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with ESCAP

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TECHNICAL CO-OPERATION AMONG DEVELOPING COUNTRIES IN THE ESCAP
REGION IN THE FIELD OF AGRO- AND ALLIED INDUSTRIES 1/

by

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes the need for transparency and accountability in financial reporting.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It includes a detailed description of the experimental procedures and the statistical analysis performed.

3. The third part of the document presents the results of the study, showing the relationship between the variables investigated. It includes several tables and graphs to illustrate the findings.

4. The final part of the document discusses the implications of the study and provides recommendations for future research. It also includes a conclusion summarizing the main findings and the significance of the work.

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1. Introduction

1.

This paper has been prepared in response to UNIDO's request and is to be considered at the UNIDO/ESCAP Seminar on UNIDO Operations Primarily for the Least Developed Countries in Asia and the Far East, to be held at New Delhi, India, from 19 to 30 January 1976.

2. The objectives of the New Delhi seminar are: (i) to identify and/or elaborate specific programmes of activities in industrial development in the least developed countries where external bilateral or multi-lateral assistance could make significant contributions; and (ii) to promote co-operative activities among the developing countries for mutual benefit.

3. In this paper, reference has been made to some of the agro-industrial projects that have been identified in two developing countries which are typical of the needs of a large number of countries in the region. The material for this paper has been drawn largely from the reports of: (i) the UNIDO regional advisory service; (ii) ESCAP/UNIDO regional consultative missions; (iii) work connected with the priority projects of joint ESCAP/UNIDO Industry and Technology Division; and (iv) the deliberations of the inter-governmental meetings.

4. Under the existing institutional arrangements, reference has been made to the commodity communities which have been established as inter-governmental bodies. The new commodities which lend themselves for similar co-operative action have been identified and detailed work is under way, with a view to identifying innovative mechanisms of regional/sub-regional co-operation in line with the requirements of the UNIDO Lima Declaration.

5. The ESCAP secretariat, in close co-operation and collaboration with UNIDO, has been organising regional studies on selected agro-industries which are of social and economic importance to a large number of developing
/countries in

countries in the larger interest of promoting regional/sub-regional co-operation.

6. In the matter of innovative arrangements, the ASEAN group of countries have initiated action in the establishment of an Action Group for Fertilizers.

7. The ESCAP secretariat, in co-operation with UNIDO, has commissioned a number of regional studies on agricultural machinery since 1968 which have culminated in the establishment of a Regional Centre for Agricultural Machinery at Los Baños, Philippines.

8. The requirements of technology for agro-industrial development has received considerable attention at inter-governmental meetings as well as the Commission session. Currently there is a directive to establish a regional technology network for agro-industries.

9. The work programme as approved by the Committee on Industry, Housing and Technology at its first session held from 15 to 22 September 1975 in the field of agro- and allied industries is comprehensive. In accordance with the directive of the thirty-first session of the Commission (New Delhi, 1975) an inter-governmental meeting has been convened by the Executive Secretary from 24 to 28 February 1976 to identify specific areas of co-operation in the field of agro- and allied industries.

10. The UNDP Governing Council, at its twentieth session held from 11 to 13 June 1975, has recorded its continuing interest and determination to give support to the programme of technical co-operation among developing countries. A special reference has been made to UNIDO in seeking means to identify the capacity and needs of developing countries in the field of industrial development, with a view to promoting technical co-operation among developing countries.

11. The New Delhi Seminar may wish to more clearly identify specific and innovative mechanisms of co-operation among the developing countries of the ESCAP region, taking into consideration the activities that have been enumerated in this paper.

II. Identification of Agro-Industrial Projects and Prospects for Co-operation in Specific Agro-Industries

12. There is a great similarity of agro-climatic and socio-economic conditions in a large number of the developing countries of the ESCAP region. Therefore, the raw materials for agro- and allied industries and the needs of industrial technology are also somewhat similar. Reference is made to the identification of some agro- and allied industries projects with reference to (i) Papua New Guinea; and (ii) Sri Lanka, which are illustrative of the types of agro-industrial processing possibilities in the developing countries of ESCAP region.

1) Papua New Guinea

13. A detailed study and consultations held with the concerned authorities in the country have resulted in the identification of the following projects for development:

- a) "Manufacture of Refined Edible Oils and Compound Edible Fats Combined with Soap and Glycerine Manufacture"

This project was proposed with a view to saving of foreign exchange expenditure of Australian dollars of 2.5 million per annum and estimated to be growing at the rate of about 16 per cent per annum. Both coconut oil and palm oil are produced indigenously.

- b) "Establishment of Industrial Processing Units Based on Coconut Coir"

This project was proposed in view of the potential for large-scale employment generation by making use of an indigenously available raw materials.

- c) "Reorganization of the Tannery Located at Iag and to Take Up Manufacture of Leather and Leather Products"

This project was proposed in view of the substantial potential for foreign exchange earning and employment generation.

- d) "Establishment of a Textile Mill"

This was based on the basic necessity of producing cloth

/required for

required for the local people. Many technical experts including Sir Robert Webster, a textile magnate from Australia, has advised the Government of Papua New Guinea on the establishment of a textile mill.

