



TOGETHER
for a sustainable future

OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.



TOGETHER
for a sustainable future

DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

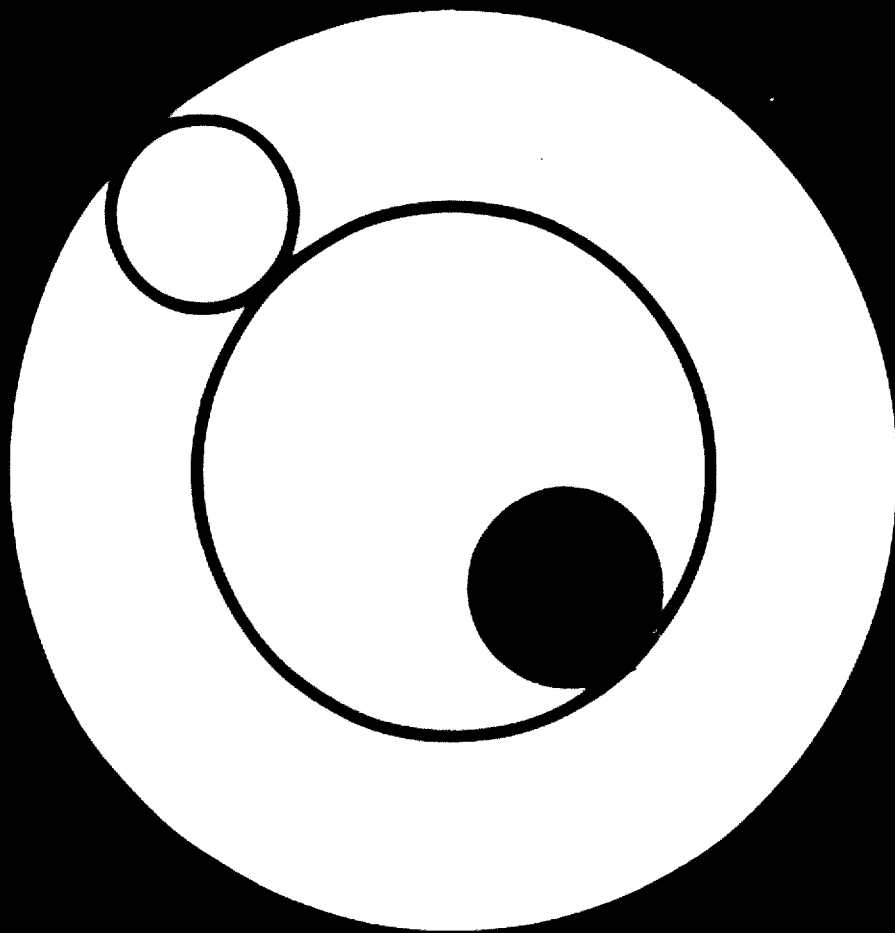
FAIR USE POLICY

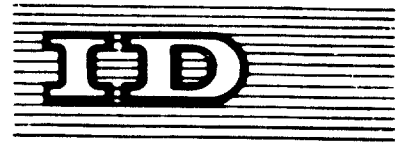
Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org





