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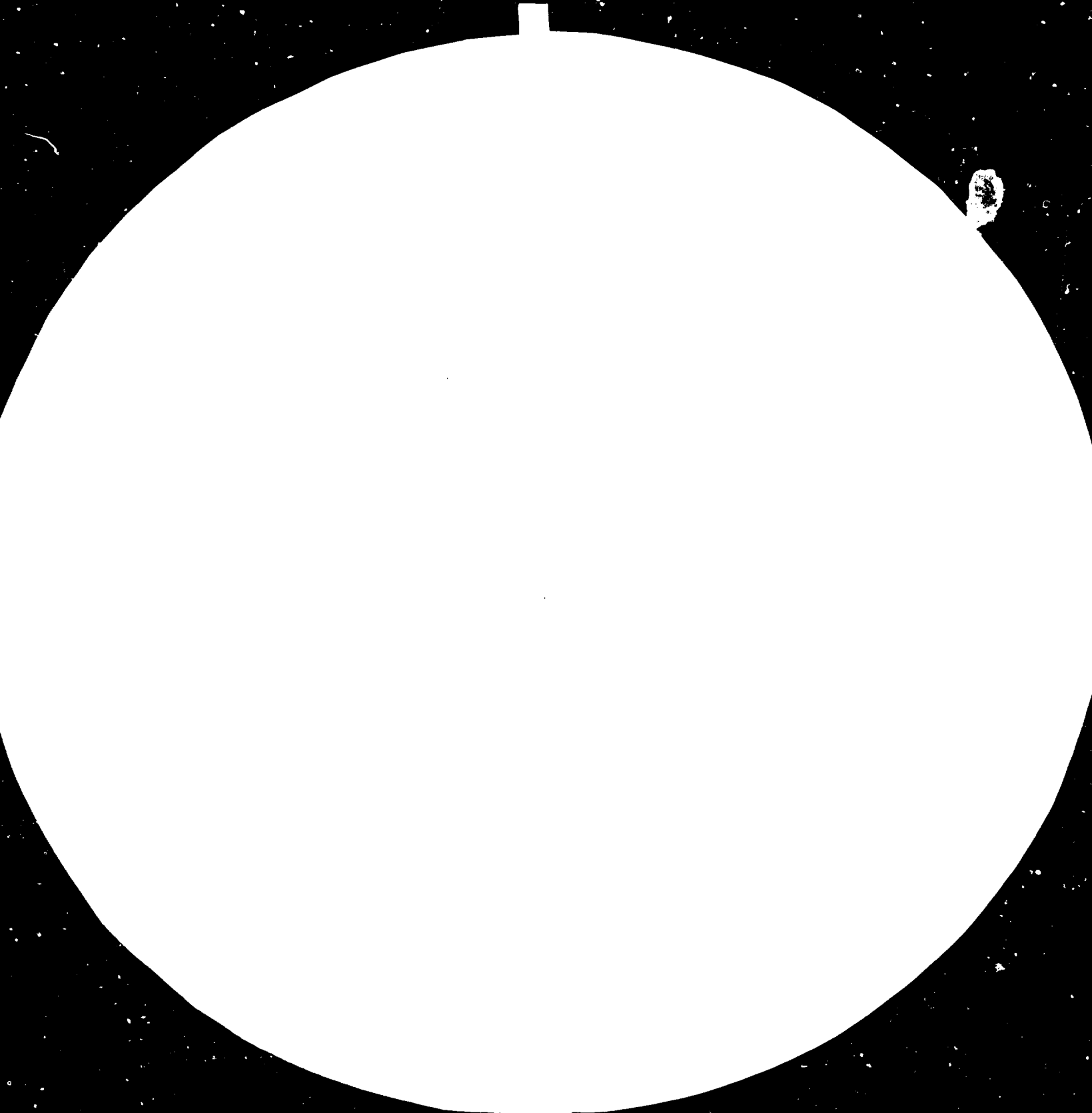
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Expert Group Meeting on downstream
processing activities in the vegetable
oils and fats industry in developing
countries

Vienna, Austria, 6-8 February 1984

REPORT *. (*Meeting on vegetable oils industry*)

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PREFACE

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

In order to stimulate such co-operation of the food-processing and the vegetable oils and fats industries, the First Consultation on the Vegetable Oils and Fats Industry was held in Madrid in 1977 and the First Consultation on the Food-Processing Industry was held in The Hague in 1981.