- e) "Industrial Processing of Rubber to Produce Rubber Products both for Domestic Consumption and Export"

This project was proposed with a view to saving foreign exchange expenditure and the raw material being indigenously available. The rubber production was reported to be increasing from year to year.

14. The projects that were identified and recommended for UNIDO technical assistance were examined by the Government of Australia, Department of External Territories, and in consultation with the concerned departments within the Government in Canberra, had placed requests with the UNIDO secretariat to provide technical assistance as far back as 1972-73.

11) Sri Lanka

15. In a comparatively more developed economy and of a different cultural and historical background an in-depth study was carried out and consultations held with the concerned authorities which resulted in the identification of the following agro-industrial projects in 1974:

- a) "Industrial Processing of Cashew Nut and By-Products"

This project was proposed with a view to developing a new plantation crop as a part of diversification scheme and the potential to earn substantial foreign exchange besides providing employment opportunities.

- b) "Integrated Processing of Cotton and Cotton Seed"

This project was proposed in view of the economic importance of the cultivation of cotton which has already made progress and more importantly to provide technical assistance in ginning of seed cotton and the industrial processing of the cottonseed.

- e) "Development of Kenaf Cultivation and Industrial Processing of Pulp"

This project is of particular interest to the Eastern Paper Mills Corporation, which has to depend on imported pulp for its raw materials at considerable expense of foreign exchange.

- d) "Development of New Sources of Fibre and Fibre Products"

This project was proposed with a view to saving considerable amount of foreign exchange expenditure on import of fibre and fibre products.

- e) "Integrated Industrial Processing of Manioc (Cassava)"

This project was proposed with a view to increasing the revenue from a root crop which is available in abundance. The industrial products based on cassava would be starch and starch-based chemicals.

- f) "Industrial Manufacture of Glue from Tannery Products"

This is with a view to making economic use of the available wastes and by-products.

- g) "Improvement in Design of the Footwear Manufacture at the Leather Products Corporation"

This is with a view to improving the quality of the products.

- h) "Installation of a Rubber Plant (Mill) for the Manufacture of Rubber Components for the Footwear Trade"

This is an essential requirement in the manufacture of specific types of footwear.

- i) "Manufacture of Boards from Leather Scrappings and Other Agricultural Waste Products"

This is with a view to utilization of waste products in the tannery.

- j) "Industrial Manufacture of Cigars"

It was proposed in view of the increased foreign exchange earnings by the export of cigars manufactured from indigenously

grown tobacco.

k) "Development of Oil Palm Industry"

The new plantation has reached the stage where oil extraction unit has to be established and hence the need for technical assistance.

l) "Adviser on Development of Small-Scale Industries (Agro-based and Rural Industries)"

This is with a view to providing technical support to the Industrial Development Board in fostering the rapid development of small-scale industries.

16. The Government of Sri Lanka has accepted all the projects that have been proposed and placed requests with UNIDO for providing necessary technical assistance. The UNIDO secretariat has already provided assistance for a large number of projects and the experts for the rest are under recruitment.

17. The type of agro-industrial projects that have been identified for development in Papua New Guinea and Sri Lanka would also be of interest to a large number of other developing countries in the ESCAP region and, more particularly, those listed under group A of the UNIDO's aide-memoire. However, it could be generalized that rice, oilseeds, sugar, coconut, among the food industries, and processing of timber, tobacco, fibre and leather among the related light industries which would be of interest to this group of countries.

18. The great degree of similarity of agro-industries in a large number of countries will be readily recognized. It is also to be appreciated that a large number of these industries have developed reasonably well by adaptive and innovative technologies, especially in some Asian countries,

namely, India, Indonesia, Malaysia, Pakistan, Philippines, Singapore, Republic of Korea and Thailand. Furthermore, there is a degree of complementarity in the development of these industries, such as Malaysia excelling in oil palm industry, Philippines in coconut, Sri Lanka in cassava, Thailand in rice milling, Pakistan in leather and leather goods, Philippines

/in sugar

in sugar, India in rubber and rubber products, etc. An exercise was carried out at the ESCAP secretariat in 1974 on the complementarity of the technological development in a group of selected agro-industries and scope for reciprocal arrangements for sharing of know-how, management and organizational ^{and project} skills, were identified for 3-4 countries.

19. In the promotion of co-operation between the Asian countries, it would seem that a high priority has to be given to small-scale agro-industries. It would be necessary to provide expertise from a group of countries in examining technical feasibility of establishing small-scale agro-industrial units, especially land-locked countries, such as Afghanistan, Nepal, Bhutan and Laos. It is also necessary to make provision for the travel of entrepreneurs between these countries, with a view to providing them with first-hand information on the type of processing technology, management and operational skills that are available for adaptation in the respective countries. A third suggestion would be to continue to offer forums for discussion of opportunities for co-operative arrangements, especially keeping in view the needs of the least developed countries.

20. The New Delhi seminar could consider the co-operative arrangements that could be identified in the development of these industries among the participating countries. This would be a practical method of promoting co-operation among developing countries in the transfer of industrial technology which is the main objective of the seminars.

/III.