302050

United Nations Industrial Development Organization

Distr.
GENERAL

ID/B/23/Add.III *
9 April 1968

ORIGINAL: ENGLISH

Industrial Development Board

Second Session

Vienna, 17 April - 14 May 1968

Agenda item 6

THE INDUSTRIAL DEVELOPMENT ACTIVITIES OF THE UNITED NATIONS SYSTEM OF ORGANIZATIONS FOR THE YEAR 1967

Third Consolidated Report

FAO'S ACTIVITIES IN THE FIELD OF INDUSTRIAL DEVELOPMENT - 1967 ANNUAL REPORT

Note by the Executive Director

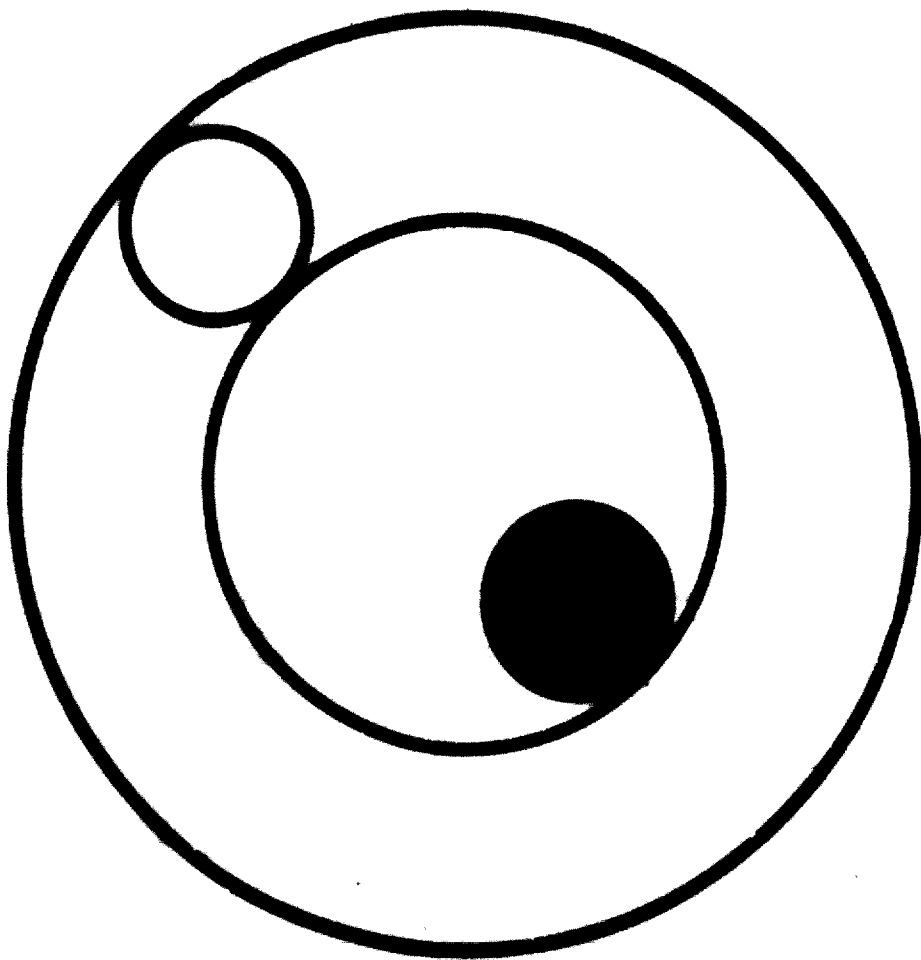
The attached report of the activities of the Food and Agriculture Organization in the field of industrial development is transmitted to members of the Industrial Development Board at the request of FAO. This report is brought to the Board's attention as a supplement to the information contained in the Third Consolidated Report of the Industrial Development Activities of the United Nations System of Organizations.

* As the attachment to this document is available in a limited number of copies, it is being distributed only to members of the Industrial Development Board.