Taking into account the recommendations adopted at the First Consultations on the Vegetable Oils and Fats^{1/} and the Food-Processing Industries,^{2/} the Industrial Development Board, at its seventeenth session, decided that the Second Consultation on Food Processing with special emphasis on vegetable oils and fats should be held in the biennium 1984-1985. That Consultation will be convened in Copenhagen from 15 to 19 October 1984.

To finalize preparations for the Second Consultation, the UNIDO secretariat had convened an expert group meeting on "Measures and forms in promoting integrated development of the vegetable oils and fats industry within the food-processing industry" organized in co-operation with the Government of the Arab Republic of Egypt (Alexandria, 24 to 27 October 1983).^{3/}

1/ Report of the First Consultation on the Vegetable Oils and Fats Industry (ID/WG.260/9).

2/ Report of the First Consultation on the Food-Processing Industry (ID/278).

3/ Report of the Expert Group Meeting on measures and forms in promoting integrated development of the vegetable oils and fats industry within the food-processing industry, document ID/WG.404/5.

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ORGANIZATION OF THE MEETING

1. The meeting was attended by 17 participants from 15 countries and one inter-governmental organization (see annex 1).
2. The list of documents is contained in annex 2.

AGREED CONCLUSIONS

I

3. The Expert Group Meeting reviewed the country and industry experience presented by participants, and raised, inter alia, the following areas which could be considered by the Second Consultation as to the development of the vegetable oils and fats industry:
 - (a) Surveying of locally available raw material; development of alternative sources of raw material; use of high yielding oilseed and fruits;
 - (b) Impact of physical infrastructure, including storage and transport, on performance of the sector; energy requirements;
 - (c) Organization of raw material supply systems to industrial processing plants; full utilization of by-products; quality control; safety in industrial plants; maintenance problems in industrial plants; development of packaging technology;
 - (d) Transfer of technology for promoting downstream processing activities; strengthening of co-operation between scientific institutions, research centres and industrial enterprises; measures to promote vegetable protein products for human nutrition; training of manpower, particularly at technician level, under local conditions; upgrading of management systems; financial co-operation.

II

4. In the context of the subsequent discussions, several basic considerations were recognised: the vegetable oils and fats industry constituted an integral part of the food-processing industry as a whole; policies should therefore be formulated with this in mind.

5. Analysing the recommendations of the First Consultation Meeting on Vegetable Oils and Fats (1977), it appeared that no real obstacles exist to the transfer of technology for downstream processing. It was felt that the main problems today were upstream in controlling the supply of raw materials at reasonable costs, and that industry should take the lead in establishing this upstream link. There was a consensus that in developing countries the link between producers of raw material and processing plants had to be strengthened. This would ensure the required continuous and guaranteed supply of raw materials to the plant as well as providing security to the farmer. Guidance on this matter should be provided by UNIDO by listing actions to be taken in order to strengthen existing links and better control on the costs arising between raw material production and the processing industry. It was agreed that there was scope for international industrial co-operation including transfer of technology to support the strengthening of those links.

III

6. The Expert Group was of the view that in considering further downstream processing of oils and fats, economic viability and feasibility of the projects should first be established and market research should be done. The projects should primarily be oriented towards meeting domestic demand, while exports should be considered as a means of marketing surplus production. Export of raw materials may be considered in order to allow for the import of other raw materials better suited for local processing and consumption.