III. Regional Projects which Stimulate Co-operative Action Among Developing Countries

21. It is common knowledge that ESCAP, in co-operation with UNIDO, has been organizing a large number of regional projects in the field of agro- and allied industries in accordance with the directives of the inter-governmental meetings and the Commission sessions. It is proposed to make reference to two important regional projects which have made a great impact among the developing countries in the region and have provided the stimulus to co-operation among themselves in the exchange of information and transfer of technology.

A. Bio-gas technology and bio-mass recycling

22. The fuel and fertilizer crises which were witnessed in October 1973 threw the economies of a large number of developing countries out of gear especially in view of the sudden increase in the cost of foreign exchange for the import of both oil and chemical fertilizers. In the light of this background, the Commission at its thirtieth session (1974) requested the Executive Secretary to examine ways and means of assisting the developing countries in overcoming these crises. One of the earliest regional projects that was developed was "Bio-Gas Technology and Utilization" with the dual purpose of providing a source of energy from the utilization of agricultural and animal waste products by the fermentation process and also making use of the residual material as a valuable source of fertilizer. The bio-gas technology has long been known in some of the developing countries of Asia, but has not been commercially exploited. However, the oil crisis gave an impetus for renewed interest in this subject. The ESCAP regional project which was approved by UNDP (RAS/74/041) envisaged the organization of (i) a preparatory mission to visit selected countries in the region for consultations with the experts and other knowledgeable persons for the collection of first-hand information on the present status of the technology and also assessment of the problems encountered in the operation of the bio-gas plants; (ii) two workshops for the dissemination of information and to serve

/as forums

as forums for discussions and decisions on the guidelines for the development of this rural industry in future. The preparatory mission visited several countries in the region and produced a comprehensive background document. Since it was the first survey of its kind, it proved to be an extremely valuable reference material for the two workshops that were organised subsequently in New Delhi and Manila.

23. The New Delhi workshop (28 July - 2 August 1975) was attended by 25 experts from 14 countries, besides the representatives of international organizations and 50 or more technical specialists from within India. The workshop was inaugurated by the Prime Minister of India, in which Mrs. Gandhi spoke of the need for making a little go a long way and development of technologies suitable for the socio-economic conditions of the rural areas of the countries in Asia and the Pacific. She placed emphasis on the need to reduce the drudgery of life by the application of modern science and technology. The New Delhi workshop concerned itself with the technological design of the digester, the gas holder and the utilization aspects of the bio-gas. It further considered the economics of operation of the bio-gas plants. The workshop arrived at a number of recommendations for implementation at the national, regional and inter-regional levels. At the Manila workshop (13-18 October 1975), the major subject of discussion was Fermentation Technology which considered the different types of raw materials and the conditions required for fermentation to produce the optimum quantity of gas and the most efficient utilization of the effluents. The workshop also concentrated attention on the development of Integrated Farming System (IFS) built around the bio-gas generation plants. This involves the utilization of the effluents from the digester for the growing of algae, which is a valuable source of protein and compares favourably with the oilseed cake meals for its protein content for use as one of the raw materials for the feed industry. Further uses of the effluents are in the raising of fish and ducks at a subsequent stage and lastly its use as a source of nutrients in

/the growing

the growing of food crops. All these are integrated operations and referred to as Integrated Farming System. The concept which has been reported to be implemented in some countries would make available (i) energy for use in the rural areas both for cooking and lighting purposes and also for use as a source of fuel for the operation of small irrigation pumps; (ii) fertilizer required for the growing of food crops. Therefore, the village economies could be made self-sufficient if not self-reliant by a proper organization of the integrated farming system.

24. Another important point that has come to light as a result of the ESCAP investigations into bio-gas technology has been the use of the Neoprene digester made of synthetic polymeric material which reduces the cost of the digester and gas holder considerably. The ESCAP secretariat has been successful in securing one such digester which will be installed in one of the developing countries to serve as a prototype and demonstration plant and, more particularly, the integrated farming system that could be developed on an economically viable basis in typical rural surroundings of Asia. It is envisaged that an operational study mission could be organized perhaps in the year 1977 to demonstrate the technical and economic feasibility of the use of the Neoprene digester and also the integrated farming system. The ESCAP secretariat has other projects on hand such as (i) the organization of a workshop in one of the Pacific island countries in 1976-77; (ii) the provision of technical assistance to interested member countries in the establishment of bio-gas plants and Integrated Farming System; and (iii) the bringing out of a manual on the available technology.

25. The Chief, Division of Industry, Housing and Technology, and Director of the New Delhi and Manila workshops, presented the findings and recommendations of the workshops and also the ESCAP work programme to the ACAST meeting which was held in Geneva in December 1975, which was received with great appreciation. The Office of Science and Technology, United Nations Headquarters, New York, UNITAR and the Government of West Germany are jointly organizing a seminar

/in Göttingen.

in Göttingen, West Germany, ^{in June 1976} on Microbiological Energy and will consider methane gas generation, growing of algae and related matters. Bio-gas technology and bio-mass recycling is a subject which provides ample scope for co-operation among the developing countries of Asia.

