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International Consultation on
Agro-Industrial Development

Belgrade, Yugoslavia, 13 - 18 May 1974

Report on

INTERNATIONAL CONSULTATION ON
AGRO-INDUSTRIAL DEVELOPMENT 1/

held in Belgrade, Yugoslavia,
from 13 to 18 May 1974.]

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PREFACE

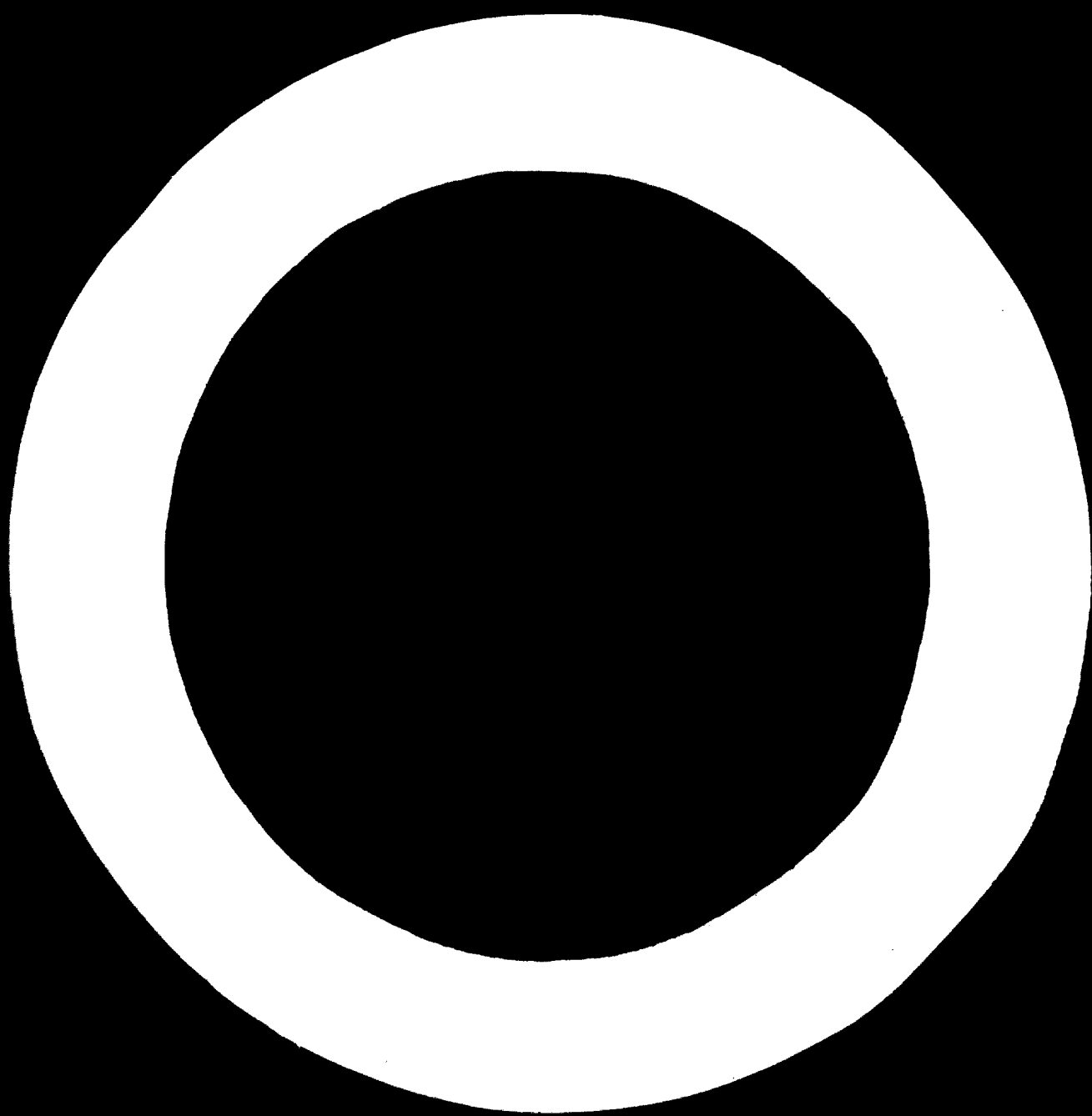
The International Consultation on Agro-industrial Development was held in Belgrade, Yugoslavia, from 13 to 18 May 1974. The United Nations Industrial Development Organization (UNIDO) and the Government of Yugoslavia jointly organized this project to discuss the problems associated with agro-industrial development. Discussions of the technological and economic aspects of agro-industry, including the promotion of co-operation between developing countries, and the identification of policies best suited to conditions in the developing countries were complemented by visits to two agro-industrial combines, IPK Zrenjanin and PK Beograd, and a tour of the International Agricultural Fair at Novi Sad.

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INTRODUCTION

The Consultation was intended to bring together participants from developing and developed countries to discuss the range of problems associated with agro-industrial development. The lecturers invited were internationally acknowledged agro-industrial experts, managers of agro-industrial combines, equipment manufacturers or persons closely associated with agro-industrial planning and research. Participants nominated by the Governments of developing countries were persons occupying managerial policy making positions in the agro-industrial sector in their own countries. Observers who met the same qualifications also attended and actively participated in the Consultation.

