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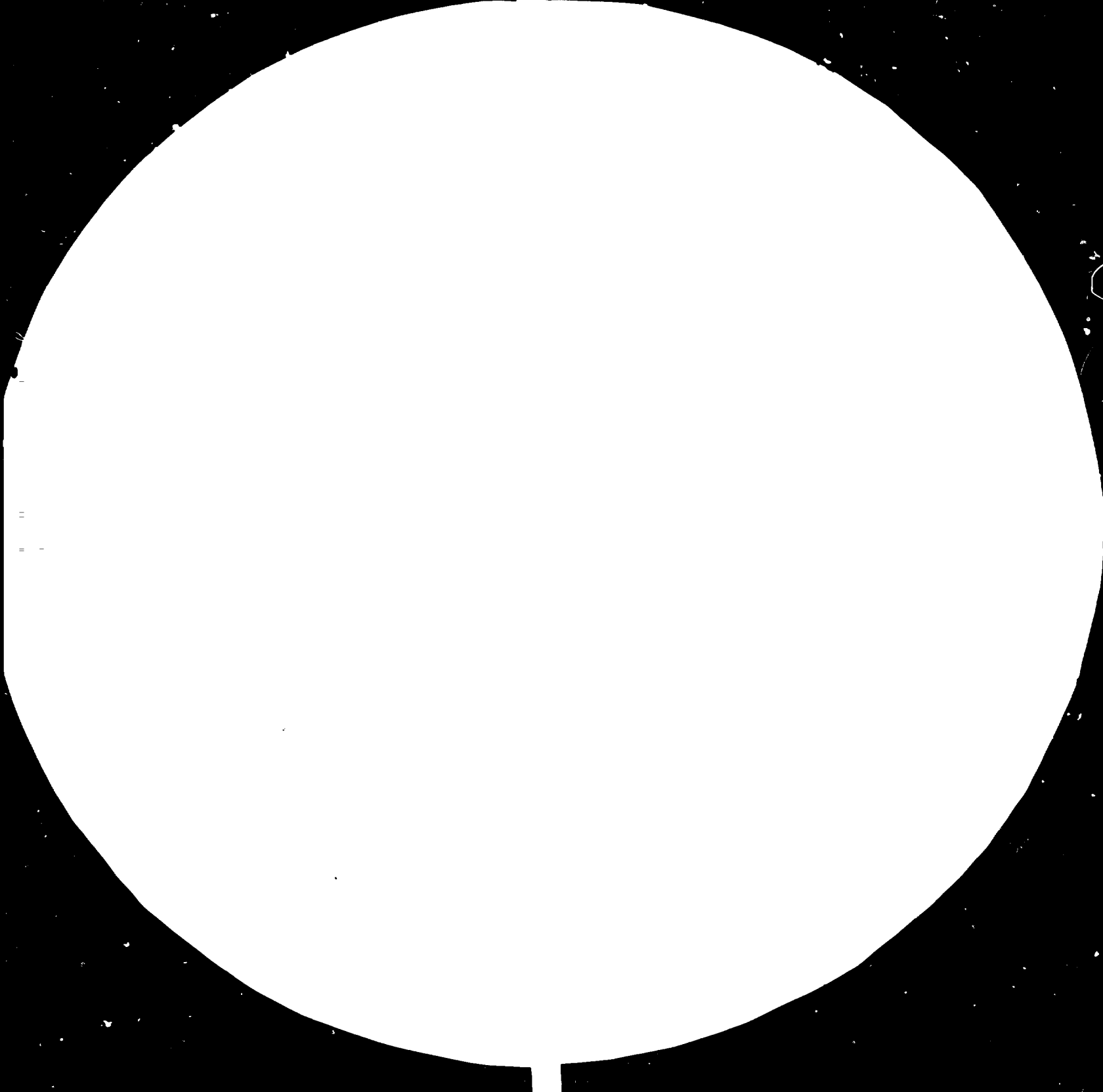
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CO-OPERATION BETWEEN YUGOSLAVIA AND DEVELOPING COUNTRIES
IN THE AGRO-FOOD INDUSTRY J

- National Paper -

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1. THE DEVELOPMENT OF THE AGRO-FOOD INDUSTRY IN YUGOSLAVIA

1.1. Structural socio-economic transformation in agriculture

Aware of the importance of developing agriculture and food production in the country and world-wide, Yugoslavia, as an economically underdeveloped country started developing its agriculture soon after the Second World War. Agriculture was the basic sector of the economy, and the agricultural population consisted of 73 percent of the total population in 1945. Subsistence farming and small farms prevailed, and the predominant use of hand and animal-drawn implements, and with very low labour productivity.

More intensive development of agriculture began in the late fifties, after an industrial base was established and after personnel was educated and trained for spreading and introducing in production modern technical, technological and scientific practice. The latest Yugoslav and international scientific achievements were used in the process. The organizational forms and technological practices which were not suited to the given social and economic conditions were abandoned.