B. Regional Centre for Agricultural Machinery

26. The ESCAP secretariat, in co-operation with UNIDO, has organized regional study missions on the development of agricultural tools, implements and machinery in the developing countries of the region. The surveys and studies carried out have resulted in the recommendation to establish a regional centre for the development of agricultural machinery. The concept, as accepted at present, is to establish a network of the agricultural machinery development institutes in the participating countries to function through a co-ordinating centre to effectively assist the national institutes in developing their own technological capabilities for the manufacture of agricultural implements and machinery best suited to their conditions. The Commission has also accorded a high order of priority to this regional project as is evidenced by the resolutions adopted at the Colombo (1974) and the New Delhi (1975) sessions. It has been agreed to establish the co-ordinating centre at Los Baños, Philippines, at the request of the Government of the Philippines which has offered host facilities. The UNDP has provided preparatory phase of assistance to the project (PAS/74/008), effective from August 1975. Currently, consultations with the interested countries and also the co-operating agencies namely, UNIDO and FAO, are in progress, with a view to finalizing the draft project documents.

27. The objectives of the project are to assist the participating countries in their farm mechanization programmes which, inter alia, will (i) increase the production of food grains and other crops by the application of modern technology, improved and timely cultural practices and multiple cropping; (ii) provide mechanical tools and equipment for which human labour is not a substitute; (iii) minimize quantitative and qualitative losses of food grains

/and commodities;

and commodities; and (iv) through these measures will raise the income of small farmers.

28. The main emphasis in establishing the regional centre is to assist the developing countries in improving the agricultural production by the introduction of multi-cropping and raising of the output per acre of food grains and other crops of economic importance. It has been recognized that, besides other inputs to food and agricultural development, farm mechanization will have two important effects, namely, (a) raising the productivity of the land, and (b) prevention of post-harvest losses. The urgency and importance of providing technical assistance, especially for the manufacture of tools and implements in the less developed countries listed in group A of the side-memoire, has been emphasized. The ultimate objective of the project is to assist the small farmer in increasing his food and agricultural production and thereby help him to earn a higher income. This is one of the effective means of tackling the problem of rural poverty.

29. The Executive Secretary convened an inter-governmental meeting at Bangkok from 20 to 22 November 1975 to examine the draft project document for the establishment of the regional centre. The meeting was attended by the representatives of a number of countries attending this seminar. This meeting made a valuable contribution to the revision of the draft project document and the draft statute. Consultations are still continuing and it is expected that the project document will be finalized in conformity with the requirements of the member governments, especially taking into account the priorities in the implementation of the work plan. It is expected that the project will become operational in continuation of the preparatory phase of assistance.

30. It will be seen that this regional project has made an impact on the developing countries and has provided the necessary political will to co-operate in establishing a co-ordinating centre which, among other things, will also promote technical co-operation among developing countries.

IV. Existing Co-operative Arrangements among Developing Countries

31. The ESCAP secretariat has long been active in the promotion of regional / sub-regional co-operation in a variety of activities, including the field of industrial development. The consultations held with the governments as far back as 1967 involved consideration of alternative methods of co-operative arrangements among the developing countries. However, greatest importance was attached to the co-operation based upon agricultural commodities. The main criteria were that the commodities, such as (i) rice, (ii) coconut, (iii) pepper, (iv) oil palm, (v) tea, etc. offer extensive employment and earn substantial amount of foreign exchange, but there are many problems that remain to be resolved at the production, processing and marketing levels. The problems are of a stupendous nature that no single country with its meagre resources can solve them. On the contrary, the combined efforts on the basis of self-help and co-operation could bring about many advantages to the participating countries.

32. The ESCAP secretariat was given a directive to examine the coconut industry as the first attempt towards reaching agreement on regional/sub-regional co-operation. The detailed studies which were carried out in 1967/68 brought to light that coconut industry provided employment for one-third of the population in the Philippines, in Sri Lanka and in Kerala State of India, as also some islands of Indonesia. In some other Pacific island countries, coconut industry happens to be the main crop of economic importance. In terms of foreign exchange earnings coconut-based products as a whole rank third or fourth largest group. It was, therefore, evident that co-operative measures in the improvement of agricultural production by the introduction of new seeds (HYV strains), use of fertilizers and pesticides, increased industrial processing of copra to produce edible oil and also industrial utilization of by-products by making use of shell and coir provide extensive employment and co-operation in the marketing of these products both at the national level and the export markets would, to some extent, solve the economic and social

/problems of

problems of the countries.

33. The inter-governmental consultations which were convened by the Executive Secretary of ESCAP resulted in the creation of the Asian Coconut Community in the year 1969, which is located at Jakarta, Indonesia. The community functions as an inter-governmental body and is truly a demonstration of the political will to co-operate among the coconut producing/exporting countries in the region. In addition to the Philippines, Indonesia, India, Sri Lanka, Thailand and Malaysia, the founder members, Fiji and Western Samoa have become members. It is also mentioned that other Pacific island countries, whose economies are solely based upon coconut industry will soon be joining the community. UNIDO has given technical assistance to the community. UNDP has also provided financial support.