In an address of welcome delivered by M. Mautner on behalf of the Executive Director of UNIDO, attention was drawn to the benefits to be derived from the integration of agricultural production and industrial processing at a time when countries were becoming increasingly conscious of the gravity of the problems associated with the food shortage, explosive population growth and energy constraints. Furthermore, in view of the similarity of both economic and climatic conditions in many developing countries, mutual technical assistance could be conducive to the establishment and development of viable agro-industries, the mood of co-operation also being enhanced through effective technical assistance from developed countries.

An address of welcome was given by B. Dimitrijević, Federal Secretary for Economic Affairs, who emphasized the importance of agro-industry as a significant factor in the economic development of many countries. He added a cautionary note and drew attention to the need for careful consideration before taking any investment decision. Following the Consultation and the common programme for international co-operation initiated by the Government of Yugoslavia and UNIDO to promote agriculture-based industries, he looked forward to interesting developments

in the agro-industrial sector to the benefit of all developing countries concerned.

In his inaugural speech, A.S. Bam, UNDP Resident Representative in Yugoslavia, indicated the need for agriculture to adapt to the tempo of contemporary technology and the current rate of productivity in industry. Yugoslavia's pioneering role in the agro-industrial sector could be profitably emulated by other developing countries under the careful guidance of the international organizations and other agencies.

The Consultation was attended by twenty participants from the following countries: Brazil, Bulgaria, Burundi, Colombia, Egypt, Greece, India, Iran, Iraq, Liberia, Libyan Arab Republic, Madagascar, Mexico, Morocco, Nigeria, Peru, Sudan, Tunisia and Uruguay.

In addition, 153 observers came from the following countries: Denmark, France, Federal Republic of Germany, India, Iran, Liberia, Mexico, Morocco, Netherlands, Spain, Sweden, United States of America, and Yugoslavia.

The lecturers came from Austria, Belgium, Denmark, Israel, Netherlands, Sweden, Union of Soviet Socialist Republics, United Kingdom of Great Britain and Northern Ireland, United States of America, and Yugoslavia.

The following persons acted as chairmen of the technical sessions:

B.H. Hallström	(Sweden)
D.W. Johnson	(USA)
S. Krašovec	(Yugoslavia)
M. Mautner	(UNIDO)
B. Milosavljević	(Yugoslavia)
J.A.R. Tainsh	(UK)

W. Moreira-Dias (UNIDO) served as consultation co-ordinator, assisted by B. Milosavljević (Yugoslavia) and K. Miljković (Yugoslavia). D.W. Johnson (USA) acted as Rapporteur and P. Lillie (UNIDO) as Technical Secretary.

UNIDO commissioned 23 papers (see Annex I) dealing with topics related to agenda items which were distributed to the participants.

I. AGRO-INDUSTRIAL DEVELOPMENT - PENINGS

The Consultation took note of a paper prepared by the UNIDO secretariat entitled "Integrated Agro-Industries' Contribution and the Present World Food Shortage" which was presented by M. Mautner. The paper drew attention to the fact that a close correlation between marketing, industrial processing and agricultural production was essential to the success of agro-industrialisation which was based on the principle of producing marketable goods, using minimum inputs to obtain maximum outputs.

In the ensuing discussion the Seminar dwelt at length on the fact that the joint-venture approach differed from country to country and that local governmental policies were determining factors as to the form of co-operation finally adopted. Hence, it was explained that UNIDO did not lay down hard-and-fast rules for joint ventures, but preferred to retain flexibility commensurate with local conditions and requirements.

The developing countries were advised to ensure in advance that any assistance offered was in fact appropriate to the task involved and not obsolete, as had unfortunately been the case all too frequently in the past. UNIDO was equipped to provide such advisory services upon request from the respective governments, and had assisted in several instances in the agro-industrial sector.

One delegate drew specific attention to the need to stabilize prices in the particular interests of the developing countries which had fallen victim to the rapidly escalating costs of raw materials essential to totally integrated agro-industrial systems.

The Consultation also considered the paper presented by E. Becker-Boost entitled "The World Bank and the Financing of Agro-industrial Projects" in which the speaker outlined IBRD's role in furthering rapid agro-industrialisation in developing countries with particular reference to the countries represented at the meeting.

In the course of the discussion that followed, one delegate asked whether the IBRD attached greater importance to industrial development

as opposed to agro-industrial development, and was assured that no such particular preference was shown, the main criterion for investment on the part of the World Bank or its affiliates being the suitability of the proposal submitted.

It was also pointed out that insofar as agro-industrial development was concerned, governments hitherto had failed to take full advantage of the ample funds available. In the opinion of the speaker, there were funds of the order of three to four billion dollars available for the servicing of projects submitted by governments.

II. AGRO-INDUSTRIAL ENGINEERING TECHNIQUES

The Consultation discussed the paper presented by A.D. Stutchbury entitled "Contribution of Packaging to Marketing" in which the author described the function of packaging in terms of protection and sales promotion. He warned against underestimating the role of packaging as a vital marketing factor and described the task of pack creation.

In the ensuing discussion the question of forecasting prices for packaging was raised, the reply being that in view of the rapidly rising prices for tin and other packaging materials, such as plastics and glass, it would be very difficult to project prices even three months in advance.

Practical examples were also quoted of how re-vamped packages and labels could achieve appreciable sales impact. Furthermore, it was shown that the initial high costs a new packaging programme entailed were adequately re-couped on account of the higher market price that could be secured for better packaged goods.

At the same time, it was pointed out by several participants that in view of the rapidly escalating raw material costs, industry in all sectors was endeavouring to identify cheaper technological solutions.