Yugoslavia's dynamic and permanent socio-economic development was reflected in changes in the socio-economic structure of the population. Average annual growth index in the 1948 to 1982 period were as follows: total population 1.1 percent; workers 4.8 percent; social product in constant prices 5.8 percent; gross industrial output 8.5 percent and gross agricultural output 3.1 percent.

Yugoslavia's economic and historical heritage necessitated an overall socio-economic development which would make possible the transformation of a backward, predominantly subsistence and autarchic agriculture into a modern, highly productive and export-oriented industry. Therefore, Yugoslavia's strategy of agricultural development remained an integral part of the strategy of an accelerated socio-economic development of the country.

The agricultural population was reduced by 6.4 million as people moved to the non-agricultural sector. Thus, the share of agricultural population in the total population in the last few decades was decreased from 73 percent in 1945 to a mere 19 percent in 1981.

These fast and profound changes in the socio-economic structure of the population solved the question of economic and social status in agriculture. Agrarian overpopulation was reduced considerably, and the social productivity of labour was increased.

1.2. Changes in the economic structure

The fast development of agro-industrial production and the accelerated growth of infrastructure caused significant changes in the economic structure. In 1947, industry accounted for 18.2 percent of the social product, and agriculture for 39.5 percent. In 1982, the share of industry in the social product amounted to 40.0 percent and that of agriculture to 14.4 percent. Six industrial branches draw on agriculture for their raw materials: food products, beverages, cattle feed, tobacco, leather and textile; they account for about 27 percent of the total output of the industry. Some sections of the metal and chemical industry manufacture inputs for the food industry,

amounting to 12 percent of the total output of the industry. The food industry is becoming a major consumer of construction materials, energy, transportation, and also contributes significantly to the earning of income in trade, catering and tourism. In this way, both directly and indirectly, within the framework of the agro-industrial complex, agriculture generates over 50 percent of its gross national product.

1.3. Agricultural development

After World War II, the second agrarian reform was carried out, and it resulted in major changes in land ownership. Large individual farms were abolished and the surplus land was given to poor and landless farmers (51.0 percent), or to social farms (24.7 percent). As land was given to social farms for permanent use, this sector became stronger and an important factor in agricultural development. Social farms grew into large modern organizations of an agro-industrial and integrated type, with sophisticated equipment and high labour productivity (agro-industrial combines). Additional land was bought and nowadays, these farms account for 16 percent of all arable land, 30 percent of the total agricultural production and about 50 percent of commodity production. A specific process of association is developing through various forms of co-operation between the social and private farmers.

During this period, agrarian per capita production was increased 2.5 times. The largest growth in production was achieved in animal husbandry (3 times), plant production (2.5 times), and fruit production (2 times). In 1983, wheat production was 3.3 times larger than in 1947, maize 2.5, sugar beet 4.7, plums 1.6 and grapes 1.9 times larger than in 1947. Meat production figures for 1983, in millions of tonnes, are the following: several grains - approximately 17.0 (wheat 5.5, maize 10.4); sugar beet 5.7, and oil seeds 0.5 (sunflower, soybean, rape seed), and total meat production amounted to 1,32 million tonnes (of which 0.36 beef, 0.5 pork, 0.3 poultry meat), and 4.4 million tonnes of milk.

In plant production, agricultural organizations have attained top world performance. In 1983, the yield of wheat in the social sector amounted to an average of 4.65 tonnes/ha, maize to 6.75 tonnes/ha and sugar beet to 4.1 tonnes/ha. Milk production in the social sector has reached the average of over 5000 litres per cow, and in the individual sector of about 1600 litres per cow.

1.4. Machinery and technical equipment

Special progress has been registered in agricultural mechanization. It has been expressed in terms of increasing total traction power and changing it, and in increasing the number and changing the structure of agricultural machines and implements. In 1947, mechanical traction power comprised only 2 percent of total traction power, and in 1983, it accounted for more than 80 percent. Due to the considerable increase of the traction power of tractors and combine harvesters and other implements, locally manufactured to a large extent, an advance has been achieved in land tilling and machinery has been introduced in harvesting. This led to a significant improvement of farmers productivity. Most of these machines and implements are locally made.

Chemical industry development has led to an increase in the consumption of fertilizers and to a change in its pattern (complex fertilizer is increasingly being used). At present, 120 kg/ha of active matter is being used. Plant protection and animal protection agents are being used more extensively as well.

1.5. Development of the food processing industry

The development of agriculture in Yugoslavia has continuously increased the number of industries involved in the finished processing and marketing of these products. Agricultural raw materials are nowadays being processed by quite a number of industries. At present, there are 970 industrial organizations in Yugoslavia involved in food production; 230 in the production of beverages, 80 in the production of cattle feed and about 90 in the production and processing of tobacco.

During the post-war period, the food-processing industry output was increased 22 times, the production of beverages 30 times and the production of cattle feed over 60 times (1948 to 1982).