34. On the lines of the coconut community, another commodity which was identified to be of economic importance was pepper. It has also the increased employment potential in rural areas and earning of foreign exchange by the export of both pepper and processed products. There are problems at the production, processing, quality control and marketing levels. In recognition of the importance of this industry, the export value of which currently is of the order of \$ 150 million per annum, among the pepper producing and exporting countries in the ESCAP region, the pepper community was established in 1972. The UNIDO secretariat has offered technical assistance in the establishment of a pepper research and development centre. At the request of the member countries of the community, a consultative and advisory mission was organized during October/November 1975 to assist them in the evaluation of the existing research and development activities in the field of pepper and to re-formulate the project document for the establishment of the centre. Indonesia has offered host facilities for the location of the centre at Bogor. The other members of the community are Malaysia and India. It is expected that the revised draft project document will be considered at the next session of the pepper community and eventually it will be submitted to UNDP Headquarters.

/New York,

New York, for financial assistance. UNIDO will be the executing authority for this project.

35. The Association of Natural Rubber Producing Countries (ANRPC) has been established as another demonstration of the political will of the rubber-producing and exporting countries in the region with its headquarters at Kuala Lumpur, Malaysia. It functions in more or less the same manner as the Asian Coconut Community. It provides a forum for exchange of technical information at production, processing and marketing levels and also in the research and development of the rubber industry, especially to meet the threat of synthetics and substitutes in the importing-developed countries.

36. Another commodity which has lent itself for co-operative action has been wood which involves the wood-based industries. The private sectors in timber industries of Indonesia, Malaysia and the Philippines have set up a council in 1974 known as the Southeast Asian Lumber Producers' Association (SEALPA). In view of the problems of timber processing industries being complex, consultations are said to be still progressing as to the precise nature of the co-operation that could be arrived at among the participating member countries. The SEALPA will have the same objectives as the coconut and pepper communities and the ANRPC.

37. In the light of the deliberations at various forums and the Commission sessions, some of the new problem commodities that have been identified are cassava, oil palm, tea, to be taken up for intensive studies with a view to identifying innovative mechanisms of co-operative action on a self-help basis. Considerable headway has been made in the establishment of Jute International.

38. The ESCAP secretariat is the co-executing agency for a priority project entitled "Raw Materials and Development (RAS/74/046)", which is funded by the UNDP. Under the terms of reference of the priority project, investigations have been carried out in the countries and new areas of co-operative action have been suggested in line with the directives issued by the Sixth and Seventh Special Sessions of the General Assembly on raw materials and development, and the establishment of the New International Economic Order.

ESCAP Regional Consultative Missions on Specific Agro-Industries

39. In co-operation with UNIDO, the ESCAP secretariat has organized consultative missions on selected agro-industries of high priority which are of economic importance to a large number of developing countries in the region. These missions have examined the technical, economic and social aspects of selected agro-industries and have made a number of recommendations for their development at the national level as also for co-operative action at the regional level. The examples are:

(i) Rice

40. Rice production and milling happens to be the single largest food industry in the developing countries of the ESCAP region. Paradoxically, a large number of countries are also deficit in their requirements of rice, which is the staple food. It is also known that by the application of proper industrial technology in the post-harvest stage of rice cultivation, such as threshing, drying, storage, transport and also at the stage of milling and by-product utilizations, not only the availability of the grain could be increased substantially, but the economics of operation could be improved. The net benefits that accrue would be to the advantage of the small farmers who produce the grain. It is with this objective that consultative missions were organized on (a) rice milling, and (b) rice bran oil industries in 1969 and 1970. The studies carried out led to the organization by UNIDO of an Inter-Regional Seminar on Industrial Processing of Rice in India in 1971, in which a large number of the Asian countries participated. The guidelines that were laid down at the seminar were extremely useful in the development of this industry, which also brought to light the availability of technologies in some countries of the region which could be shared by interested countries.

(ii) Coconut

41. The consultative mission on coconut industry organized in 1970 brought to light the immense potential for increased industrial utilisation of the coconut products, such as copra, coconut oil and coconut shell. It has also

/suggested that

suggested that a regional coconut protein food products development centre be established. The Tropical Products Institute in London has been extremely interested in the proposal and it is now learnt that the research work is to be taken up at the Chemical Research Laboratory, Bogor, Indonesia, with the technical assistance of the Government of the United Kingdom of Great Britain and Northern Ireland.

(iii) Oil Palm

42. The consultative mission on oil palm industry organized in 1970 has brought to light the immense benefits that this industry could provide from the point of view of (i) settlement, (ii) employment, (iii) export earnings by the export of both palm oil and palm kernels. One other important point about oil palm industry is that the unproductive or under-productive rubber and coconut plantations could be converted into oil palm cultivation which gives a considerably higher income per hectare. This, in fact, has been done in Malaysia extensively and is being adopted in one plantation at Nakiadeniya Estate in Sri Lanka. Other countries which were not traditionally oil palm producers such as Thailand and India have also taken up large projects. Papua New Guinea has emerged as an important oil palm producing and exporting country.

(iv) Compound Animal Feedingstuffs Industry

43. A consultative mission on compound animal feedingstuffs industry was organized with a view to providing assistance to four selected countries in the region. The recommendations of the mission have brought to light the improvements that could be made in the technical operations of the feed mills and also the quality control measures that could be introduced.

44. The secretariat, in compliance with the directives of the first session of the Committee on Industry, Housing and Technology, is currently examining the organization of consultative missions and workshops on employment-oriented agro-industries, such as (i) essential oils, (ii) silk industry, (iii) leather and leather products, etc. It will be seen that the findings and recommendations

of the consultative missions organized have promoted co-operative action among developing countries.