Participants considered the paper entitled "Fresh Milk Preservation Techniques" presented by B. Hallström, in which particular attention was drawn to the benefits of ultra-high temperature treatment of milk and the

use of flexible containers. The fact that the storage of UHT milk did not require a cold chain made it an interesting proposition for the developing countries provided strictly aseptic processing conditions could be maintained.

It was remarked that there was little difference in the nutritional value of milk following direct or indirect heating, though expert opinion was known to differ on this point. It was also pointed out that the ultra-high temperature treatment of milk did involve a slight change in flavour which might encounter consumer resistance in areas with regular milk-drinking habits. However, in areas not accustomed to drinking milk in large quantities or in areas where milk was mainly used for cooking purposes, little difference in consumption figures was to be noticed.

Note was taken of the paper prepared by J. Hardenmark entitled "Fruit Juice Processing" in which the author stressed the need to ensure optimum engineering and economic solutions in view of the considerable investment fruit processing involved. Advantage should also be taken of the market demand for quality fruit products, and production quality was best ensured by efficient processing equipment which provided for continuity of operation, retention of natural properties, rapid change-over, simple maintenance and high sanitary standards.

In the ensuing discussion the author qualified the remark he had made in his paper about the market's inability to absorb all the additional fruit that would become available, as this had been misconstrued. He pointed out that given effective processing with proper equipment permitting the production of high-quality juice-concentrate products, there were adequate export opportunities for the utilization of any surplus produce.

It was also stressed that in this particular field, investment costs per ton could not be generalized as the ultimate figure depended not only on the size of the plant, but also on material costs which were unstable under present inflationary conditions.

The Consultation considered the paper entitled "Modern sterilization Methods in Agro-Industry" presented by Mr. E. De Bruyn, in which the author

outlined a series of sterilization processes, including hydrostatic and agitation systems. He also described the construction and installation methods used for the erection of large-scale sterilization units which, under given circumstances, could be adapted to a variety of conditions prevalent in developing countries. However, in the interests of efficiency and product quality, it was felt that the systems should be fully automated.

In the ensuing discussion, the author drew attention to the fact that agitated systems as compared with non-agitated sterilization processes offered better flavour and colour in such vegetables as peas or in canned convenience meals. However, in view of the short time such sterilization processes involved, proper care should be taken to ensure that the product was fully cooked.

In the paper by K. Waltenberg entitled "Co-operative Slaughterhouse and Food Industry in Kristianstad", the author described in detail the raw material procurement and processing operations in a co-operative undertaking. The success of such operations was shown to be contingent upon high standards of quality control, good logistics and a proper awareness of market demand.

In the ensuing discussion, it was shown that surplus fat could be profitably utilized in an integrated system, one example being sausage production. It was also in the effective utilization of by-products that an appreciable profit could be obtained as evidenced by the success of the Swedish model.

In his paper entitled "Agro-industrial Engineering Techniques", with particular reference to the Sugar Mill at the Agro-industrial Combine 'Servo Mihalj', M. Popadić described the difficulties encountered in connexion with the improvement of harvesting and processing techniques. Reconstruction on this scale entailed systematic co-ordination on both technical and economic levels, and particular significance was attached to training as the acquisition of new skills was as important as that of new processing technologies.

In the ensuing discussion, it was stressed that mechanization at both field and plant level offered appreciable benefits to both producers and processors. In Yugoslavia, the trend away from fixed sugar prices to those closer to world market prices likewise benefited both the producer and processor.

With improved local infrastructure and larger capacity processing plants, sugar mills could now service areas well in excess of the customary radius of thirty kilometres, the most important pre-requisite being a good road-network.

It was pointed out that, in Yugoslavia, payments for sugar beet were the same regardless of whether the produce emanated from combines or private farms.

The Consultation took note of the paper entitled "Soybean Production, Processing and Utilization in a Modern Agro-industrial Economy" presented by D.W. Johnson, in which the author discussed the production of soybeans in the United States and selected countries of Eastern Europe over the past few years. The paper covered the use of soy protein products and the growth of the market, primarily in the United States, in the light of recent price developments.

Questions were raised with respect to the comparison of sunflower and soy protein, it being pointed out that on the basis of their amino-acid compositions, soy and sunflower protein should complement each other in animal feed use. It was also indicated that cottonseed was a good protein source; however, for want of a solution to the gossypol problem, its use would be limited.

In the course of the discussion, it was stated that groundnut protein could not be used as a substitute for soy protein on account of its poor amino acid balance, although it was used in animal feed.

The major problem with sunflower protein for edible use was that of colour which gave rise to consumer resistance, although in terms of toxic values, there were less problems with sunflower than with any other protein.

Participants also considered a paper prepared and presented by L. Zorin entitled "Mechanization and Automation of Industrial Feedstuff Production Processes" in which the author identified the basic problem areas in this sector and the manner in which automatic process control could be used to maintain effective quality.

The above presentation was linked with the paper entitled "Agro-Industry and Feedstuffs Production" prepared by A.W. Burt in which the author stressed that agro-industrial development had to be planned with proper regard for its agricultural base. The management of large feed-production facilities involved the complete integration of raw material acquisition, feed formulation, manufacture, and supply to animal feeding systems, and the application of least-cost formulation systems to the sector was described.

In the ensuing discussion the need to locate other sources of feed material was stressed, and the Consultation's attention was drawn to the nutritional value of bagasse and rice straw which, however, posed certain processing problems. It was agreed that they were best suited as roughage in cattle feed.