Yugoslavia's food-processing industry has large and modern production facilities. In the early eighties, the food-processing industry was rapidly developed, including downstream processing, and a large number of industries producing various convenience foods, baby and special diet food, etc.

The food production figures for 1983 (in thousands of tonnes) were as follows: flour 2405; sugar 722; sausages 185; canned meat 102; edible vegetable oil 238; canned fish 39; noodles 85; soup stock 12; alcohol 50; cattle feed 3586; beer 12,398; non-alcoholic beverages (000 hl) 4170. About 70 percent of all food processing facilities are located within agro-industrial combines.

1.6. Education, science and research

The intensification of agricultural production has primarily been due to the introduction of modern technology, the success of Yugoslav science, the involvement of experts and training of farmers. Yugoslavia has great professional and scientific potentials for promoting agricultural production. In 1981, there were 111 scientific and research and development institutions dealing with agriculture and food processing, employing 3166 researchers, professional and technical collaborators with university degrees. Yugoslav maize hybrids and wheat varieties rank among the highest in the world in terms of yield. In the 1945 to 1982 period, 22,092 students graduated from agricultural universities, 7993 received degrees in veterinary medicine and 3128 majored in food-processing and technological sciences.

In 1983, almost 12,000 students were attending the nine faculties of agriculture and food technology in Yugoslavia. There is an extensive network of professional and counselling services. Such an intensity of education and research gave a major contribution to the results achieved in the development of agriculture and food-processing industries.

2. BRIEF RESUME OF EXISTING CO-OPERATION OF YUGOSLAVIA WITH DEVELOPING COUNTRIES IN THE AGRO-FOOD INDUSTRY

This co-operation is primarily the result of the strengthening of Yugoslavia's human and productive potentials not only in agriculture and in the food-processing industry but also in agro-related industries such as the agricultural machinery and food-processing equipment industry, the chemical industry, etc. The production, research and development capacities of the Yugoslav agro-complex are mainly concentrated within agro-industrial combines. Eventually, some of the largest and most experienced agro-industrial combines established their own strong agro-consulting and agro-engineering organizations, the most important ones being PKB-Inzenjering, Belgrade; EMONA, Ljubljana; UPI-Invest, Sarajevo; PPS, Osijek; Dunav-Tisa-Dunav, Novi Sad; APRO Hercegovina, Mostar, AIK 13. jul, Agroiinzenjering, Titograd; ZZPK, Makedonija, Skoplje. These organizations, together with others in Yugoslavia, are the chief proponents of co-operation in the agro-food industry with developing countries.

The significant results achieved in the development of Yugoslavia's agro-industry have aroused the interest of quite a number of developing countries, particularly in the integrated development model of agriculture and the food processing industry, which also led to the expansion of co-operation in this field, which is so vital to developing countries. Yugoslavia, being a non-aligned and developing country, feels duty-bound to transfer its own know-how and experience through various forms of economic and technical co-operation, emanating from the fact that the food problem is one of the major economic and political problems of developing countries, and therefore conducive to political and other pressures, which even threaten their sovereignty and independence.

Though still a developing country, Yugoslavia provides assistance, its available potentials and know-how, through numerous forms of economic, scientific and technical co-operation with developing countries. This assistance is given mainly in the following fields: crop and industrial plant production, animal husbandry, the land development and irrigation, the construction of and equipment for agricultural and food-processing facilities, etc.

With a view to better and more effective co-operation, associations consortia and trade promotion offices have been established in several developing countries.

Numerous measures have been envisaged in Yugoslavia for providing more effective assistance. The resources of work organizations have been pooled through the Solidarity Fund with Non-Aligned and Developing Countries and through the Yugoslav Bank for International Economic Co-operation.

In addition to bilateral relationships, Yugoslavia also has an intensive co-operation with international organizations, particularly with UNIDO, *FAO, IFAD, WFC, WFP, UNEP, UNESCO and other organizations and agencies within the UN system. Yugoslavia regularly contributes to the World Food Programme (WFP) and to the International Fund for Agricultural Development (IFAD).

On a bilateral level, through the Solidarity Fund with Non-Aligned and Developing Countries, Yugoslavia regularly provides grants earmarked for the development of agro-industry and agriculture, as well as food aid to least developed countries. The resources allocated for the purpose

* FAO = United Nations Food and Agriculture Organization

WFC = World Food Council

UNEP = United Nations Environmental Programme

UNESCO = United Nations Educational, Scientific and Cultural Organization

amounted to a total of approximately 3 billion dinars in the 1978 to 1983 period (about US\$ 100 million, according to 1979 rate of exchange), excluding transportation, insurance and other costs.