N.

V. Regional Technology Network for Agro-Industries

45. In fulfilment of the Directive of the former Committee on Industry and Natural Resources, the Executive Secretary convened an ad hoc expert group meeting to examine the feasibility of establishing a regional technology bank for agro-industries in October 1974. The expert group meeting considered various aspects of technology transfer and also made reference to the development of technologies appropriate to the resources and socio-economic condition in a large number of developing countries. There is an appreciable degree of complementarity in the technologies that have been successfully in operation in some of the developing countries in the region. In the interest of promoting technical co-operation among developing countries, the expert group recommended the establishment of a regional technology network for agro and allied industries.

46. The Asian Ministers of Industry at their meeting in October 1974 at Bangkok considered the report of the ad hoc expert group meeting and in their Declaration transmitted to the UNIDO Lima Conference, reference was made to the establishment of regional/sub-regional institutional machinery for transmitting relevant technology and technical and managerial skills in the field of agro-industries. They called upon ESCAP together with UNIDO and other agencies to encourage a programme of inter-governmental consultations on the various aspects of production and development and for the exchange of information with particular reference to appropriate technology in the field of agro-industrial development. Further, the meeting called for the provision of facilities for a comprehensive survey of agro-industrial development within the region.

47. The UNIDO Lima Declaration makes pointed reference to the transfer of technology and the need for the establishment of institutional mechanisms, and prior attention to be given with reference to matters relating to technology related to agro- and allied industries.

48. The Commission, at its thirty-first session (1975), welcomed the

/report of

report of the ad hoc expert group meeting to examine the feasibility of establishing a regional technology bank for agro-industries, which revealed the potential for co-operation within the region for the transfer and adaptation of technologies that were appropriate to the developing countries and had proved to be successful in operation in the region. The Commission urged that early steps be taken to implement the major recommendations of that report.

49. The first session of the Committee on Industry, Housing, and Technology held at Bangkok from 19 to 22 September 1975, during its discussions on agro- and allied industries, repeatedly stressed the need for technology development, adoption, adaptation, dissemination and co-operation in the broad field of agro- and allied industries. It recommended that a regional technology network be established for agro- and allied industries. In essence, the project would function through a network of the national institutions in the development of indigenous capability to achieve technological self-reliance. In view of the overwhelming importance and urgency of establishing of such a network, it was urged that a suitable arrangement be worked out in consultation with FAO and other United Nations agencies concerned. In any such arrangement, ESCAP should have a co-ordinating role. In that connexion, the Committee also took note of the fact that FAO had proposed an inter-country project entitled "Inter-country co-operation for transfer of food and agricultural products processing technology".

50. In view of the directive issued by the Committee, the ESCAP secretariat is actively considering the preparatory work to be taken on hand for the establishment of a regional technology network for agro- and allied industries. This will undoubtedly be a co-operative action among the developing countries because of the main objective being to strengthen the indigenous technological capabilities of the member countries, with the ultimate aim of assisting the countries in achieving technological self-reliance in so far as agro- and allied industries are concerned.

VI. Inter-Governmental Meeting to Identify Specific Areas of Co-operation in the Field of Agro- and Allied Industries

51. The thirty-first session of the Commission held at New Delhi, India, (report No. E/CN.11/1222) has laid the greatest emphasis on the development and promotion of agro-industries, in view of their relevance to the maximization of the benefits of the "green revolution", the creation of employment, and the improvement of the living standards of the large masses of the rural population. The Commission, recognizing the importance of inter-regional co-operation for the development of agro-industries in the region and the need to evolve a practical mechanism for such regional co-operations, considered that an inter-governmental meeting should be convened to identify specific areas of co-operation in the field of agro-industries and work out possibilities of co-operation among the member countries. The drawing up of agro-industrial proposals on a joint market basis was also suggested for consideration.

52. In accordance with the directive of the Commission, the Executive Secretary has taken steps to convene an inter-governmental meeting, which will be held from 24 to 28 February 1976 at ESCAP headquarters in Bangkok. The main emphasis of the meeting is to identify specific areas of co-operation in the field of agro- and allied industries. The provisional agenda is as follows:

1. Review of programmes and policies for agro- and allied industries in the countries of the region with a view to identification of specific areas of co-operation.
2. Co-operative arrangements in the implementation of specific activities considered by the Committee on Industry, Housing and Technology at its first session:
 - a) Regional Centre for Agricultural Machinery
 - b) Integrated post-harvest technology
 - c) Follow-up action on the priority project on regional co-operation in chemical fertilizer production and distribution

- d) Regional Symposium on Pesticides (early part of 1976)
- e) Employment-oriented agro- and allied industries, such as
 - (i) sericulture, (ii) essential oils, (iii) leather and leather products
- f) Food industries such as the integrated dairy industry
- g) Bio-gas technology and bio-mass recycling in the context of developing integrated farming systems
- h) Industrial utilization and recycling of agricultural wastes and by-products.