It was also mentioned that work had been carried out in the Soviet Union on the utilization of both deciduous and coniferous trees for feedstuff purposes, particularly in view of their vitamin values.

It was generally agreed that in the feedstuff production sector, as in all other sectors, an integrated agro-industrial system had to be well balanced in its conception, with particular emphasis on careful management in each sub-unit. Specially processed animal excrements were shown to be another feed source, though especial attention had to be paid to reliable systems of processing to avoid the transmittal of disease. It was felt that acorns could be a good potential feed source; however, further investigation as to their nutritional value and economic benefit was deemed necessary.

In the United Kingdom, an integrated computer system had been successfully used for animal management, serving a large number of farms, whereby yields could be monitored and projections made based on the feeding requirements of individual animals.

Seaweed meal had been used in the United Kingdom following the extraction of alginates, carrageenan and other components. However, adequate information was not available at present.

The economics of alfalfa dehydration were also discussed, it being agreed that a multitude of factors were involved in the determination of true profitability in comparison with soy and other vegetable protein sources.

In one Latin American country where grazing had been the traditional form of feeding, the lack of a well-organized feedstuff industry had hampered the development of animal production. Thus, it was essential that the developing countries establish feed industries, in particular where beef raising was concerned, if they were to maintain production.

In this respect, the developing countries' attention was directed towards the possible combination of green sugar-cane and urea as a feed material.

The paper entitled "Facilities for Handling and Storage of Horticultural Produce" prepared by A. Miko was also distributed during the Consultation. The paper reviewed the status of current handling and storage facilities for horticultural produce, including packing houses for fresh fruit and cold storage units. The planning and organization of centralized facilities were described, and details given of grading and packing equipment.

IV. PLANNING OF AGRO-INDUSTRIAL DEVELOPMENT

In the paper entitled "Substantial Structure as a Criterion for Agro-industrial Development" presented by S. Miri6, the author described the basic features of horizontal and vertical integration. An analysis was also given of the pre-requisites for integration and the resultant advantages, provided proper care was taken to ensure that the degree of integration was appropriate to the situation.

In the discussion that followed, it was recognized that pure horizontal integration was applicable solely to the first stages of agro-industrial development, whereafter evolution was a combination of both horizontal and vertical integration commensurate with the industrial levels attained.

A question was raised as to the starting point when planning a new agro-industrial organization, it being felt that the issue of raw material availability should also be fully considered.

It was also agreed that the higher production achieved on the socially owned farms was directly attributable to their better organization and higher degree of mechanization which led to greater over-all efficiency.

The Consultation considered the paper prepared by T. Patkovski entitled "Long-range Agro-industrial Development Planning, with particular reference to the Agro-industrial Combine 'Pelagonija'", in which the author described the development of the combine and its position in relation to macro-economic considerations. The various long-term planning procedures were outlined and attention drawn to the shift thus brought about from subsistence farming to the specialized production of marketable goods.

The possibility of establishing fish-farms on non-arable land was discussed as good returns had been obtained on ponds of 180 hectares with a gross annual production of 120 tons of fish per annum.

Milk production was shown to have been increased by means of organized feedstuff production, improved breeds and training people in good dairy practices. The acquisition of skills was also essential to the success of any agro-industrial activity as had been evidenced by the growth of the sugar-beet sector in Macedonia, the incentive being the better returns the farmers enjoyed after being taught new agro-industrial practices. Education, however, was a time-consuming factor, and profitability as an effective incentive held true for both public and private sectors, success being assured through the introduction of equipment, provision of seed and arrangement of loans for the private producers by the agro-industrial combines they supplied.

Another cardinal feature of agro-industrial combines was the fact that losses suffered in one unit could be absorbed or offset through profit in other sectors.

In their paper entitled "Application of Operational Research Methods to Agriculture and the Food-processing Industry", L. Todoric and M. Cvetkovic described how the growing need for highly trained management

could be effectively met, particularly by training in modern planning and programming methodologies. The paper outlined various linear programming and simulation methods and described the work carried out in this field by the Federal Centre for Agricultural and Industrial Managers Training which had been established in Yugoslavia in 1958.

In the ensuing discussion, it was explained that the Centre had achieved self-sufficiency at an early stage and that applicants were accepted from all over the world, courses given at the Centre being adapted to the particular needs of the participants.

It was also reported that the Centre had designed linear models for specific areas in Yugoslavia which had enjoyed appreciable success, and similar models were being developed for countries abroad.

In the paper entitled "Management in Agro-Industry, with particular Reference to the Agricultural Combine 'Beograd'", I. Radović and M. Rohalj described the functional structure and basic characteristics of management in agro-industrial combines, with particular emphasis on relations with outside producers. The development of more sophisticated information systems was also described as they were considered essential to effective production and processing control.

In connexion with the above paper, B. Milovanović and N. Milutinović presented a paper entitled "Higher Forms of Agro-Industrial Integration with Particular Reference to the Agro-industrial Combine 'Sirmium'", in which the authors described the various agro-industrial associations in Yugoslavia, ranging from the basic units within the combines to bodies enjoying federal status. The benefits to be derived from large-scale integration were indicated, particularly in the development and sales sectors.

In the ensuing discussion of both papers, it was agreed that the basic motivation behind the establishment of agro-industrial combines had been the desire to take full advantage of rapidly expanding agricultural production based on better market opportunities and greater profitability.

