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FOOD ENGINEERING CONSULTANCY SERVICES ^{1/}

prepared by
the Secretariat of UNIDO

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1. Introduction

UNIDO is of the opinion that great benefit could be derived from the establishment of a food engineering consultancy service. The UNIDO food engineering consultancy service could synthesize the activities contributing towards the independent development of domestic engineering skills in the food processing sectors. By providing expertise in food processing, elaboration of feasibility studies and detailed projects for new and reconstructed food industries, the repair and maintenance of food processing equipment, as well as sanitation materials and processes, including environmental issues, such as water treatment and effluent control, UNIDO could ensure the close co-operation of the production, research, processing and marketing sectors of national food industries at a vital stage in national development.

It is felt that the establishment of a food-processing consultancy service would contribute to greater efficiency in such agro-industrial sectors as sugar, meat and vegetable processing and bio-industry etc. A industrially oriented institution with clear-cut marketing responsibilities, technical assistance resources and manufacturing expertise would constitute an easily accessible centre with local staff capable of providing vital extension services to domestic food processing industries.

By establishing a food engineering consultancy service which enjoys the support of the various processing industries, the industries would be in a far better position to develop their markets and work with developed countries. Furthermore, only a properly organized service with complementary research facilities responsible to, and controlled by the Government and the various industries can provide the technology and consultancy services which are essential to the further rational industrialization of this sector.

Furthermore, the development of import-substituting ventures in the food-processing sector would help to save foreign exchange which could be utilized to finance new development programmes. However, prior to establishing new industries or expanding existing plants, certain difficulties have to be overcome: extensive market research has to be carried out; product quality has to be raised to standards acceptable to the various markets; and agricultural production and other methods of supply have to be properly established to ensure the availability of good quality raw material at prices conducive to the viability of efficient processing industries. In the final analyses, the proper vertical integration of all processing stages and their planning by a single market-oriented consultancy service would ensure industrial efficiency and the application of effective market policies to the benefit of the food industries on a country-wide basis.

2. Background Information

a) People's Democratic Republic of Yemen

The Food Industry plays a prominent role in the industrial sector of this country since its production at the end of the current plan (1974/1979) will represent more than 40 per cent of the total industrial production. Among the most important sub sectors the Government gives priority to the processing of meat, fish, tomato paste, sugar, beer, dates and bottling of aerated water.

b) Sultanate of Oman

Although agricultural production is basically of subsistence nature, a number of cash-crops are grown and exported as raw materials (especially dates, limes, tobacco and fruit and vegetable). Also the country produces bananas, mangoes and other fruits which could be industrialized. In addition, the livestock also plays an important role although there is a scarcity of feed supply. The Government places great emphasis on developing the food industry sector since the country has been importing substantial quantities of food products. The fields of particular interest are flour milling, sugar, dates, vegetable oil, feedstuff, meat and fish industries.

c) Yemen Arab Republic

The country imports a large amount of food products which increases every year and the Government is strongly interested in developing the local food production. Particular importance is given to fish, flour milling, cotton oil and animal feed production as well as soft drinks and cigarettes industry.

3. Institutional Framework

The proposed consultancy service would be a semi-public body supervised by the Government through the appropriate ministry. The industries would enjoy full access to its facilities and the service would thus develop into a Central Consulting Agency for food processing project preparation, promotion and implementation.

4. Objectives of the Project

A. Long-range objectives

The project's long-range objectives are to promote the establishment of local processing industries to raise and maintain the high standard of quality of their products and to increase the exportation of

processed products. The service will provide public and private industries with marketing data for their export products as well as technical and economic data required for the establishment of factories. Furthermore, it will establish export standards and provide the industries with advice and assistance in exercising control over the quality of their products.

A further long-range objective is the gradual betterment of both the producers' and processors' position and that of the importers, all of whom have an identity of interest in the maintenance of profitability. Sensible co-operation under the guidance of the consultancy service is absolutely vital to the sound development of the country's industries.

Yet another long-term objective is the establishment of a team of local economists and engineers capable of completing pre-feasibility and feasibility studies for local industries. Hence, systematic on-the-job training of local counterparts through the international experts recruited for the shake-down period will be most essential. A number of fellowships would thus be required.

B. Immediate objectives

The immediate objectives of this project are as follows:

1. to identify industrial investment opportunities;
2. to formulate industrial projects;
3. to prepare market studies for potential processed products for export;
4. to prepare technical and economic feasibility studies for the establishment of factories in the country;
5. to provide technical consultancy services;
6. to promote investment in factories to produce processed products for export and provide potential investors with information on investment regulations;
7. to transfer the results of the Food Engineering Consultancy Service's research results to industry;
8. to organize the use of the Institute's Service facilities for food quality control and product development research by the industrial community;
9. to advise food industry on up-to-date management and technological problems;
10. to assist food industry to raise efficiency and quality to required standards;
11. to assist food industries to achieve a food export level.

5. Work Plan

General

The Centre would be created by UNDP and the Government either as an attachment to existing food research centres or as an independent body; however, it is to be a semi-public body, financed to the greater part by the private industries, to whom it provides its services. This will ensure that the service concentrates its activities directly upon assisting the local industries in their development.

The service would be organized in two departments, both of which have a Department Chief. The Department Chiefs will report to the Director, who, in turn, will be responsible to the Board of Directors. The two Departments will be:

Economic Department with the programme of:

- Market research including marketing and distribution techniques;
- Collection and analysis of market statistics;
- Establishment of contacts with various industries;
- Export promotion policies;
- Maintenance of liaison with national industry associations;
- Preparation of economic feasibility studies;
- Documentation on all economic aspects of local industries;
- Staff training in economics and financing;
- Book-keeping and accountancy services;
- Financial programming services.

