technical and economic studies

The institutions involved in these activities are

- Ecuador: Ministerio de Agricultura y Ganaderia;
- El Salvador: Programa de Desarrollo Agro-industrial.

The activities will comprise studies, investigations, exchange of technicians and the provision of a technical economical study elaborated in El Salvador.

There are no conclusions concerning the financial implications and sources.

Discussion between Costa Rica and Ecuador

An agreement has been made in the areas of :

- 1) export of fresh vegetables;
- 2) shrimp production.

The objective of the co-operation is the exchange of information and experience in those areas.

The following institutions will be involved:

- Costa Rica: Secretaria de Planificacion del Sector Agropecuario;
- Ecuador: Ministerio de Agricultura y Ganaderia.

Conclusions on financial applications and sources are yet to be made.

Discussion between Argentina and India

The area of the co-operation has been defined as the production of high protein bread based on wheat, soya and other flours.

The objectives are to exchange information and to establish a joint venture, involving the following institutions:

- Argentina: INFI;
- India: Food Corporation of India.

The main activities will be:

- the preparation of a feasibility report
- the exchange of experience and experts
- the training of personnel.

The costs have been estimated at US\$ 50,000 for which UNIDO will be requested to support.

Discussion between India and Yugoslavia

The delegates from India and Yugoslavia identified the following areas for co-operation:

1. Scientific processing of meat and by-products;
2. Processing of fruit and vegetables.

Both sides agreed to collaborate in above fields by exchanging information, training opportunities and expertise service as well as the establishment of joint ventures and exports.

Expenses will be met locally and assistance is to be sought from FAO, UNIDO and UNDP.

The co-operating parties involved were identified: Ministry of Agriculture (India) and the Federal Committee for Agriculture (Yugoslavia).

Discussion between India and Peru

The delegates from India and Peru identified storage of fruits, vegetables and food grains as co-operation areas. Arrangements will be made between institutions in two countries (CFTRI and FCI in India; Instituto Nacional de Desarrollo Agro-industrial in Peru) to collaborate in the field of research, exchange of information, training of personnel and holding of seminars.

Expenses will be met locally and assistance was to be sought from FAO, UNIDO and UNDP.

Multilateral discussions

Discussion between Argentina, Brazil, Paraguay and Uruguay

During the discussions the four countries agreed to carry out a project on "Feasibility Study for the Establishment of a Co-operative System for the Production, Processing and Commercialization of Milk and Milk Products".

The study would include the cycle from the production of milk at the country level, infrastructure for cold storage and collection, processing and commercialization.

A team consisting of an agronomist specialized in milk production, an engineer specialized in milk processing and a specialist in the distribution and marketing of milk and milk products will conduct a feasibility study for the establishment of the system.

A Steering Group formed by one representative from each country would be created to define the details for the study and control the development of the study and to propose further follow up.

It was estimated that the project would cost US\$ 51.800 and proposed that the co-operating countries cover the US\$ 41.000 equivalent in local cost and UNIDO cover the US\$ 10.800 needed in convertible currency. Expected time table and approximate costs are attached as annex IV.

As a second concrete project, the delegates of the four countries explored the following possibilities of co-operation in the field of meat technology: Firstly, to set up information retrieval banks in each of the four countries. These would make the latest information on meat technology research available to industry, governmental bodies, universities and research institutes. Secondly, to develop a programme of technological information exchange by promoting technical visits, specialized meetings, seminars, symposia and training programmes on specific topics of relevance to the regional meat industry and the scientific and research institutions.

The delegates considered to request national financing bodies and UNIDO for assistance to support these activities.

The following institutions would constitute the national counterparts: the National Institute of Industrial Technology of Argentina (INTI), UNICAMP-FEA (Food Engineering Faculty, of the Campinas State University, Brazil), the National Meat Institute (Uruguay) and the National Institute of Technology and Standardization (Paraguay).

A third joint project has been discussed. It would cover mutual co-operation on the formulation of the agro-industrial policies, its programming and its mechanisms. This would be done by joint evaluations on agro-industry in the four countries. All the countries agreed to discuss with respective institutions its operational aspects and ask for UNIDO support.