Agro-industrial combines did not enjoy monopolies in the areas in which they were established, but co-operated with other groups in such fields as exports, if this proved to be more advantageous.

It was explained that certain combines in Yugoslavia had established their own large research stations, whereas others preferred to co-operate with independent research institutes.

It was stressed that production planning was primarily governed by market trends in keeping with basic guidelines, and combines did in fact compete against each other for the market.

The Consultation considered a paper entitled "Theory and Practice of Long-Range Agro-Industrial Development, with Particular Reference to Fruits and Vegetables" presented by A.G. Watson, in which the author drew attention to the fact that an agro-industrial system could only be successfully established if introduced in its entirety and sustained by sufficient flexible technology to ensure that viable enduring links were made between the system being installed and the agricultural, economic and social environment into which the system was being introduced. The phased introduction of a systems approach was described on the basis of two recent projects in Yugoslavia and Bulgaria, and examples given of the problems to be encountered in the establishment of agro-industries.

In the discussion that followed, it was pointed out that when planning large-scale operations, particular attention should be given to the totality of the integrated system from the initial preparation of the land right through to the final production of a processed product, since the lack of such basic items as bulk-handling equipment had been known to disrupt processing completely.

Contractual negotiations, it was stressed, should not be hurried as careful preparation of the project was of cardinal importance to its subsequent success.

Growing problems involving crust formation in the soil were also discussed, and a series of solutions suggested.

It was reported that UNIDO had been instrumental in initiating an agro-industrial project in Bulgaria which could serve as a good model for future projects of a similar nature in adjoining countries or elsewhere.

Once again, it was stressed that production planning was based on marketability and projected profitability, and the final selection was restricted to those crops which could be grown and handled satisfactorily in the respective areas.

In his paper entitled "A National Sugar Industry - to Import and Refine, or to Grow and Manufacture", J.A.R. Tainsh indicated the benefits to be gained from a national sugar industry based on locally grown raw materials. The secondary benefits, which really amounted to increased secondary employment, were reported to be about three times as much per £1 million of investment in a sugar industry processing indigenous materials, as for one which imported its raw materials. The employment generation factor of an integrated capital-intensive sugar plant was shown to be some 2.5 times greater than that of a so-called "labour-intensive" small-scale plant. It was shown that these secondary benefits constituted an important investment criterion, and equally important was accounting control throughout the industry from raw material supply through processing to the sale of the final product.

The above paper was followed by a paper entitled "The Indonesian Seeds Industry Project", prepared by K. van der Meer (ILACO^{1/}) and presented by C. Overwater, describing the establishment of a National Seeds Corporation and the setting up of a research sector to ensure an adequate flow of high-yielding varieties. Good quality seed was essential to higher crop yields and could thus be seen as a direct contribution to improved farmer income and increased agro-industrialization.

In the ensuing discussion of both papers, it was generally confirmed that large-scale business benefited not only the immediate company concerned, but also the area as a whole. Whereas the large-scale production of gari was technologically feasible in one African country and a pilot plant had been set up, the price of the final product had been prohibitive for current local incomes. However, it was agreed that were the plant to be integrated with a cassava pelleting process which could sell to the export markets in view of the current demand for feedstuff materials, the

^{1/} Internationaal Landbouwadvisiebureau BV, Arnhem, Netherlands.

concomitant employment generation factor would create sufficient income to permit the local population not only to buy the ready processed gari, but also to avail themselves of other services, thus compounding purchasing power throughout the area.

It was felt that raw sugar could best be refined in the country of production, particularly in view of the energy situation as bagasse could be used as a fuel. A plant designed to use fossil fuel would be more expensive than one designed to use bagasse.

V. AGRO-INDUSTRY AND RURAL DEVELOPMENT

A paper entitled "Supply of Raw Materials in Various Agro-industrial Systems" was presented by H.J. Kordik, in which the author emphasized the need to establish continuity of raw material supplies. Various methods of achieving this aim were indicated, ranging from ranching associations to joint ventures. The importance of supporting services was also underscored, as was the need for realistic farmer incentives.

In the ensuing discussion, the author reminded the participants that some agro-industrial plants were best located in the centre of the growing area, although it should not be forgotten that not only the distances raw materials had to be transported but also those covered by the finished products were essential determining factors which should not be underestimated.

Co-operation with the small farmer was felt by some participants to offer certain advantages in terms of effective resource utilization as opposed to the large-scale operations. However, it was essential that the farmer be interested in modern methods, if any benefit was to be gained. Hence, discussion of the farmer's wishes as well as his capabilities was an important pre-requisite.

In one African country, rural development had taken on two forms: farming villages and block farming systems. In the first instance, farmers dwelt in centrally located villages and worked their scattered holdings with a variety of crops from a focal point. In the second instance, extensive homogenous blocks of particular crops were tended by several farmers, each of whom had his own plot or strip within the block. This latter system

facilitated the question of fertilization, spraying and harvesting for the farmers concerned.

B. Radovanović presented a paper entitled "Farmers' Co-operatives as a Rural Development Factor" in which he described the agrarian policy of Yugoslavia, its structure, capacity and production capabilities. Co-operation in the production, processing and marketing sectors was found to be effective and combined with worker management offered an efficient means of rural development.

In the ensuing discussion, contracts between the co-operatives and the private farmers were shown to offer the farmers the security they sought and the co-operatives the stability they needed. Furthermore, co-operatives were flexible in their commercial operations: they could be members of a larger combine, or remain independent and co-operate with one or more combines in certain fields.