Economic and technical co-operation to date has been carried out through many different forms, particularly:

- the building and equipping of integrated agro-industrial complexes (Angola, Ethiopia, Iraq, Iran);
- the preparation of development studies (Algeria, Angola, Benin, Guinea, Ghana, Iraq, Iran, Madagascar, Mexico, Nicaragua, Peru, Tanzania, Sudan, Venezuela, Zambia);
- national maize development programmes (Angola, Algeria, Iraq, Iran, Mozambique, Zambia) and oil seeds (Iran, Iraq and Sudan);
- the establishment of agricultural farms and facilities (Iraq, Iran, Libya, Tanzania, Ghana);
- the construction of irrigation and reclamation facilities (Algeria, Burma, India, Iraq, Libya, Morocco, Nigeria, Peru, Sri Lanka, Venezuela);
- the construction of processing and agro-industrial facilities: bakeries (Iraq, Iran); dairies (Angola, India, Guyana, Zambia); slaughterhouses and meat-packing plants (Algeria, Bangladesh, Iraq, Colombia, Mali, Sri Lanka); fruit and vegetable processing plants (Algeria, Cuba, India, Mali, Sri Lanka); silos (Algeria, Bangladesh, Iraq, Saudi Arabia, Zaire, Zambia); food quality control laboratories (Afghanistan, Angola and Tanzania); animal feed factories (Iraq, Iran, Vietnam).

Following is an account of some of the more important activities within Yugoslavia's co-operation with certain developing countries.

1) Algeria. Several Yugoslav organizations have initiated co-operation on a number of agro-food industry projects. Most prominent among these are PKB, Dunav-Tisa-Dunav, the Maize Research Institute and Energoprojekt, Belgrade. It is expected that the major irrigation project related to the agricultural development of the Sumam valley and the utilization of large areas in the Djebel Ouchc region will be initiated in the near future. An important form of co-operation is integrated agro-industrial development in certain municipalities, including the development of agriculture in mountains and hilly areas. A number of Yugoslav experts have been involved in implementation of these projects.

2) Angola. PKB has made a feasibility study on the development of the Quicuchi and Sapu agro-complex in the field of crop and vegetable production. Talks are in progress on the implementation of several projects (the preparation of a study on long-term development programmes for Kwanza-Bengo; the preparation of a feasibility study for the Catete agro-industrial complex, as well as the preparation of the master and execution designs for the Quicuchi agro-industrial complex, including technical assistance).

DTD is working on the implementation of the Kwanza-Norte project. The Maize Research Institute is carrying out the national maize production development programme. The aim of this programme is the doubling of maize production within six years.

3) China. Co-operation between China and Yugoslavia is taking place in both agricultural production and processing fields. Several projects are under implementation including: establishment of farms for rabbits, cattle, pig and poultry production. New projects in the field of food processing are under consideration.

4) Egypt. The possibility is being considered of co-operating by way of establishing a joint venture for fruit and vegetable processing in El-Fajuma as well as establishing an agro-industrial complex in North Tahrir near Alexandria. This co-operation is pursued by PKB. Energoprojekt is co-operating in the crop growing and agricultural production in general in the irrigated areas in El-Mulat. Three new irrigation projects have been envisaged, and it is expected that they will be carried out by PKB, DTD and INGRA.

5) Benin. It is expected that Energoprojekt, in co-operation with other organizations, will prepare a feasibility study for agricultural and animal production and the production of foodstuffs for the Issaba agro-industrial complex. The support of UNIDO is expected for this project.

6) Ghana. PKB has been commissioned to prepare a feasibility study for the Drabonso agro-complex and render technical assistance, as well as deliver agricultural machinery.

7) Iran. In 1976, a contract was signed between DTD and the Ministry of Agriculture for designing, delivering, erecting and putting into operation a number of turkey, cattle, broiler and layer hen farms, as well as an animal feed factory and a slaughterhouse with a rendering plant. The Maize Research Institute has been working on the national maize development programme. The Institute for Agriculture and Vegetable Production from Novi Sad successfully worked on a similar national project for oil seeds (sunflower, soya).

8) Iraq. Under the contract signed between PKB and the Ministry of Agriculture and Agrarian Reform on the execution of the "Dujailah" agro-industrial complex, this project was executed in 1984 and it comprises:

- (a) developing primary agricultural production on a gross area of 26,000 ha;
- (b) the establishment of two dairy cow farms with milk production and processing;
- (c) the construction of open irrigation canals and a drainage system, etc.

9) Libya. Energoprojekt has completed the Garabuli project which encompasses 1150 farms covering an area of 30,000 ha of arable and partly irrigated land. The Bir Ayya project was executed by Hepok in co-operation with Hidrogradnja. The subject of co-operation was the establishment of a eucalyptus plantation on an area of 1200 ha and pasture reclamation on an area of 1800 ha. Co-operation on pasture reclamation projects in the Br-Ganom and Sirt area is under consideration.

10) Madagascar. PKB has made a feasibility study for the establishment of the joint Mandoto and Morovay agro-industrial complex covering 10,000 ha, as well as for the Maramanga and Zomandao complexes. These projects focus

on the promotion of plant and animal production, the erection of processing facilities, marketing and infrastructure.