Discussion between Argentina, Trinidad and Tobago, Brazil,
Surinam, Peru and El Salvador

The delegates of Peru, Argentina, Brazil, Surinam and Trinidad, Tobago and El Salvador expressed their willingness to co-operate in the field of cereal technology. Specifically it was envisaged to hold a course on the thermoplastic extrusion of starches and flours for human food and industrial application. The course would be held at CTAA-EMBRAPA (Technological Centre for Food and Agro Industrial Research) in Rio de Janeiro, Brazil. Its duration would be one week, with two participants each from Peru, Argentina and Trinidad and Tobago and one participant each from Surinam and El Salvador. The cost of the course - estimated at US\$20,000 - would be covered by EMBRAPA (Brazilian Agricultural Research Enterprise, Brazil), cost of transportation and per diem expenses of the participants.

The delegations of Peru and Argentina expressed their interest to send two participants each to a 15-day course on milling technology of wheat and sorghum, using the wheat milling facilities at the CTAA-EMBRAPA (Technological Centre for Food and Agro Industrial Research). The question of funding was left open.

Discussion between Paraguay, Nicaragua, Costa Rica, El Salvador
Uruguay and Brazil

The delegates of Paraguay, Nicaragua, Costa Rica, El Salvador, Uruguay and Brazil expressed their interest to co-operate in the production, conservation, storage and marketing of fruits and vegetables. The co-operation was envisaged to comprise the following activities:

- exchange of technical personnel between Brazil and the other participants
- training activities at Brazilian institutions (FEA/UNICAMP - Food Engineering Faculty, of the Campinas State University, FEAGRI/UNICAMP - Food Engineering Faculty of the Campinas State University and SUBIN - Economic and Technical International Secretariat of the Ministry of Planning, Agronomic Institute) in fruits and vegetable processing.
- co-operation in the carrying-out of agronomical studies with the aim of selecting varieties of fruits and vegetables suitable for processing.

Technical assistance for specific industrial projects was offered by the Brazilian institutions, for example in feasibility studies for multi-purpose fruits and vegetable plants.

Discussion between Ecuador, Mozambique, Peru, Ghana, Jamaica,
Surinam, Trinidad and Tobago, Costa Rica,
Paraguay, El Salvador, Brazil and Malaysia

The delegations of Ecuador, Mozambique, Peru, Ghana, Jamaica, Surinam, Trinidad and Tobago, Costa Rica, Paraguay, El Salvador, Brazil and Malaysia agreed to investigate the possibility of co-operation in the area of cassava production. Specifically it was envisaged to prepare a study on cassava cultivation, processing and marketing. This would have the objectives of: collecting the available information on cassava planting,

processing and marketing, identifying the technical problems involved in the production and marketing of cassava and exploring possible solutions. The research work would be carried out by the Brazilian Research Center. The costs of the study were estimated at US\$25.000. Financing would be requested from EMBRAPA (Brazilian Agricultural Research Enterprise) and CNPq (National Council of Scientific and Technological Development) of the Brazilian side and UNIDO.

Discussion between Argentina, Paraguay, Costa Rica, Peru,
India, El Salvador, Brazil, Uruguay, Ecuador

The delegates agreed to establish co-operation and to initiate a system of exchange of information on the cultivation of the plant "Muna" and its use and application in the conservation of potatoes and other agricultural products, as well as to strengthen the development of future research.

IV. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. Economic and technical co-operation among developing countries has emerged as a new dimension of the establishment of the new international economic order. Every effort should be made to promote and strengthen such co-operation.
2. Agro-industry is of strategic importance to all developing countries. It should be accorded high priority in the development policies and plans of developing countries at national, regional and interregional level.
3. Exchange of experience and information among developing countries on policy-making, planning, programming and implementation mechanisms in the field of agro-industry is essential for its rapid development. To this end, appropriate institutional arrangements should be set up.
4. Through ECDC/TCDC meetings of this kind, which constitute an innovative and practical approach to South-South co-operation, to identify concrete areas of co-operation and to agree on specific projects.
5. The areas and projects for co-operation which were identified during the bilateral and multilateral discussions are of great importance to strengthen ECDC/TCDC and will contribute to the agro-industry development of the participating countries concerned.