3. Regional technology network for agro- and allied industries.

4. Adoption of the report.

53. Under agenda item 1, it is expected that the representatives from the governments will present the programmes and policies for development of agro- and allied industries in the respective countries and also identify specific areas of co-operation. The first session of the Committee on Industry, Housing and Technology had examined the strategy of programming for development of agro- and allied industries in the rural sector and taken note of the fact that, while the industry in the organized sectors of jute, cotton, and sugarcane and also the plantation sectors of tea, rubber and coconut had well developed, at the other extreme, the artisan type of cottage industry also existed from time immemorial. In the middle sector, the planning and programming of medium and small-scale agro-industries needed to be viewed in a comprehensive manner and should be related to the integrated development of that sector, based upon the fuller utilization of local agricultural resources, rural manpower and appropriate technical know-how. For small-scale agro-industries to succeed, innovative organizational arrangements had to be thought out which would ensure that the interests of consumers, producers and suppliers coincided. The Committee felt that, in order to break new ground, a programme of activities for the development of small-scale agro- and allied industries on a comprehensive basis should be undertaken so that projects might be worked

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out in close consultation with the government, for a selection of agro-industries in the three sub-regions of South Asia, Southeast Asia and the Pacific. It was also stressed that the project should initially concentrate on investigations pertaining to the socio-economic background of the region selected, identification of agro-industries that could be developed, and organizations, financing and technical assistance needed, including arrangements for development of those projects. In the project proposal that has been prepared by the secretariat, the identification of specific areas of co-operation among groups of countries has been emphasized.

54. Reference has already been made in the preceding sections of this paper to the agenda items 2(a) - Regional Centre for Agricultural Research, 2(e) - Employment-oriented agro- and allied industries, and 2(g) - Biogas technology and bio-mass recycling. However, it is proposed to briefly indicate the co-operative action that is proposed to be taken up under remainder of the agenda items.

2(b) Integrated post-harvest technology

55. It is proposed to organize a project to carry out field investigations for the identification of the specific problems, such as the lack of appropriate technology in the use of post-harvest practices, such as handling, drying, transport, storage, packaging and distribution. It is proposed to take it up as a pilot project in specific areas of selected countries which are representative of the crops and the problems that are generally faced by the countries in the rural areas in Asia and the Pacific. The studies are intended to identify the technical assistance needs for the fabrication of post-harvest equipment indigenously as far as possible by making use of the materials available within the country. It is also recognized that in some countries the manufacture of such equipment has made considerable progress and the technology adopted has been found to be appropriate to the local conditions. Therefore, by commissioning a pilot project study, it should be possible to identify areas of co-operation among developing countries in an important

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field, such as the adaptation and application of integrated post-harvest technology. It is known that the post-harvest wastes and losses of food grains and commodities exceed 20 per cent in some countries. By the application of proper technologies, it should be possible to reduce the wastes and losses of food grains and commodities to some extent.

2(c) Follow-up action on the priority project on regional co-operation in chemical fertilizer production and distribution

56. This is a UNDP-supported project, which is being executed jointly by UNIDO and ESCAP. Consultations with the governments have been completed and an expert group meeting was convened in August 1975. The ASEAN group of countries have taken the initiative to establish an action group for chemical fertilizers, with a view to promoting co-operation among these countries. In so far as the regional project is concerned, the ESCAP secretariat proposes to submit a comprehensive document in consultation with UNIDO, outlining the strategy for co-operation among the countries in the region to be considered at the thirty-second session of the Commission.

2(d) Regional Symposium on Pesticides

57. The use of pesticides to increase agricultural production has been recognized. However, the manufacture of pesticides and formulations has not made much progress in many countries of the region. The ESCAP secretariat, in co-operation with UNIDO and FAO, had organized a survey in selected countries in the region with a view to identifying the specific needs of pesticides, as also co-operative arrangements for the formulations. The subject was considered at the first session of the Committee on Industry, Housing and Technology, which has emphasized that further action should be taken with a view to promoting co-operation among the developing countries. A Regional Symposium on Pesticides will be organized by UNIDO in co-operation with ESCAP to be held in Bangkok from 26 to 31 January 1976. The symposium will not only provide a forum for the exchange of information on recent technological developments, but will also lay down the guidelines for the manufacture and formulation of the

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pesticides in the developing countries of the region. The environmental problem in the use of pesticides, especially from the point of view of toxicity will be a subject of special consideration. It is expected that the symposium will also indicate general guidelines for co-operation among developing countries in the field of pesticides - an important industrial input to the increased production of food and agricultural products.

2(f) Food industries such as the integrated dairy industry

56. The first session of the Committee on Industry, Housing and Technology has identified the organization of a workshop on integrated dairy industry under the programme of technical co-operation among developing countries. The proposed workshop will provide the opportunity to examine in a country where the industry has made reasonable progress with regard to technological managerial and organizational skills in the establishment of the dairy industry. The workshop is also likely to promote co-operation among developing countries by stimulating interest in providing technical assistance to establish new units or to solve the problems of the existing dairy units depending on the needs of the countries.