11) Nigeria. "Emona" co-operates on the establishment of an industrial complex and a pig farm, in storage, marketing and infrastructure. Expansion of this co-operation is anticipated.

12) Sudan. The agro-industrial combine Osijek has prepared feasibility studies for an agro-complex covering an area of 100,000 ha in the Damazin area as well as for another one, covering 10,000 ha in the Gezira region. A number of field trips over several years were conducted involving the pilot production of various crops and vegetables on both locations. The possibilities of the joint production and processing of oil seeds and tomatoes are currently under review.

13) Tanzania. The organizations 13. jul and PKB have been engaged in land development and agricultural production on the Dakava II farm. Agricultural equipment and two-year technical assistance have been provided.

14) Tunisia. UPI has established a joint enterprise and built a slaughterhouse together with the firm Lohaum, while Emona Inzenjering has delivered poultry farm equipment.

15) Zambia. PKB has made a feasibility study for the Mtirizi state farm covering an area of 45,000 ha. Negotiations for the execution of the project are underway. The Maize Research Institute has been successfully producing seed and mercantile maize, as well as cattle, on the Mazabuka farm. The possibility is being reviewed of the farm becoming a regional centre for training personnel for maize production not only for Zambia, but for the neighbouring countries as well.

The majority of the mentioned projects were or are being implemented by way of credits extended by the Yugoslav organization involved to its foreign partner, with the participation of the Yugoslav Bank for International Economic Co-operation.

According to the Bank's rules, the Yugoslav Bank granted credits against the dinar portion of the expenditure for the export of equipment, engineering and consulting services and the execution of complete projects, with the repayment period being 3 to 10 years, depending on the kind of export transaction for which the credit is granted. The credit terms were agreed upon for every specific transaction beforehand (advance payment, interim payments, extent of credit, annual interest and the repayment period).

In addition to credits, the Yugoslav Bank has also given grants to finance feasibility studies for the execution of major projects, especially in cases when the party that commissioned the study and/or some international financial or development institution also took part in its financing.

3. THE POSSIBILITIES OF CO-OPERATION WITH DEVELOPING COUNTRIES IN THE AGRO-FOOD INDUSTRY

The developmental path traversed so far, the attained agricultural technology, practice and science levels, as well as the flexibility of the Yugoslav model of agro-industrial development involving the horizontal and vertical integration of the individual and social sectors, and the experiences gained in co-operating in this area with other, in particular, developing countries indeed make for the further expansion of this co-operation. In this way, Yugoslavia is willing to contribute, within its possibilities, to the resolving of the problems related to agriculture and food industry in developing countries.

In the agro-industrial field, Yugoslavia can successfully co-operate with developing countries through either existing or new forms of co-operation, notably the establishment and equipping of all types of farms and holdings, including agro-industrial estates with complete agro-industrial and infra-structural facilities, up to the integrated macro-economic development of agriculture in given regions.

3.1. Economic co-operation and engineering services

Yugoslav experience in co-operating with developing countries so far indicates that these countries are increasingly interested in higher forms of co-operation, particularly in joint ventures in the area of agricultural production, in building food-processing industry and infrastructural facilities required for agriculture, in irrigation, agricultural machinery, and the like.

The fact that developing countries may be interested in joint ventures is understandable; apart from attracting the necessary capital, this also enhances the interest of the foreign partner involved.

Yugoslavia today is anxious to consider, within its possibilities, co-operation with developing countries on viable projects for the production and processing of tropical fruits, spices, coffee, cocoa beans, oilseeds, cotton, cereals, leather and wood, etc.

Economic co-operation between Yugoslavia and these countries in the field of agriculture and the food-processing industry can be pursued through the following:

- adequate agricultural land development (cartography, geological, hydrological, pedological and other studies, as well as hydro-reclamation works);
- the production, processing, improvement and utilization of primary food products (cereals, animal feed, oilseeds, industrial, aromatic and medicinal plants and herbs, including teas, spices and coffee);
- the production, processing and storage of all kinds of meat and animal products (oef, mutton, pork, poultry, milk and eggs), and fish (freshwater and sea fish);

- the processing and storage of all agricultural produce and higher processed products (alcoholic beverages, confectionery, etc.), and the construction and equipping of distribution centres, supermarkets and storehouses.

In addition, this co-operation can also take on the form of the rendering of various services and production development as part of given technological lines in plant and animal production. In plant production, these lines would encompass the introduction of high-yielding varieties and hybrids, the production and improvement of seeds, the construction of processing, storage, cold storage and outward processing facilities for various lines of production: cereals, fruit and vegetables, oilseeds, sugar, grapes and wine, animal feed. For this co-operation, Yugoslav and local high-yielding breeds and varieties as well as those resulting from the joint work of researchers from the countries concerned would be used.

In the field of animal production, these lines would encompass the complete production, processing and storage of animal products, including that of fisheries, the production of meat, eggs and milk.