Recommendations

1. UNIDO should continue to organize this kind of TCDC/TCDC meetings preferably at regional level and on some selected crucial topics. In order to achieve the optimum result, thorough preparation should be carried out, so that participating countries will come with more decision power and specific technical knowledge to make decisions during the meeting.
2. Immediate and effective follow-up action should be taken by the co-operating countries to implement the projects agreed upon during the meeting. To this end, UNIDO and UNDP are requested to provide necessary assistance.

3. UNIDO should help to establish a network of scientific and technical information among interested Latin-American countries in the field of agro-industry, making full use of the existing institutions in this region.

ANNEX I

LIST OF PARTICIPANTS

Argentina

Eng. Antonio Carlos BOUSTANI, Adviser, Secretary of Industry, Secretariat of Industry, Buenos Aires.
Mr. Guillermo CAMBIAZZO, Director Subrogante, Area de Alimentos, National Institute of Industrial Technology

Brazil

(see separate list)

China

Mr. XU JI, Director, Foreign Affairs Bureau, State Economic Commission, Beijing.

Costa Rica

Mr. Roman SOLERA ANDARA, Director of the Secretariat of Planning, San José,
Mr. Leonel MORALES FLORES, Minister/Counsellor, Embassy of Costa Rica, Brasilia.

Ecuador

Eng. Diego GANDARA, Under-Secretary of Agriculture, Ministry of Agriculture, Quito.

Egypt

Mr. Add EL SAMAHY, Chairman, EDFINA Food Company, Alexandria, Egypt.

El Salvador

Mr. Hector Alberto MONTALVO, National Co-ordinator, Agro-Industries Programme, Ministry of Planning, San Salvador.

Ghana

Mr. Benjamin L. LARTEY, Principal Research Officer, Engineering Division, Food Research Institute, Accra.

India

Mr. Kanwaljit Singh BAINS, Joint-Secretary, Ministry of Industry, New Delhi.

Jamaica

Mr. Ishmael ROBERTSON, Chairman, Agricultural Marketing Organization, Kingston.

Malaysia

Dr. Hash ABDUL WAHAB, Deputy-Director-General, Commodity Research, MARDI, Kuala Lumpur.

Mozambique

Mr. Antonio Almeida MATOS, Director-General, Secretaria Estado Industria Ligeira e Alimentar, Mapute.

Nicaragua

Mr. Alfonso Bernardino TURCIOS ARROLIGA, Director-General, Food, Beverage and Tobacco, Ministry of Industry, Managua.

Paraguay

Dr. Dionisio A. CORONEL BENITEZ, Co-ordinator, Technical Cabinet, Ministry of Commerce and Industry, Asuncion.

Mr. Conrado PAPPALARDO, Co-ordinator of Technical Cabinet, Ministry of Agriculture.

Peru

Mr. Teofilo J. ALIAGA, Chief, National Institute of Agro-Industrial Development (INDDA), Lima.

Mr. Gaston IBANEZ, Counsellor, Embassy of Peru, Brasilia.

Mr. José Luis SALINAS, Second Secretary, Embassy of Peru, Brasilia.

Surinam

Mr. Richard Biswahitre KALLOE, General Manager, Center for Industrial Development and Export Promotion, Paramaribo.

Trinidad/Tobago

Mr. Ivan CHAPMAN, Senior Project Analyst, Ministry of Finance and Planning.

Uruguay

Ms. Bibiana TRONCOSO, Director, Programming Division, Direccion de Programacion y Politica Agropecuaria (DIPYPA), Ministry of Agriculture and Fishing, Montevideo.

Ms. Celia BARBATO de SILVA, Director, Centro de Investigaciones Economicas (CINVE), Ministry of Agriculture and Fishing, Montevideo.

Mr. Lindor Avelino SILVA MACHADO, Auspiciado for National Planification Office, Regional Programme, Montevideo.

Yugoslavia

Mr. Franc PAJENK, Assistant President of Federal Committee for Agriculture, Belgrade.

Mr. MILE EFTIMOV, Chargé D'affaires, Embassy of Yugoslavia, Brasilia.

Observers

Food and Agriculture Organization of the United Nations

Mr. Pierre P. BONNEMAISON, FAO Representative in Brazil, Brasilia.