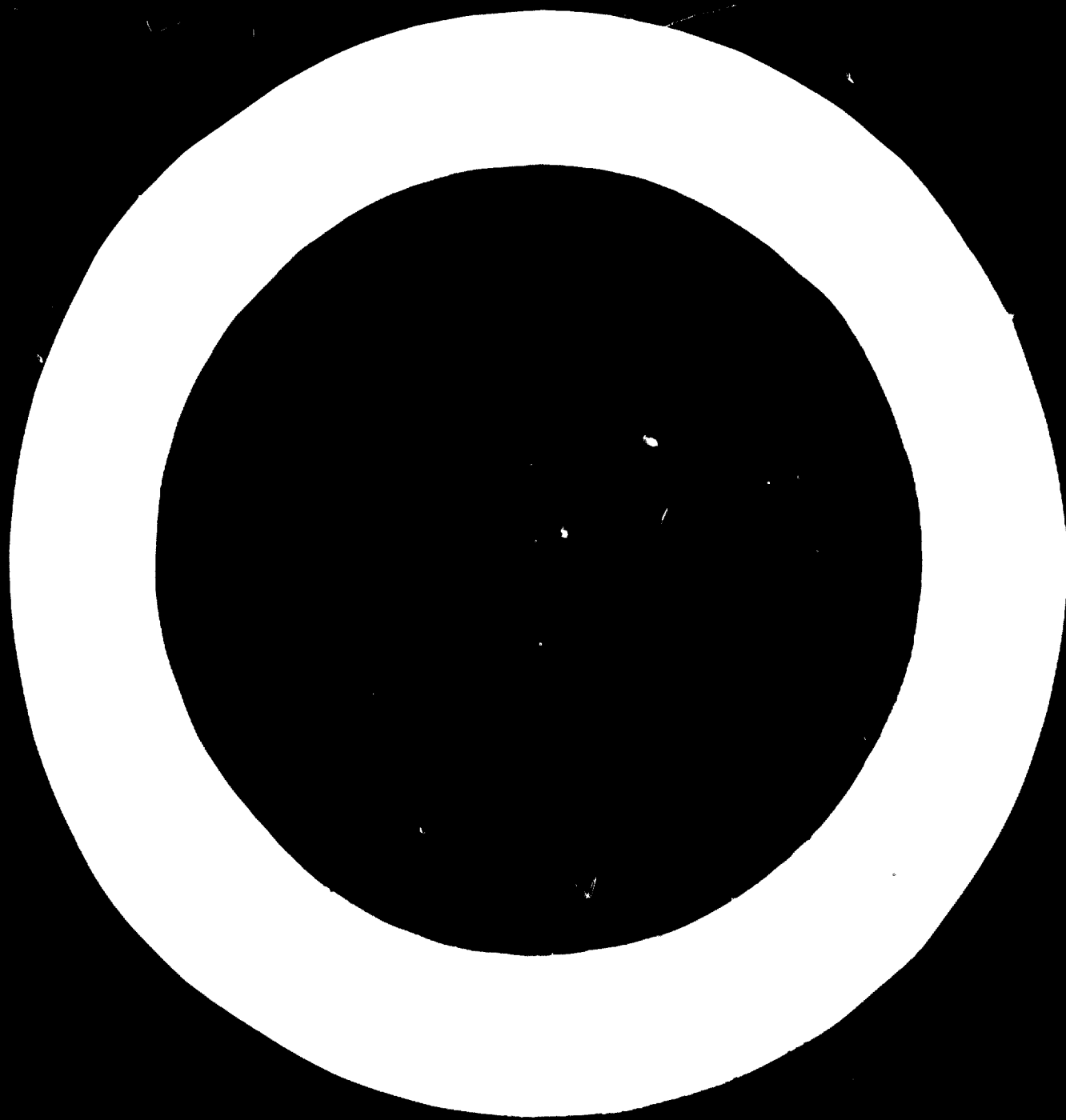
We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.