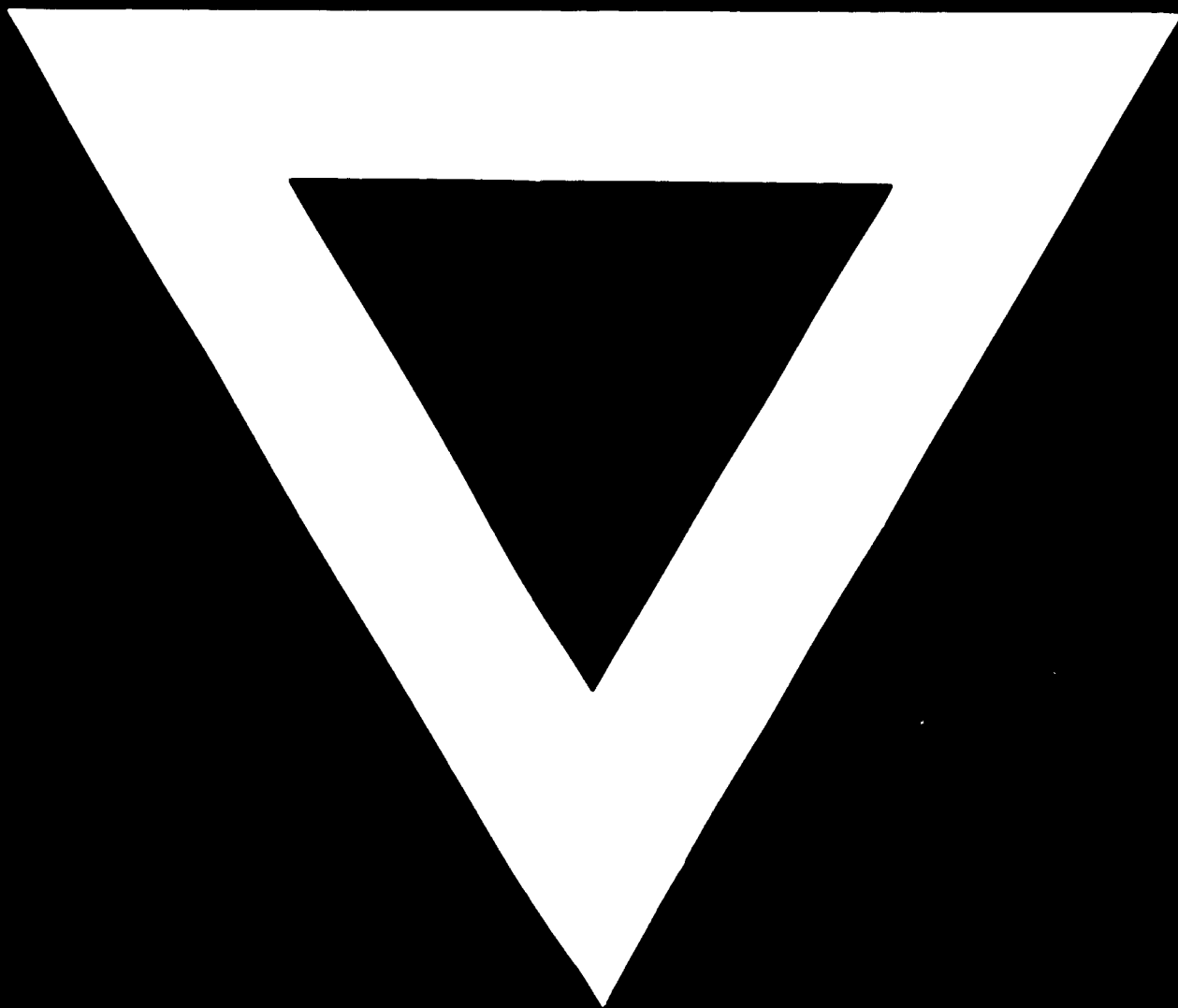
Technology Department with the programme of:

- Processing and product development;
- Technical consultancy services including the evaluation of offers and assistance in the maintenance of equipment, etc;
- Technical feasibility studies;
- Staff training;
- Transfer of technology;
- Laboratory services for quality control, etc;
- Standardization;
- Production programming;
- Plant-level assistance;
- Packaging of food products;
- Technical management;
- Training the staff of food industry clients;
- Repair and maintenance of control instruments for food industry;
- Sanitation techniques;
- Plant installation and operation service.

ANNEX I

FOOD ENGINEERING CONSULTANCY SERVICE
ANALYSIS OF PROPOSED CONTRIBUTION BY THE UNDP DURING FIVE-YEAR PERIOD

Particulars	Total (US\$)	1st Year	2nd Year	3rd Year	4th Year	5th Year
Project Manager	90,000	30,000	30,000	30,000		
Industrial Economist	90,000	30,000	30,000	30,000		
Food Technologist	90,000	30,000	30,000	30,000		
Consultants (Short-term)	210,000	42,000	42,000	42,000	42,000	42,000
Laboratory Equipment	80,000	40,000	30,000	10,000		
Pilot and Demonstration Equipment	90,000	50,000	40,000			
Technical Library	10,000	5,000	2,000	1,000	1,000	1,000
Fellowships	85,000	17,000	17,000	17,000	17,000	17,000
Miscellaneous (5%)	44,700	8,940	8,940	8,940	8,940	8,940
TOTAL US\$	789,700	252,940	229,940	168,940	66,940	58,940



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