Economic Commission for Latin America and the Caribbean

Mr. Larry WILLMORE, ECLAC, Brasilia.

Mr. Juan José Pereira, Official, Economic Affairs, ECLAC, Brasilia.

Brazil

MINISTRY OF AGRICULTURE

- Rui Henrique Pereira Leite de ALBUQUERQUE (Director NUAGRO, Secretariat of Agricultural Planning)
- Roberto Teixeira ALVES, Adviser, NUAGRO
- Jose LIBINO DA ROCHA, Adviser, NUAGRO
- Jose Luis Valin BATELLI, Adviser, Secretariat of Agricultural Technology

BADESP (Development State Bank of Sao Paulo)

- Paulo de SOUZA ALVES - Director of Agro-Industry and Rural Operations Department
- Sergio MIRANDA DA CRUZ - Manager of the Studies and Planning Division
- Luis Carlos TERRA - Manager of the Agro-Industry Projects Evaluation Division

SICCT (Industry, Commerce, Science and Technology Secretariat of the State of Sao Paulo)

- Oswaldo Poffo FERREIRA - Director, Agro-Industry Co-ordination
- Eduardo Fernandes Pestana MOREIRA - Adviser, Agro-Industry Co-ordination

ABIA (Brazilian Food Industries Association)

- Edmund KLOTZ
- Moacir SARAIVA

ABIMAQ (Brazilian Machinery Industries Association)

- Hilberto PINZ, Division Director
- Jose Ricardo SUKADOLNIK (observer)
- Ambrosio Alves de Melo FRANCO (observer)

EMBRAPA (Brazilian Agricultural Research Enterprise)

CTAA (Technological Centre for Food and Agro-Industrial Research)

- Eduardo Paulo de Moraes SARMENTO - Director
- Luis Fernando VIEIRA - Head of Economic and Marketing Department
- Regina Celi Araújo LAGO - Head of Fats and Oils Technology Department
- Ahmed A. EL DASH - Head of Cereals Technology Department

CNPFT (National Centre for Temperate Fruit Research)

- Laercio NUNES Y NUNES - Director
- Joao Luis Silva VENDRUSCOLO, Researcher

ITAL (Food Technology Research Institute of the Agriculture Secretariat of Sao Paulo)

- Rodrigo Otávio TEIXEIRA NETO - Director
- Maria Regina SARTORI, Chief

IAC (Campinas Agronomic Research Institute of the Agriculture Secretariat of Sao Paulo)

- Dirceu CIARAMELLO - Head of Vegetable Fibres Division

IPT (Technological Research Institute of Industry, Commerce, Science and Technology Secretariat of Sao Paulo)

- Edison BITTENCOURT - Director of the Textile Centre

TROPICAL FOUNDATION (Research Tropical Foundation)

- Fumio YOKOYA - Vice-President
- Herman RITTNER

UNICAMP (Campinas State University, Sao Paulo)

. Food Engineering Faculty

- Iracema de Oliveira MORAES - Director
- Emilio Guzman CONTRERAS, Professor
- Norma A. Diaz MANCILLA, Professor
- Salvador Massaguer ROIG, Assistant Professor
- Bento da Costa CARVALHO, Junior Food Engineer
- Jose Christovam SANTOS, Professor
- Pilar Rodriguez DE MASSAGUER, Assistant Professor
- Ramon HINOJOSA GUTIERREZ, Professor
- Maria Amelia Chaib MORAES, Engineer
- Lincoln de Camargo NEVES FILHO, Assistant Professor

. Science and Technology Policies Research Group

- Sérgio Luiz Monteiro SALLES FILHO - Co-ordinator of the Biotechnology Group

. Agricultural Engineering Faculty

- Jose Luis VASCONCELLOS DA ROCHA - Director

CIBRAZEM (Brazilian Storage Company of the Ministry of Agriculture)

- Heinz Geraldo DE CASTRO RICK - Co-ordinator, Division of Planning and Analysis

STI/MIC (Industrial Technology Secretariat of the Ministry of Industry)

- Paulo Eduardo VELHO - Adviser

EMBRATER (Brazilian Enterprise of Technology Assistance and Rural Extension)