Yugoslav organizations have gained considerable experience in the construction and equipping of complete food-processing industry plants, such as: mills, bakeries, dairies, breweries, sugar mills, tobacco factories, alcoholic beverage distilleries as well as fertilizer and animal feed plants. Attached is the list of Yugoslav possibilities and opportunities for co-operation with developing countries in the agro-food industry.

3.2. Transfer of technology

This line of economic co-operation has to do with the further transfer of Yugoslav technology and the organizing of agricultural production via modern engineering services. By reviewing the results achieved so far, one can conclude that in this area, Yugoslavia has also gained significant experience. Still, it is only the beginning in this field of co-operation. The more so if one takes into account the fact that the organization of modern engineering services worldwide is a direct reflection of the specific ability to change the status quo by promoting technical and technological progress and stepping up employment, and is in fact a measure of the aptness of the provider of such services.

Modern engineering necessarily comprises the rendering of comprehensive services, such as:

- exploratory work related to project terms of reference and preparation of reports; studies of technical problems and preparation of relevant reports;
- all types of studies and analyses;
- elaboration of projects and project documents, preparation of appropriate contract documents related thereto;
- preparation of studies needed for participation in international tenders for the construction of various facilities;

- all types of research and analyses (geological, hydrological, pedological, climatological, entomological, phytopathological, chemical);
- consultations with state bodies, commissions, courts and arbitration tribunals in respect of certain problems, with a view to obtaining economic and financial project appraisal;
- planning and co-ordinating projects requiring specialized work, with the testing of materials and equipment on site during construction.

Evidently, from the economic and substantive points of view, modern engineering services constitute the safest form of co-operation for both buyer and seller, combining their interests and turning them into a tangible co-operation contract. A sale in engineering terms can be a whole range of services related to the designing and construction of facilities, from technical and economic studies up to the commissioning and putting plants into operation based on the turnkey principle.

Two crucial stages in implementing agro-engineering services are the following:

- the transfer of own technology as well as of that resulting from co-operation with other developed countries, the transfer of the latest know-how and its incorporation into the technological process;
- the application of the latest results in genetics, with the establishment and development of production involving the highest yielding varieties, species and breeds and appropriate seeds and seed stocks. In this connexion, Yugoslav scientific results in the production of maize and wheat as well as of other crops are well-known. Maize hybrids with yields of up to 200 mc/ha have been obtained, wheat varieties with almost 100 mc/ha, triploid sugar beet varieties with a 22 percent sugar content, peach varieties with varying ripening seasons, yields and taste, as well as numerous varieties of fruit and vegetables to suit the tastes and needs of the consumers.

In animal husbandry, highly productive cattle breeds have become veritable "milk factories", with a genetic potential of over 10,000 litres of milk annually per head. Hen hybrids laying over 260 eggs per year have been produced.

These and other results have meant revolutionary changes in agricultural development, above all by translating scientific results into new technologies, accompanied by an appropriate investment policy and adequate scientific and technical personnel training.

Modern engineering organizations are of substantial importance since they make science an integral part of the economy and create conditions for large-scale agricultural production. With this in mind, the production of high-yielding seeds for the developing countries should be studied and elaborated more attentively and appropriate technical services promoted to that end.

3.3. Food-processing equipment and agricultural machinery

During the last two decades, Yugoslavia has developed a modern engineering industry including production of agricultural machinery and equipment for the food-processing industry and agriculture.

Over 20 specialized factories in Yugoslavia are involved in the production of machinery and equipment required for the food-processing industries, covering, among others, the following sub-sectors: cereal processing, storage and transportation; bakeries; slaughterhouses and meat processing plants; dairies and milk processing plants; fruit and vegetable processing; equipment for the production and bottling of wine, alcoholic and non-alcoholic beverages; vegetable oils and fats processing; sugar production; fish processing; etc. Related equipment and facilities for storage, transportation, cold-storage, etc., are also included in the production programme of these companies.

The domestic agricultural machinery industry has contributed very much to the development of Yugoslavia's agriculture. In over 50 factories, a wide range is manufactured of the following: tractors (wheeled and caterpillars, 18 to 514 HP); combine harvesters; various types of land preparation and tilling implements (ploughs, disk and standard harrows, cultivators, artificial fertilizer spreaders); various types of trailers, pumps and irrigation systems; driers and dehydrators; agricultural aviation; manual farm tools; all types of animal-drawn equipment; husking and grinding machines, etc.

Organized via its association and the Chamber of the Economy of Yugoslavia, the Yugoslav industry of agricultural machinery represents a sound basis for the application of modern technology in agriculture, on both small private farms and large holdings.

A part of the manufactured tractors, farm machinery and tools is exported, mostly to the developing countries (Egypt, Ethiopia, Algeria, India, Brazil, Pakistan, Tunisia, Libya, Ghana, Indonesia, and others). With India, Egypt and Pakistan, contracts have been concluded on technology transfers and the manufacture of tractors and other agricultural equipment. Talks are in progress with some other countries also, with a view to establishing industrial co-operation in the manufacture of agricultural tools, tractors and other farming equipment and machinery.