FAO'S ACTIVITIES IN THE FIELD OF INDUSTRIAL DEVELOPMENT

1967 Annual Report



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS



FAO'S ACTIVITIES IN THE FIELD OF
INDUSTRIAL DEVELOPMENT

1967 Annual Report

for the

Second Session

of the

INDUSTRIAL DEVELOPMENT BOARD OF THE
UNITED NATIONS ORGANIZATION FOR INDUSTRIAL DEVELOPMENT

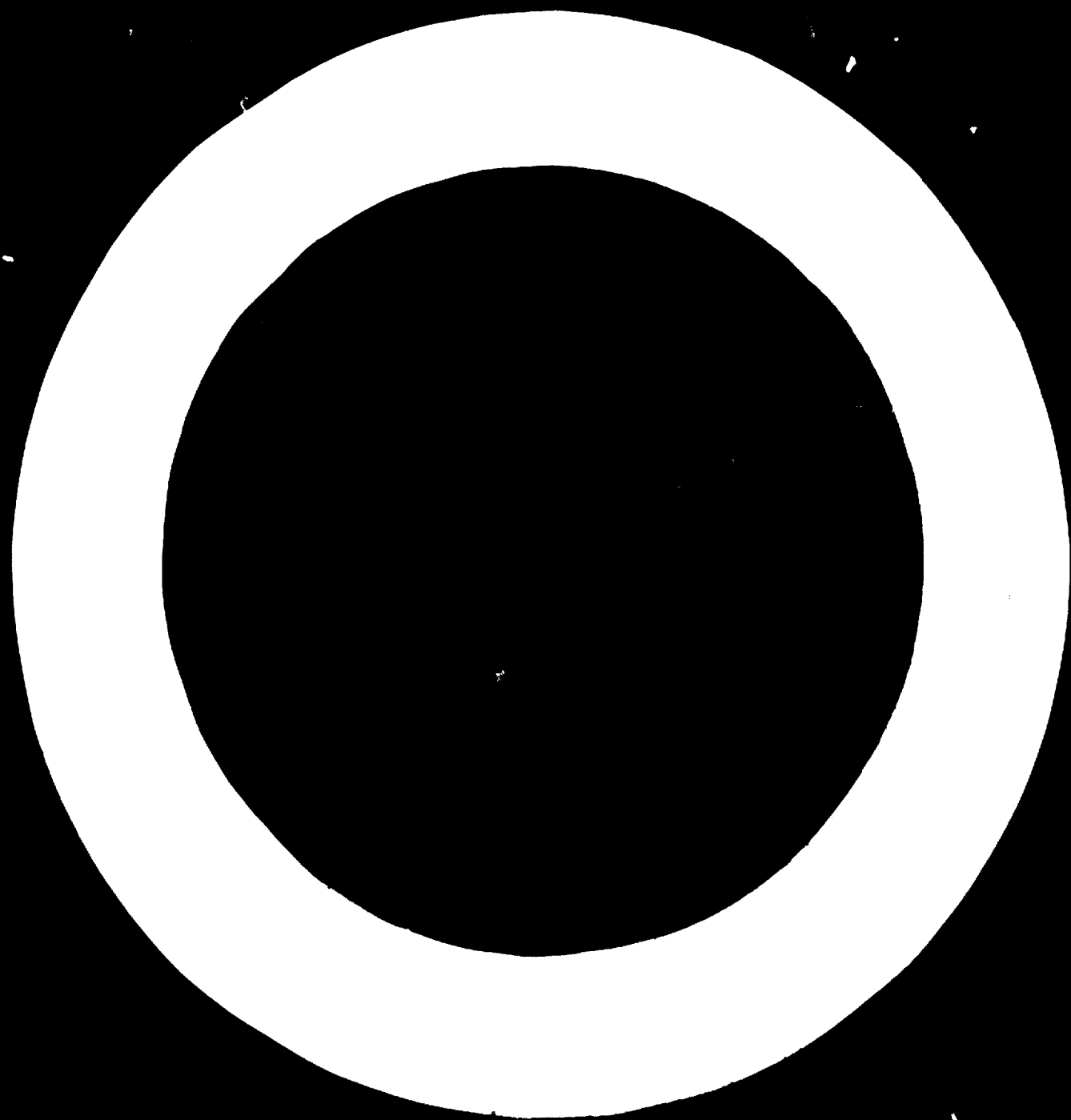
as a contribution to the

Third Consolidated Report on the Industrial
Development Activities of the United Nations
System of Organizations, being prepared
pursuant to ECOSOC Resolution 1081-C (XXXIX)
of 30 July 1965 and 1181 (XLI) of 5 August 1966.

Compiled in the Office of the Assistant Director-General,
Technical Department, with collaboration from the Members
of the FAO Inter-Divisional Working Party on Industrial
Development Activities.