- Jairo Ribeiro DA SILVA - National Co-ordinator for Agro-Industry and Cassava

IEA (Agricultural Economic Institute of the Agricultural Secretariat of Sao Paulo)

- Jose Roberto DA SILVA

SUBIN (Secretariat for International Economic and Technical Co-operation of the Ministry of Planning)

- Marcus Venicio Alves da CUNHA

Annex II

The following UNIDO documents were distributed during the Meeting:

- Economic and Technical Co-operation among Developing Countries and UNIDO's activities in the Field of Agro-Industry Development.
- Project proposal entitled: "Integrated Food Processing Technologies adequate for Latin America".
- Current situation of Agro-Industry Development and identification of co-operation areas in some selected Latin American Countries (UNIDO/PC.120)

The following countries have submitted country papers:

Argentina, Brazil, China, Costa Rica, Ecuador, Egypt, El Salvador, Ghana, India, Jamaica, Malaysia, Mozambique, Nicaragua, Paraguay, Peru, Surinam, Trinidad and Tobago, Uruguay and Yugoslavia

ANNEX III

Position Paper on Integrated Food Processing Technologies adequate for Latin American Countries

The Latin-American and Caribbean delegates met to discuss the programme and agreed to support the proposal of Mr. Sepic, taking note of the following: the delegates of the Latin-American and Caribbean countries thanked the Brazilian government and UNIDO for the opportunity of sharing in this meeting their experiences in agro-industrial development.

The importance of agro-industry as a lever of growth for these countries, as well as the size and high level which has been reached in some of the countries underline the importance of regional co-operation in this field.

For co-operation to be meaningful, it must take into account the specific circumstances of each country and it must reaffirm the national character of the agro-industries to be developed.

Regional co-operation, starting from the recognition the different levels of development of the agro-industry in the Latin-American and Caribbean countries, should be aimed at:

- 1) the establishment of problem areas;
- 2) to utilize the possibilities of transfer of experiences in agro-industry from the more developed to the less developed countries;
- 3) to facilitate the exchange of positive and negative experiences among countries where the agro-industry is less developed;
- 4) to help define national policies to develop agro-industry.

Given the importance of creating and spreading agro-industrial technologies, the co-operation has to be directed towards the development of the national capacities in human resources and of critical mass in general.

The delegates suggested that in order to permit a strengthening of communication and future planning, a fund be made available by UNIDO to support these objectives. Furthermore each government should contact UNIDO in order to ratify its participation.

ANNEX III

El Salvador recommends to give priority to the proposal of Mr. Sepic to create and put in operation a regional (Latin-American and Caribbean) network of Food Technology Centers and for UNIDO to make available a fund for the countries of the region to carry out this work.

ANNEX IV

Feasibility Study for the Establishment of a Co-operative System for the Production, Processing and Commercialization of Milk and Milk Products

Expected Timetable

a. Definition of members for the Steering Group (SG) by countries	Feb 28/86
b. Meeting of SG in Rio Preparation of detailed programme for feasibility study	March 29/30/86
c. Hiring of team to conduct feasibility study	May 30/86
d. Preparation of conditions for team to conduct study	May-June 30/86
e. Conduction of study	July 1-Sept. 30/86
f. Meeting of SG in Buenos Aires Proposal of follow-up	Dec. 1/2/86

Approximate Costs

	US\$	Local Currency
a. Meeting in Rio and Buenos Aires of SG		
- Air tickets	4,800	
- DSA		US\$ 2,500
- Secretarial and general support		US\$ 1,000
b. Feasibility study		US\$18,000 ^{1/}
- Consultants (3 x 3 months x US\$ 2,000)		
- DSA (180 days x US\$ 60)		US\$10,000
- Secretarial support and infrastructure		US\$12,000
- Air tickets (two round trips, at US\$ 1,000)	6,000	
	<u>US\$10,800</u>	<u>US\$41,000</u>

Mode of Financing

It is proposed that the participating countries cover the US\$41,000 equivalent in local cost and that UNIDO cover the US\$10,800 needed to be covered in hard currency.

^{1/} It is expected that the three experts be from the participating countries and that they be assigned to the project by the respective Governments.