On the socially owned farms, which, as was repeatedly stressed, constituted no more than fifteen per cent of the total farmed area in Yugoslavia, the management was worker-controlled and only employees working on these farms had the right to participate in their total management. Furthermore, salary scales in agro-industrial combines were determined by the workers themselves.

Private farmers who co-operated in the production of certain products could sell others on the open market. However, small private farms - as had been observed in the United States and elsewhere - were finding operation as a small-scale unit unprofitable and the trend towards amalgamation was appreciable.

The Consultation considered the paper entitled "Agro-Industry and Rural Development (with Particular Reference to the Agro-industrial Combine 'Srbija - 10 October')", presented by S. Vasić, in which the author presented a synoptical description of the combine's contribution to regional agricultural development. Following co-operation with the combine, the private farmers had experienced a sharp rise in income and an improvement in living standards not enjoyed by the small number of farmers remaining outside the scheme.

In the following discussion, it was shown that the main problem in export markets was the difficulty of achieving adequate impact which was often best done on a broader basis involving several combines to facilitate collective bargaining, though certain individual combines did operate on an individual basis.

It was felt that in the case of cattle breeding, long-term contracts were essential in view of the time needed to achieve true viability of the project.

In a paper entitled "Agro-Industry and the Co-operative System (with Particular Reference to the Co-operative at Bačka Topola)", A. Burčar J. Puhalak and J. Laci explained the various co-operative schemes practised in respect of pig-breeding and poultry production. The establishment of feedstuff plants and other services was described, together with the social changes it had introduced.

It was noted with interest that certain co-operatives did not own any land of their own, but solely served the private farms in their capacity as suppliers of equipment, know-how, ploughing systems and other contractual services. In the course of time, however, such a co-operative might socialize the farms it served to form a new combine.

In answer to a series of questions, the role of the socially-owned combine in Yugoslavia and its worker-controlled management was elucidated at length. To all intents and purposes, there were neither employers or employees, nor was there any state intervention. Within the micro-environment of the combine, all planning decisions were contingent upon the workers' approval. The workers decided upon any new investments to be made and the procurement of equipment and machinery; they were also instrumental in the division and distribution of salaries which were related to pre-determined performance figures. Furthermore, financial balance was maintained through comparison with combines in related fields.

III. CO-OPERATION BETWEEN DEVELOPED AND DEVELOPING COUNTRIES IN THE FIELD OF AGRO-INDUSTRY

In this paper entitled "Co-operation with Developed Countries in the Field of Agro-Industrial Development", B. Milosavljević analysed economic development in the developed and developing countries, showing that agro-industrialization was a development vehicle appropriate to developing countries. Agro-industries were shown to be essential supply sources to both urban areas and processing industries, as well as a major revitalization factor in rural environments, as had been evidenced in the projects initiated by the Yugoslav authorities at home and abroad.

Attention was also drawn to the Yugoslav fund which was used to finance the export of equipment and technical equipment to the developing countries, fifty or sixty per cent of which was available in the form of loans.

One participant drew attention to the inherent dynamism of agro-industry which could contribute to the galvanization of the industrial structures of the developing countries.

The Consultation's attention was drawn to the Centre for Agro-Industrial Development which was to be initiated by UNIDO and the Government of Yugoslavia in the very near future, as this would contribute to the acceleration of agro-industrialization in a number of developing countries.

Another participant drew attention to the lack of processing and marketing information related to international requirements which inevitably resulted in the developing countries not knowing the direction they should follow in their production programmes. It was felt that co-ordinated international action would help to alleviate this regrettable shortcoming, and overcome the paucity of information and the resultant lack of marketing outlets.

It was also pointed out that in joint ventures every attempt should be made to guarantee the supplier of equipment or know-how a reasonable return of profit for external transfer, possibly in the form of export products based on world market prices. Furthermore, any joint venture should be in harmony with local legislation.

A plea was also entered in favour of removing all tax obstacles placed on exports and at the same time every endeavour should be made to reduce the influence of the multinational companies. However, export liberalization also assumed that any products to be exported were of an acceptable quality and met overseas market requirements.