3.4. Trade

Yugoslavia shall seek in the future also to expand its trade in agricultural products. As this line of economic co-operation is comparatively under-developed, while on the other hand it is promotive of a sustained increased production in the developing countries, it shall be necessary to exert both bilateral and multilateral efforts so as to transcend the traditional sale forms of trade in raw materials, agricultural products and foodstuffs and increasingly orient them to long-term trade programmes, ones based on the comparative advantages and possibilities of the countries involved and ones serving to develop the relevant line of production.

Hence, the first and second lines of economic co-operation are inter-dependent and provide a new basis for trade through joint production and joint ventures based on equity and mutual interest.

Once the support mechanisms to economic co-operation among developing countries are further improved, in accordance with the action programmes adopted at the Non-Aligned Summit Conferences in Colombo, Algiers, Havana and New Delhi, intensified trade and overall economic co-operation among the developing countries is to be expected.

In Yugoslavia's overall foreign trade, the share of developing countries should go up to 25 percent, although at present we are quite short of this target. This is an important task which could be fulfilled provided existing and new mechanisms of co-operation among developing countries are fully applied. To achieve this goal would be of lasting significance to the further enhancement of Yugoslav strategic socio-economic orientation and would help strike a balance in its foreign trade.

3.5. Scientific and technical co-operation

For almost three decades now, Yugoslavia has been intensively developing various forms of scientific, technical and technological co-operation with a large number of developing countries, with 78 of which it has concluded agreements, while with another 23, periodic programmes of co-operation have been concluded. Hence, this co-operation represents a significant component of Yugoslavia's overall bilateral relations with these countries and a factor seriously counted on in future co-operation also.

Within the framework of this co-operation, which encompasses a number of fields and sectors, agriculture has a prominent place, and, in that context, particularly those activities which are of bearing upon the development of food production and of the food-processing industry. In the past few years, about 50 Yugoslav top experts and consultants have been actively working in this area, while about 100 government scholarship holders have attended various training and specialization courses in Yugoslavia. In addition, several thousand developing country nationals are studying at Yugoslav agricultural faculties at their own expense.

A particularly successful example of scientific and technical co-operation in this field is the specialized courses organized for personnel from developing countries in Yugoslavia in co-operation with the Dutch government. As part of the annual programmes which have been conducted in co-operation with the Dutch side since 1973 on a regular basis, of a total of 8 to 9 courses in various fields, 4 to 5 courses lasting 2 to 4 months are held precisely in the field of agricultural production and processing (The Promotion of Maize Production and Processing; Irrigation of Agricultural Crops; Water Management Engineering and Fisheries, and, earlier, also courses on the production and processing of sunflower seeds). These courses are conducted in the English language at leading Yugoslav institutes with the participation of top Yugoslav experts, and, in some cases, of lecturers from the Netherlands or from the developing countries themselves; in this field alone, there are 80 to 100 trainees attending courses every year from over 50 developing countries.

In addition to the mentioned directions and frameworks of co-operation which are pursued at the inter-governmental level, a number of Yugoslav organizations executing capital projects and other works in the developing countries or engaged in direct business and technological co-operation devote a considerable part of their activity to the provision of professional

assistance and personnel training in the developing countries where the projects in question are being carried out. Today, several thousand Yugoslav agricultural experts and technicians are working in this line in quite a few developing countries, and their contribution to the training of local personnel also constitutes an important element of technical co-operation.

It is a fact that the application of scientific results in the development of Yugoslavia's agriculture and its food-processing industry, as well as the co-operation Yugoslavia pursues in this field internationally, have been achieved in conjunction with the development of appropriate production, organizational and management models in this field. Particularly, this has been accomplished through the involvement of agro-industrial entities such as agro-combines, which as a rule have research and development, production and processing activities, and in a given number of cases, that of marketing also.

Hence, it was only natural that in co-operation with UNIDO, in 1975, the Joint UNIDO-Yugoslav Programme of International Co-operation for the Development of Agro-Industry in Developing Countries was established. Under this programme, which is fixed anew every two years jointly between UNIDO and the Yugoslav government, many activities have been carried out benefitting the developing countries, aimed at:

- the preparation of studies and expertise;
- the organization of promotional activities for the establishment of individual or integrated agro-industrial enterprises;
- deliveries of equipment;
- assistance in transferring know-how and technology;
- the training of management personnel in the food-processing and leather industries;
- the provision of other technical assistance and consulting services.

This programme is implemented through the Joint UNIDO-Yugoslavia Centre, engaging several Yugoslav agro-industrial combines, R+D institutions, consulting organizations, equipment manufacturers, as well as a large number of experts. Since the establishment of this programme, about 350 participants from 78 developing countries have taken part in various programmes carried out in Yugoslavia, while 17 Yugoslav experts have been engaged in various activities in the developing countries.