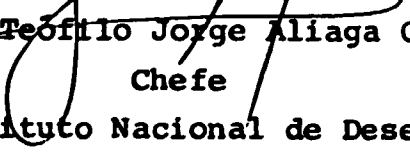


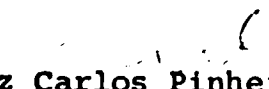
EMPRESA BRASILEIRA DE PESQUISA AGROPECUÁRIA - EMBRAPA

PROTÓCOLO DE INTENÇÕES

Pelo presente instrumento, manifestamos as nossas intenções de cooperação entre o INSTITUTO NACIONAL DE DESENVOLVIMENTO AGROINDUSTRIAL do Peru e a EMPRESA BRASILEIRA DE PESQUISA AGROPECUÁRIA, para o estabelecimento de cooperação técnica e científica, para o intercâmbio de técnicos, literatura técnica, pesquisa e experiência no campo da ciência e tecnologia de alimentos.

Brasília, 22 de novembro de 1985


Dr. Teófilo Jorge Aliaga O.
Chefe
Instituto Nacional de Desenvolvimento Agroindustrial,
Lima-Peru


Dr. Luiz Carlos Pinheiro Machado
Presidente
Empresa Brasileira de Pesquisa
Agropecuária - EMBRAPA,
Brasília, Brasil

ANNEX V

EMPRESA BRASILEIRA DE PESQUISA AGROPECUARIA - EMBRAPA

MEMORANDUM OF UNDERSTANDING

By this document we record our intention of co-operation between the National Institute of Agro-Industrial Development of Peru (Instituto Nacional para el Desarrollo Agroindustrial de Perú) and the Brazilian Enterprise of Animal Husbandry Research (Empresa Brasileira de Pesquisa Agropecuária) regarding the establishment of technical and scientific co-operation, the exchange of technicians, technical literature, research and experiences in the field of food science and technology.

Brasília, 22 November 1985

(signed)

Dr. Teófilo Jorge Aliaga O.
Chief
Instituto Nacional para el
Desarrollo Agroindustrial
de Perú,
Lima, Perú


(signed)

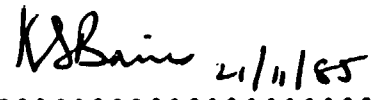
Dr. Luiz Carlos Pinheiro Machado
Presidente
Empresa Brasileira de Pesquisa
Agropecuária - EMBRAPA,
Brasília, Brazil

I N T E N T I O N P R O T O C O L

With this document we express our intentions of co-operation between the INSTITUTO NACIONAL DE DESARROLLO AGROINDUSTRIAL of Peru and the Indian Council of Agriculture Research, to establish scientific and technical co-operation, to exchange technicians, technical literature, research and experiences in the field of food science and technology, mainly in storage at farm level of vegetables, food grains and fruits.

Brasilia, 21 November 1985

.....

.....
Dr. Teófilo Jorge Aliaga O.
Jefe
Instituto Nacional de Desarrollo Agroindustrial, Lima-Perú

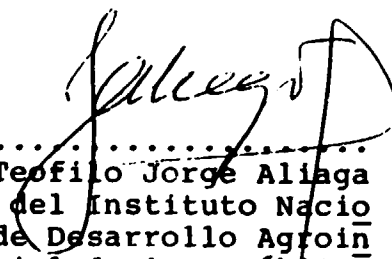
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 21/11/85
.....
Mr. Kanwaljit S. Bains
Joint Secretary
Indian Council of Agriculture Research,
New Delhi-India

PROTOCOLO DE INTENCION

Conste por el presente documento la intención del Centro Nacional de Pesquisa de Tecnología Agroindustrial de Alimentos (CTAA) de la República Federativa del Brasil y del Instituto Nacional de Desarrollo Agroindustrial (INDDA) de la República Peruana, con la finalidad de establecer una cooperación - tecnico-científica, para un intercambio de técnicos, experiencias, investigaciones científicas y de literatura, para establecer una red latinoamericana de cooperación técnico-científica, en el campo Agroindustrial.