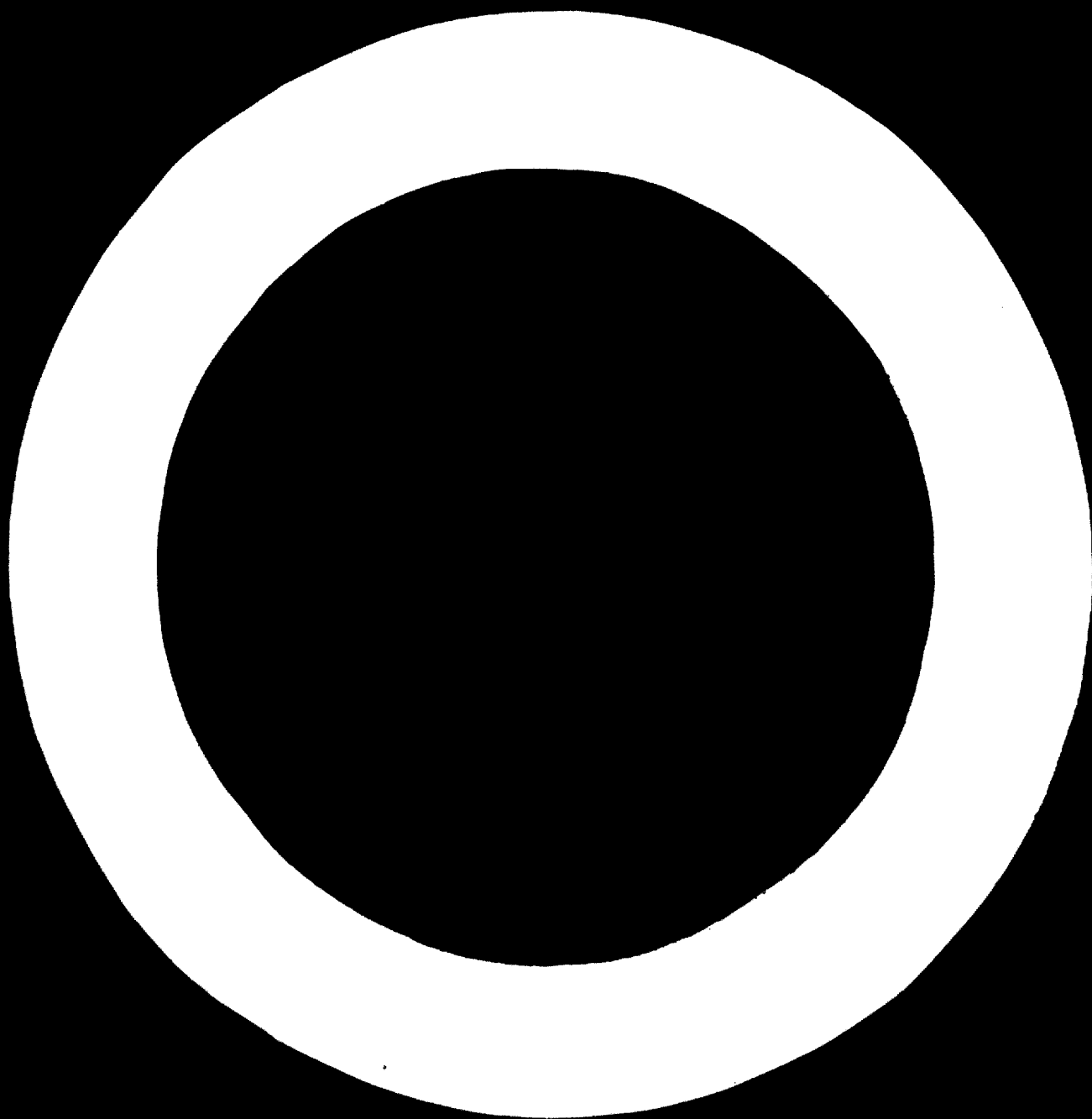
Yugoslavia's role as a supplier of technical assistance through the vehicle of various United Nations agencies was highlighted: training programmes and technical assistance schemes had been developed and were available to developing countries upon request.

One participant added a cautionary note and indicated that the developing countries might soon be competing with each other in the field of agro-industries to their own detriment. It was thus agreed that every attempt should be made to co-ordinate the export endeavours of the developing countries and establish an international forum for the regular discussion of the problems they faced. A second participant added that it would perhaps be more meaningful if such meetings were held on an annual basis in a developing country where conditions were closer to the situations discussed in the papers.

Another participant drew attention to the woefully inadequate field yields and expressed the hope that the advanced countries would come forward to help improve the output per hectare so as to ensure the degree of raw material availability necessary for large-scale processing. Meaningful co-operation should be directed towards rapid agro-industrialization, facilitated through the supply of improved seeds, the effective transfer of appropriate technology, the dissemination of the necessary fertilizers and chemicals, as well as the acquisition of proper skills. Well-conceived agro-industrial structures offered a tangible means of development to the developing countries.

One participant spoke of the need for the African states to pool their resources and stated that imagination, individual initiative and government support were needed, particularly in the fields of research and quality control.

Another participant emphasized that developing countries should refrain from copying systems that had been developed for use elsewhere. The development of technologies and systems appropriate to local conditions was the important factor, every care being taken to respect the social and political situation in each country.



ANNEX I

LIST OF DOCUMENTS

<u>Number</u>	<u>Title</u>	<u>Author</u>
ID/WG.171/1	Facilities for handling and storage of horticultural produce	A. Niko
ID/WG.171/2/Rev.1	Provisional agenda and programme of work	
ID/WG.171/3	Supply of raw materials in various agro-industrial systems	H.J. Kordik
ID/WG.171/4	Agro-industry and rural development (with particular reference to the agro-industrial combine "Srbija - 10 October")	S. Vasić
ID/WG.171/5	Agro-industrial engineering techniques (with particular reference to the sugar mill at the agro-industrial combine "Servo Mihalj")	M. Popadić
ID/WG.171/6	Co-operation with developed countries in the field of agro-industrial development, with particular reference to Yugoslavia	B. Milosavljević
ID/WG.171/7	Integrated agro-industries contribution and the present world food shortage	Secretariat of UNIDO
ID/WG.171/8	Agro-industry and the co-operative system (with particular reference to the co-operative at Bačka Topola)	A. Burčar, J. Puhalak and J. Laci
ID/WG.171/9	Higher forms of agro-industrial integration, (with particular reference to the agro-industrial combine "Sirmium")	B. Milovanović and M. Milutinović
ID/WG.171/10	Management in agro-industry (with particular reference to the agricultural combine "Beograd")	I. Radović and M. Rohalj
ID/WG.171/11	Substantial structure as a criterion for agro-industrial development	S. Mirić
ID/WG.171/12	Long-range agro-industrial development planning (with particular reference to the agro-industrial combine "Pelagonija")	T. Petkovski
ID/WG.171/13	A national sugar industry - to import and refine or to grow and manufacture	J.A.R. Tainsh
ID/WG.171/14	Fresh milk preservation techniques	B.H. Hallström
ID/WG.171/15	The Indonesian seeds industry project	ILACO
ID/WG.171/16	Fruit juice processing	J.H. Hardenmark
ID/WG.171/17	Application of operational research methods to agriculture and the food processing industry	M. Cvetković and L. Todorčić