2(h) Industrial utilization and recycling of agricultural wastes and by-products

3. Regional technology network for agro- and allied industries

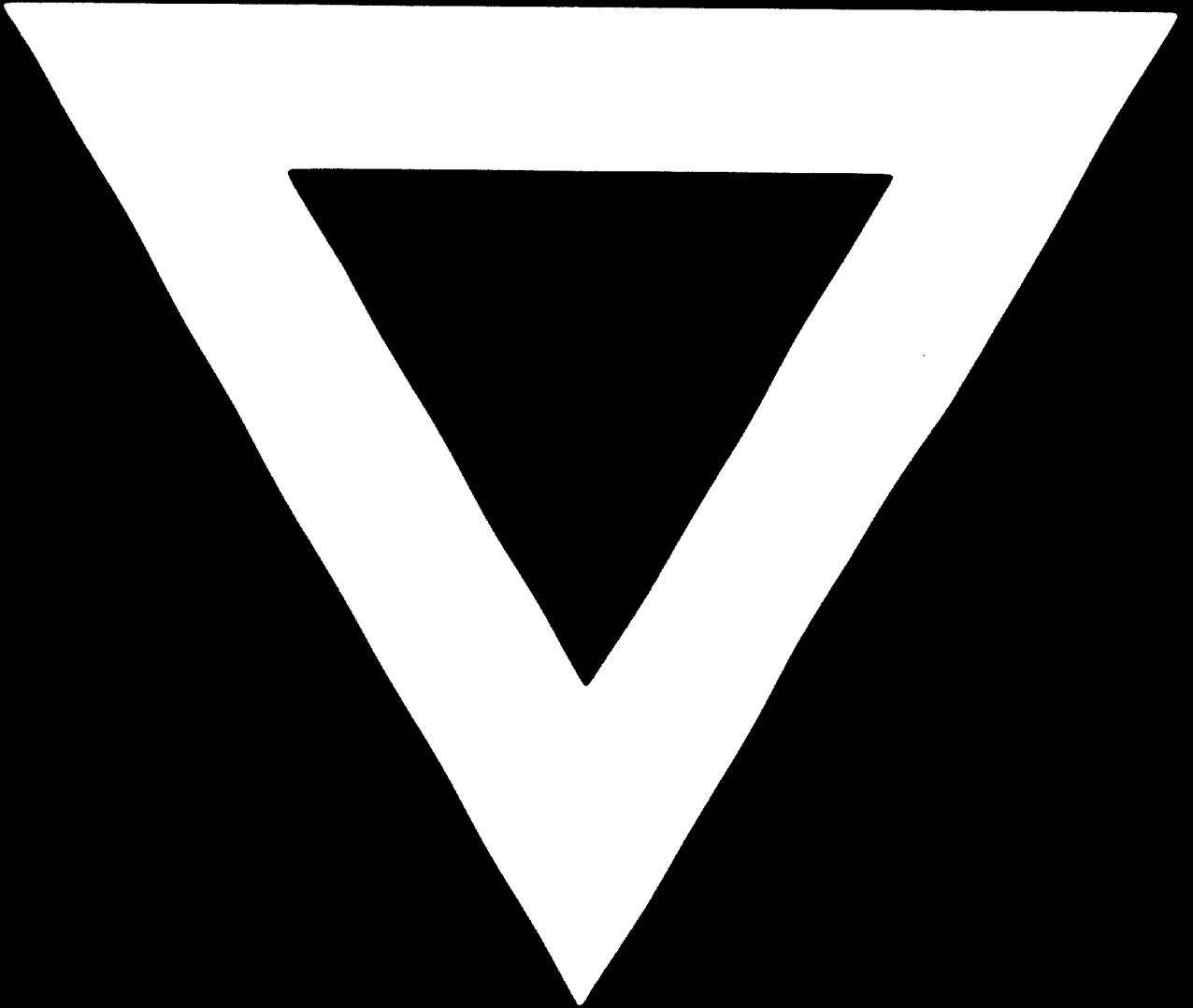
59. Reference has been made to this item under section 5 of this paper. As already mentioned, the ECAP secretariat has initiated action for the establishment of the regional technology network for agro- and allied industries in consultation with the concerned United Nations agencies, such as UNIDO and FAO. The network when established will provide an effective forum for co-operation among developing countries, especially in relation to transfer of technology pertaining to agro- and allied industries.

60. The deliberations and decisions of the inter-governmental meeting will be a distinct milestone in promoting technical co-operation among developing countries.

ANNEX 1: REFERENCES

1. Reports of the IIT/IITC Consultative Missions on (i) Rice Milling, (ii) Rice Grain Oil Industry, (iii) Sugarcane, (iv) Oil Palm, and (v) Cotton and Jute and Jute-stuff Industry.
2. Report of the Joint Government-Industry Meeting on Planning the Feasibility of Establishing a Regional Technology Bank for Agro-Industries (IIT/5, dated 20/22/75).
3. Agro- and Allied Industries (L/Shell/IIT/L24, dated 30 July 1975).
4. Report of the First Session of the Committee on Industry, Housing and Technology (L/Shell/L23, dated 17 October 1975).
5. Report of the Inter-governmental Meeting for the Establishment of the Regional Centre for Agricultural Machinery (E/CN. II/L.42, d. 12 Dec. 1975).
6. Rice, Jute, Sorghum, and Technology: Reports of the (i) Preparatory Mission (IIT/3, 3, 9, 6, 3, 4, 1975) (ii) New Delhi, and (iii) Manila Workshops (E/CN. II/L.41, d. 9 Dec. 1975) (E/CN. II/IIT/L.13, d. 22 Aug. 1975)





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