Brasilia, 21 de noviembre de 1985

.....
Eduardo P. de Moraes Sarmiento
Jefe del Centro Nacional de
Pesquisa de Tecnología de Ali-
mentos (CTAA)


.....
Dr. Teófilo Jorge Aliaga
Jefe del Instituto Nacio-
nal de Desarrollo Agroin-
dustrial de la República
Peruana (INDDA)

MEMORANDUM OF UNDERSTANDING

With this document we express the intention of the Agro-Industrial National Research and Technology Centre for Food of Brazil (Centro Nacional de Pesquisa de Tecnologia Agroindustrial de Alimentos (CTAA) de la República Federativa del Brasil) and the National Institute of Agro-Industrial Development of Peru (Instituto Nacional para el Desarrollo Agroindustrial de Perú - INDDA) to establish techno-scientific co-operation, exchange of technicians, experiences, scientific research and literature in order to establish a network of Latin American techno-scientific co-operation in the field of agro-industry.

Brasília, 21 November 1985

(signed)

Eduardo P. de Moraes Sarmiento
Jefe del Centro Nacional de
Pesquisa de Tecnologia de
Alimentos (CTAA)

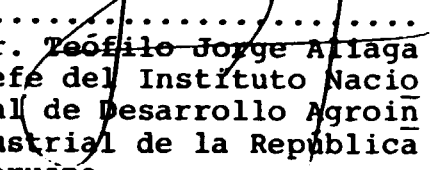
Dr. Teófilo Jorge Aliaga O.
Chief
Instituto Nacional para el
Desarrollo Agroindustrial de Perú (INDDA)

PROTOCOLO DE INTENCION

Conste por el presente documento la intención del Instituto de Tecnología de Alimentos (ITAL) de la República Federativa del Brasil y del Instituto Nacional de Desarrollo Agroindustrial (INDDA) de la República Peruana, con la finalidad de establecer una cooperación técnico-científica, para un intercambio de técnicos, experiencias, investigaciones científicas y de literatura, para establecer una red latinoamericana de cooperación técnico - científica, en el campo Agroindustrial.

Brasilia, 21 de noviembre de 1985

.....
Ing. Rodrigo Otávio Teixeira Neto
Director General del Instituto de
Tecnología de Alimentos (ITAL)


.....
Dr. Teófilo Jorge Allaga
Jefe del Instituto Nacional de Desarrollo Agroindustrial de la República Peruana

MEMORANDUM OF UNDERSTANDING

With this document we express the intention of the Institute of Food Technology of Brazil (Instituto de Tecnologia de Alimentos (ITAL) de la República Federativa del Brasil) and the National Institute of Agro-Industrial Development of Peru (Instituto Nacional para el Desarrollo Agroindustrial de Perú - INDDA) to establish techno-scientific co-operation, exchange of technicians, experiences, scientific research and literature in order to establish a network of Latin American techno-scientific co-operation in the field of agro-industry.

Brasília, 22 November 1985

(signed)

Ing. Rodrigo Otávio Teixeira Neto
Director General del Instituto de
Tecnología de Alimentos (ITAL)

Dr. Teófilo Jorge Aliaga
Chief
Instituto Nacional para el
Desarrollo Agroindustrial de Perú

PROTOCOLO DE INTENCION

Conste por el presente documento la intención de la Facultad de Ingeniería de Alimentos de la Universidad de Campinas -- (UNICAMP) de la República Federativa del Brasil y del Instituto Nacional de Desarrollo Agroindustrial de la República -- Peruana (INDDA), con la finalidad de establecer una cooperación técnico-científica, para un intercambio de técnicos, experiencias, investigaciones científicas y de literatura, para establecer una red latinoamericana de cooperación técnico-científica, en el campo Agroindustrial.

Brasilia 21 de noviembre de 1985

..... *Iracema*
Profesora Dra. Iracema de Oliveira Moraes
Directora de la Facultad de Ingeniería de
Alimentos de la UNICAMP

..... *Jorge Teófilo Aliaga*
Dr. Jorge Teófilo Aliaga
Jefe del Instituto Nacional de Desarrollo Agroindustrial de la República Peruana

MEMORANDUM OF UNDERSTANDING

With this document we express the intention of the Faculty of Food Engineering of the University of Campinas of Brazil (Facultad de Ingeniería de Alimentos de la Universidad de Campinas (UNICAMP) de la República Federativa del Brasil) and the National Institute of Agro-Industrial Development of Peru (Instituto Nacional para el Desarrollo Agroindustrial de Perú - INDDA) to establish techno-scientific co-operation, exchange of technicians, experiences, scientific research and literature in order to establish a network of Latin American techno-scientific co-operation in the field of agro-industry.