In addition to the above activities within bilateral and overall co-operation, it should be mentioned that in this area, Yugoslavia participates both financially and with its experts in numerous multilateral technical assistance activities of the UNDP, the UN specialized agencies and other development programmes and agencies of the UN system, the work of which focuses on rendering technical assistance to developing countries.

4. CONCLUSION

Yugoslavia devotes great attention to developing and promoting its relations with developing countries. With a view to encouraging this co-operation, and bearing in mind the fact that this particular sector is of vital importance to the majority of the developing countries, in December 1983 the Assembly of the Socialist Federal Republic of Yugoslavia adopted a Resolution on strengthening economic co-operation between Yugoslavia and the developing countries, with a very prominent place accorded to co-operation in the field of agriculture in general, and to agro-industry in particular.

ANNEX I

LIST OF YUGOSLAV CAPABILITIES FOR CO-OPERATION WITH DEVELOPING COUNTRIES
IN THE AGRO-FOOD INDUSTRY

1. CEREAL PRODUCTION AND PROCESSING

- Maize and wheat breeding and production
- Drying and storage of cereals
- Mills for wheat, maize and other cereals
- Bakeries (stationary and movable)
- Production of biscuits, swiss rolls, etc.
- Instant products of cereals.

2. ANIMAL HUSBANDRY AND MEAT PROCESSING LINE

- Cattle, pig, sheep and poultry
 - Farm establishment, including equipment
 - Animal breeding
- Processing
- Meat processing
 - Slaughterhouses for cattle, calves, pigs, sheep and poultry
 - Storing chilling and freezing of meat
 - Canning
 - Meat products (sausages, salami, pastes, etc.)
 - Meat extracts and concentrated meat
- Egg production and processing
 - Sorting, packaging, storing and chilling of eggs
 - Egg powder

3. DAIRY FARMING AND MILK PROCESSING

- Dairy farms
 - Farm establishment
 - Dairy cow breeding
 - Milk production and storing
- Milk processing
 - Consume dairies
 - Fermented milk
 - Powdered milk
 - Butter
 - Cheese
 - Casein, caseinates
 - Whey processing

4. FRUIT AND VEGETABLE PRODUCTION AND PROCESSING

VEGETABLES

- Vegetable production (breeding, cultivation, harvesting)
- Vegetable processing
 - Dehydration of vegetables
 - Frozen vegetables
 - Canned, pasteurised and vegetable marinades
 - Tomato processing (juice, concentrate)
 - Sauces (Worcester and others)
 - Potato processing (fried, mashed, instant)

FRUITS

- Establishment and running of fruit farms
- Fruit processing
 - Packing and coldstoring of fresh fruits
 - Frozen fruits and pulpy fruit juices
 - Pasteurised fruit pulps and juices, including concentrated juices
 - Fruit syrups
 - Compots and fruit salads
 - Jams, marmelades and fruit gels
 - Citrus and other fruit-based soft drinks
 - Fruit distillates

5. GRAPE AND WINE PRODUCTION

- Establishment of vineyards
- Production of wine

6. PRODUCTION OF VINEGAR

7. BREWERIES

- Production of barley
- Malt production
- Beer production

8. SUGAR PRODUCTION

- Sugar beet production
- Beet and cane sugar production
- Molasses processing (alcohol, fodder and bakers' yeast)

9. OILSEED PRODUCTION AND PROCESSING

- Oilseed (sunflower, etc.), breeding and cultivation
- Processing
 - Extraction and refining of oils
 - Vegetable fats and shortenings
 - Margarine and mayonnaise

10. ANIMAL FEED FACTORIES

11. BABY FOOD

- On fruit basis
- On fruit, vegetables and meat mixture basis
- Baby food on cereal basis

12. PRODUCTION OF SOUP CONCENTRATES AND FOOD ADDITIVES

- Dehydrated soup
- Condensed soup
- Food additives

13. CONFECTIONARY

- Bonbons
- Chocolate
- Chewing gum

14. POWDER PRODUCTS

- Drink powder (extracts of tea, coffee, cocoa)
- Ice-cream powder
- Baking additives

15. SPICES, TEAS AND MEDICINAL PLANTS

- Preparation and packing of spices and spice mixtures
- Preparation and packing tea mixtures
- Ultrasound extraction of teas and medicinal plants and concentrates of obtained extracts (for instant tea, cosmetic, drugs, etc.)
- Agglomerated extracts of teas and medicinal plants

16. BEE PRODUCTS

- Bee keeping and honey production
- Production of hives and all other equipment and accessories for bee breeding
- Honey processing into bee products with curative effects

17. STORING, HANDLING, CONDITIONING, MARKETING AND DISTRIBUTION

- Different type of storage possibilities
- Transportation and handling equipment
- Cold stores and cooling systems
- Establishment and equipment of distribution and marketing centres.