IV

7. The Expert Group identified the following areas in which international action was desirable:

- (a) The preparation of a directory of sources of equipment, technology, know-how and related industrial training;
- (b) The elaboration of comprehensive guidelines for the conclusion of joint venture agreements in the vegetable oils and fats industry;
- (c) The promotion of exchange of information and co-operation between research and development, and scientific institutes;
- (d) The rehabilitation of agricultural produce, and of vegetable oils and fats bearing crops, particularly in African countries, in order to respond to local needs and to avoid increasing dependence on imports of dominant raw materials.

Summary of discussion

8. The issue paper entitled "Downstream processing activities in vegetable oils in developing countries - promotional measures" (UNIDO/PC.90) was introduced by the secretariat.

9. Participants stressed that the significance of this industrial sector stemmed primarily from its role in satisfying nutritional needs of the population but also from the possibility it created for manufacturing a wide range of non-edible products.

10. In the last decade, total world-wide edible fat production had increased by more than 3% per year, e.g. almost twice as much as actual population growth in the world. However, the production of food by developing countries, as a whole, was not fast enough to narrow the gap between their total food output and the nutritional needs of the population. Hence, the promotion of the vegetable oils and fats industry in developing countries deserved continuous support, as an important source of processed food (energy, proteins, vitamins).

11. Due to the natural properties of oilseeds and fruits, their transformation could lead to the production of animal feed as well as numerous non-edible products. This type of industrial activity has begun to be strongly promoted in some developing countries with a relatively well developed vegetable oils and fats sector and a sizeable oilseeds or fruits supply (Brazil, Egypt, India, Malaysia, Nigeria, Philippines). However in a majority of developing countries, the importance of promoting downstream processing activities was underestimated.

12. At the request of the Chairman, participants briefly outlined the downstream processing activities in their countries and attempted to identify areas of international co-operation for possible consideration at the Second Consultation. It was emphasized that development of downstream processing activities in developing countries was economically and technically possible, since there was relatively easy access to technology and equipment.

13. Attention was drawn by several participants to the need for conducting market research before any downstream operation was promoted. The broadening of the vegetable fat activity required effective demand, which was determined primarily by the purchasing power of the population at country and regional levels. Other participants considered that export-oriented production could be justified in some specific situations.

14. A large number of participants stressed the importance of regular supply of raw materials to the processing sector. In a majority of developing countries the supply of oilseeds to the processing sector in terms of quantity and quality was inadequate and constituted a serious obstacle. The irregular supply of raw materials was considered to be one of the basic reasons for the low level of capacity utilization, resulting in low productivity of this sector.

15. Another reason for the underutilized capacity was inadequate maintenance of technical equipment, especially in newer plants. Taking into account the requirements of integration of production, processing and marketing of oilseeds, participants considered that poor maintenance created enormous bottlenecks and reduced plant profitability.

16. To overcome these problems, several proposals were offered, which could involve international co-operation. Some participants pointed out that many developing countries needed assistance in surveying their existing and potential raw material for processing vegetable oils and fats; they considered that there were some crops, in developing countries, which could constitute an outstanding raw material for further processing but had so far not been exploited (for example, babassu in Brazil, "Aguaje" in the Amazon region). The development of alternative sources of raw material could contribute to overcoming the inadequate supply of raw materials. However, a few participants drew attention to the fact that the use of these unconventional sources of raw material required solving first the problems of collection and transportation.

17. Some participants indicated that the availability of raw materials could also be augmented through use of high yielding oilseeds and fruits. New activities in breeding and growing of seeds like soybean, rapeseed and sunflower seed had considerably increased the output of agricultural production in industrialized countries. International co-operation might facilitate the propagation of new varieties of oilseeds and crops in developing countries.

18. It was concluded that industry itself should promote the establishment of upstream links with producers of raw materials to ensure the required continuous and guaranteed supply of raw materials to the plant. The provision of security measures to the producers of raw materials should be taken into account. There was a wide scope for international co-operation to support the strengthening of those links including preparation of a document outlining the steps to be taken in order to achieve more viable links between agriculture and industry.

19. There was a consensus on the importance of physical infrastructure, such as drying, storage and transportation of harvested oilseeds; perishable oil-fruits, such as oil palm, had to be processed immediately after harvesting to avoid their spoilage.