Brasília, 21 November 1985

(signed)

Profesora Dra. Iracema de Oliveira Moraes
Directora de la Facultad de Ingeniería de
Alimentos de la UNICAMP

(signed)

Dr. Teófilo Jorge Aliaga
Chief
Instituto Nacional para el
Desarrollo Agroindustrial de Perú

MEMORANDUM DE INTENCION DE COOPERACION TECNICO CIENTIFICO

Conste por el presente documento la intención de establecer una Cooperación Técnico Científico entre el Instituto Nacional - de Desarrollo Agroindustrial - Perú y el Programa de Desarrollo - Agroindustrial de El Salvador, con la finalidad de establecer una Red Latinoamericana de Cooperación Técnica en Ciencia y Tecnología - de los Alimentos.

Para lo cual firmamos este documento en señal de aceptación.



La Molina, 05 NOV. 85

Teofilo Jorge Aliaga Osorio
D.P.M.Sc.Ing. TEOFILO JORGE ALIAGA OSORIO
JEFE

Instituto Nacional de Desarrollo Agroindustrial - INDDA

Hector Alberto Montalvo
Lic. HECTOR ALBERTO MONTALVO
Coordinador Nacional
Programa de Desarrollo Agroindustrial de El Salvador
Ministerio de Planificación

MEMORANDUM OF UNDERSTANDING ON TECHNICAL AND SCIENTIFIC CO-OPERATION

This document shows the intention of establishing technical and scientific co-operation between the National Institute of Agro-Industrial Development of Peru (Instituto Nacional de Desarrollo Agroindustrial) and the Agro-Industrial Development Programme of El Salvador (Programa de Desarrollo Agroindustrial de El Salvador) with the aim of establishing a network of Latin American techno-scientific co-operation in the field of agro-industry.

The signatures below show the agreement reached among the parties concerned.

La Molina, 5 November 1985

(signed)

Dr. M.Sc. Ing. TEOFILO JORGE ALIAGA OSORIO
Chief
Instituto Nacional de Desarrollo Agroindustrial (INDDA)

(signed)

Lic. HECTOR ALBERTO MONTALVO
Coordinador Nacional
Programa de Desarrollo Agroindustrial
de El Salvador
Ministerio de Planificación

PROTOCOLO DE INTENCION

Conste por el presente documento la intencion del Instituto Nacional de Tecnologia Industrial (INTI) de la República Argentina y el Instituto Nacional de Desarrollo Agroindustrial de la República Peruana, con la finalidad de establecer una cooperacion tecnico cientifica, para un intercambio de tecnicos, experiencias, investigaciones cientificas y de literatura, para establecer una red latinoamericana de cooperacion tecnico-cientifica, en el campo Agroindustrial.

Brasilia, 21 de Noviembre de 1985.

.....
Ing. Guillermo Cambiazzo.
Direccion Nacional-Prog.
de Tecnologia de Alimentos.
INTI - Rep. Argentina.

.....
Dr. Teófilo Jorge Aliaga
Jefe del Inst. Nac. de Desarrollo Agroindustrial de la Rep. Peruana.

MEMORANDUM OF UNDERSTANDING

With this document we express the intention of the National Institute of Industrial Technology of Argentina (Instituto Nacional de Tecnología Industrial - INTI) and the National Institute of Agro-Industrial Development of Peru (Instituto Nacional para el Desarrollo Agroindustrial de Perú) to establish techno-scientific co-operation, exchange of technicians, experiences, scientific research and literature in order to establish a network of Latin American techno-scientific co-operation in the field of agro-industry.

Brasília, 21 November 1985

(signed)

Ing. Guillermo Cambiazzo
Dirección Nacional-Prog.
de Tecnología de Alimentos,
INTI - Rep. Argentina

(signed)

Dr. Teófilo Jorge Aliaga O.
Chief
Instituto Nacional para el
Desarrollo Agroindustrial de Perú