<u>Number</u>	<u>Title</u>	<u>Author</u>
ID/WG.171/18	Co-operative slaughterhouse and food-industry in Kristianstad, Sweden	K. Waltenberg
ID/WG.171/19	Agro-industry and feedstuffs production	A.W.A. Burt
ID/WG.171/20	Contribution of packaging to marketing	A.D. Stutchbury
ID/WG.171/21	Farmer's co-operatives as a rural development factor	B. Radovanovic
ID/WG.171/22	Mechanization and automation of industrial feedstuff production processes	L. Zorin
ID/WG.171/23	Theory and practice of long-range agro-industrial development, with particular reference to fruits and vegetables	A.G. Watson
ID/WG.171/25	Soybean production, processing and utilisation in a modern agro-industrial economy.	D.W. Johnson

ANNEX II

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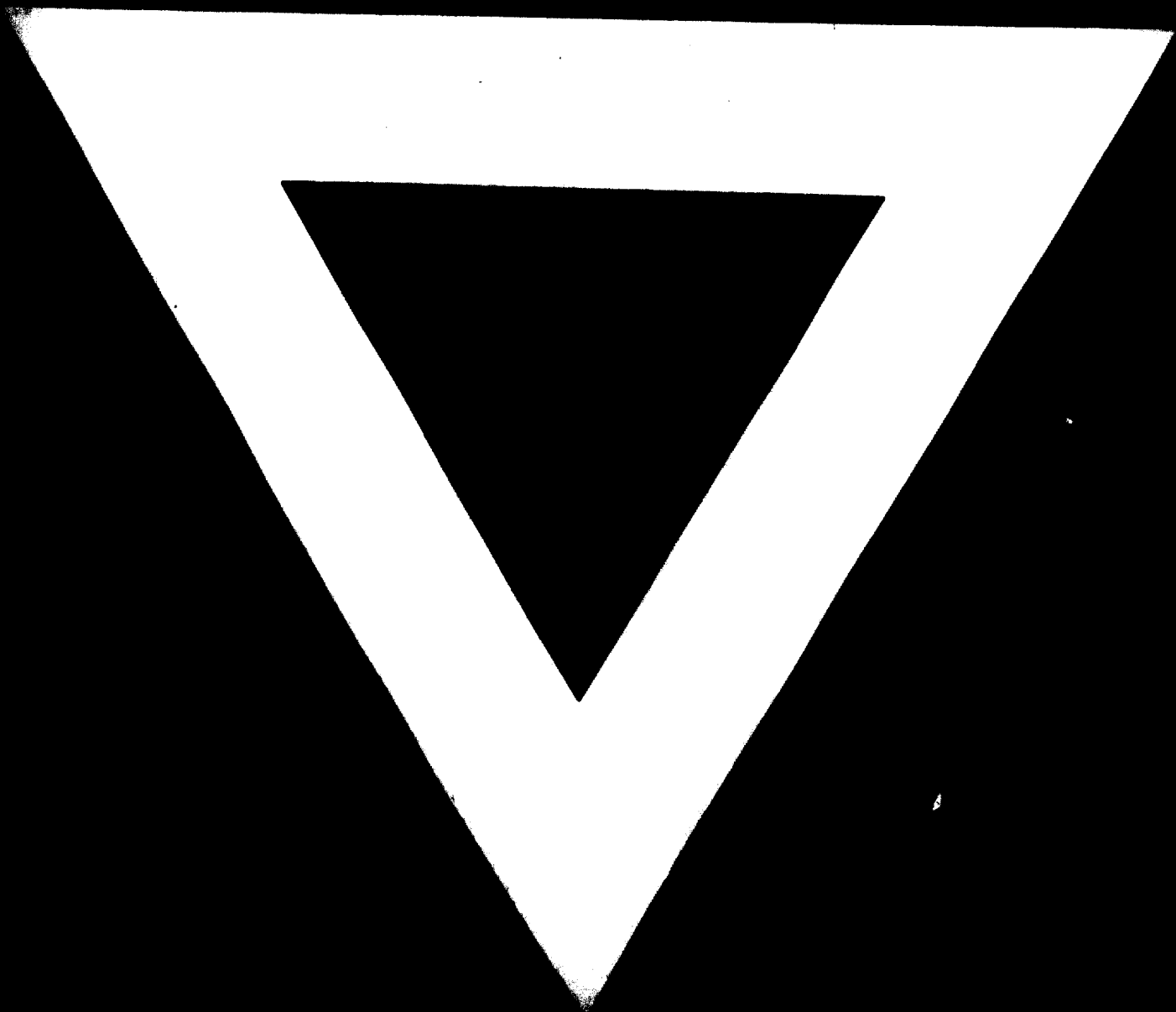
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