20. Some participants were of the opinion that the establishment of processing plants, especially with more advanced technology (solvent extraction), should be considered not only in the context of raw material availability but also with regard to requirements in terms of energy and of the supply of subordinate materials. Hence, the location of the processing plant should be determined by all different factors influencing its performance.

21. It was also stated that a high quality of products should be assured in developing countries to enable them to compete with products of foreign companies.

22. Some participants noted that the packaging methods used in industrial plants need substantial improvement: development of packaging technology and its wider introduction in this industrial sector could also be a subject for international co-operation.

23. Attention was also drawn to the requirements for safety in industrial plants especially where more sophisticated technologies had been installed. The experience of the industrialized countries should be fully taken into consideration when introducing both proper maintenance and safety systems.

24. Some participants stressed the need for promoting production of vegetable protein for human nutrition. The essential component of meal and cake obtained from oil milling operation was protein. The protein yield per hectare was about 5 times higher when growing soybeans than when raising cattle or other livestock. In the view of many participants one of the possible ways of solving nutritional problems in developing countries was the dissemination and adoption of technologies enabling the production of vegetable protein from vegetable oilseeds for human consumption.

25. With regard to technology, the view was expressed by several participants that while technology for downstream processing activities was generally available on foreign markets, there was a need to differentiate between the option to use either simple and cheap installations or more sophisticated technology. In addition, more sophisticated technologies for producing such products as fat fractions, vegetable proteins, pet foods or oleochemicals could generally only be adapted by a country with long experience in manufacture and application. One participant suggested that UNIDO prepare a directory of sources for equipment, technology and

know-how, etc. which would allow the dissemination of information to developing countries.

26. It was observed that one of the possible areas for international co-operation in the field of technology was through research on the technical aspects of processing oil from rice bran. A proposal for convening an international meeting to consider this issue in detail was raised by a participant.

27. Several participants considered that efficiency of production required the setting up of close links between scientific institutions, research centres and industrial enterprises as well as between scientific institutions themselves. In their view, internal and international co-operation in this field should contribute to a steady upgrading of technology and to the improvement of quality of products.

28. It was strongly recommended that training of industrial manpower and the upgrading of management systems should become permanent activities of any processing enterprise in developing countries, since sophisticated and complex technological processes required skilled personnel guided by experienced and qualified managerial cadres. While the various forms of training were mentioned, it was suggested that existing centres and institutions offering training facilities in this field should be identified.

29. In the view of many participants, the elaboration of comprehensive guidelines for the conclusion of joint-venture agreements in the vegetable oils and fats industry could constitute a possible means to promote international co-operation.

30. During the discussion, a few participants pointed out that this sector was handicapped by fluctuation of prices for oilseeds and fruits and that the setting up of international stabilization schemes with fixed prices for basic crops could have a positive impact on the efficiency of the sector. Doubts were expressed, however, by many participants on whether the introduction of such stabilization schemes was useful.

Annex 1

LIST OF PARTICIPANTS

Brazil

Juan Lichtenstein-Schlezinger, Chemical Engineer/Consultant,
24 de Outubro 925 Apto. 603, 90.000 Porto Alegre

Burma

U Myint Pe, Chemical Engineer, 7-D Pyidaungsu Yeiktha, Haipin Road,
Rangoon

Egypt

Kamal E. Beyali, Consultant, 55, Giza St., Giza, Cairo

France

Jean-Pierre Bertrand, Chargé de recherches, Institut national de la
recherche agronomique, 6, Passage Tenaille, 75014 Paris

Germany, Federal Republic of

Marius K.H. Stritzl, Managing Director, K.G. HOBUM AFRIKA,
Seehafenstrasse 2, 2100 Hamburg 90

Hungary

Jozsefine Kurucz, General Manager, Enterprise for Vegetable Oils
and Detergents, Budapest XV, Horvath Mihalyut 2

India

M.K. Kundu, Director, Ministry of Food and Civil Supplies, Government
of India, Directorate of Vanaspati, Vegetable Oils and Fats, 90 Nehru
Place, New Delhi 110 019

M. Pandurang Shenoy, General Manager of Production, Tata Oil Mills Co.Ltd.,
Bombay House, Homi Mody Street, Fort Bombay 400 023

Italy

Maurilio Renoldi, Chemical Engineer/Consultant, Via Legnani 9,
21047 Saronno

Malaysia

M. Kassim Salleh, Deputy Managing Director, Jomalina Sdn.Bhd.,
P.O. Box 12709, Kuala Lumpur

Nigeria

J.P. Fierens, Senior Factory Manager, Agbara Factory,
Lever Brothers Nigeria Ltd., Dock Yard Road 15,
P.O.B.15, Apapa

Philippines

Ramona P. Miguel, Director, Board of Investments, Industry
and Investment Bldg., Buendia Ave. Ext. Makati, Metro Manila

Sri Lanka

T.K.G. Ranasinghe, Coconut Processing Consultant, 250/6 High Level Road,
Kirilapona, Colombo 6

United Kingdom

F.V.K. Young, Director, Vernon Young Consultant Ltd., 67 Freshfield Road,
Formby, Liverpool 137 3HL

United States of America

D.R. Erickson, Director, Soy Oil Programs, American Soybean Association,
777 Craig Road, St. Louis, Mo. 63141

Yugoslavia

J. Turinski, Director of Development, Industrija Ulja, 23000 Zrenjanin,
Temisvarski drum br.14

Inter-governmental Organization

Commission of the Cartagena Agreement

Fernando Hurtado, Head, Food Industries Programme, Agrarian University
"La Molina", Francisco Lazo 2355, Lima, Peru

Observers

K. Fangauf, American Soybean Association, Pelzerstrasse 13
2000 Hamburg 1, Federal Republic of Germany

Thomas J. Brennan, Director, East European Office
American Soybean Association, Gatterburggasse 18/2/3, 1190 Vienna, Austria

Annex 2

LIST OF DOCUMENTS

A. Issue paper

K.K. Gander: Study on downstream processing activities in vegetable oils in developing countries - promotional measures

UNIDO/PC.90

B. Background papers

Production and market situation for the food-processing industry with special emphasis on vegetable oils and fats

ID/WG.404/3

Excerpts from the Draft World-Wide Study on the Vegetable Oils and Fats Industry: 1975-2000

UNIDO/ICIS.46

Extracts from a Study on the Vegetable Oils and Fats Industry, Chapter 4, first draft, January 1984, prepared by Tropical Development and Research Institute

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Report on the Expert Group Meeting on measures and forms in promoting integrated development of the vegetable oils and fats industry within the food-processing industry

ID/WG.404/5

Report of the First Consultation on the Food-Processing Industry

ID/278

Report of the First Consultation on the Vegetable Oils and Fats Industry

ID/WG.260/9

C. Country papers

D.R. Erickson: Review of modern soy oil processing techniques

D.R. Erickson: Soybean processing in the United States

M.K. Kundu: General observations on the Issue Paper (UNIDO/PC.90)

M.K. Kundu: Some of the possible areas of international co-operation in the field of vegetable oil processing

J. Kurucz: Processing of oilseeds and vegetable oils in Hungary

J. Lichtenstein-Schlezing: Downstream processing in the Brazilian vegetable oils and fats industry

J. Lichtenstein-Schlezing: Downstream processing in the vegetable oil industry; its technology in developing countries

U Myint Pe: Downstream processing activity specific to rice bran oil industry in the developing countries

B. Country papers (continued)

T.K.G. Ranasinghe: Downstream processing activities of vegetable oils and fats industry in Sri Lanka

M. Kassim Salleh: Downstream processing activities in the vegetable oils and fats industry in Malaysia

M.P. Shenoy: Brief paper on status of downstream processing in India of vegetable oils and fats industry

J. Turinski: A short survey on Yugoslav oil and fat industry

F.V.K. Young: Downstream processing in the vegetable oils and fats industry in developing countries - United Kingdom situation.