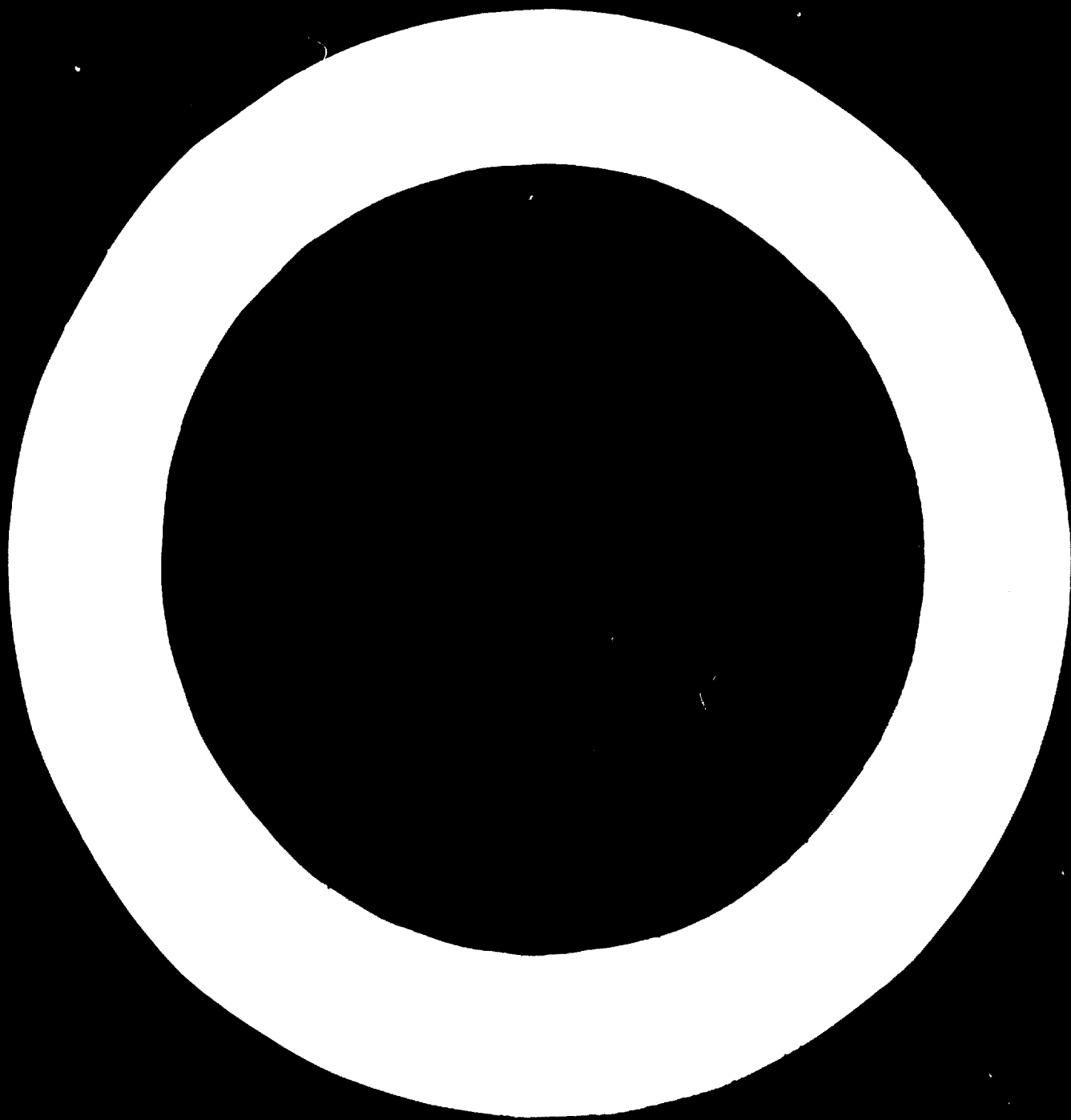
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Rome, 1967



FOREWORD

- (i) This 1967 Annual Report supplied to UNIDO and describing FAO's Activities in the Field of Industrial Development has been prepared pursuant to ECOSOC Resolution 1081-D (XXXIX) of 30 July 1965, calling for "a single analytical annual report summarizing the work in the field of industrial development of the United Nations, including the Regional Economic Commissions and the work of the other agencies of the United Nations System," requesting "the Secretary-General to undertake consultations with other agencies of the United Nations System with the objective of developing a framework for such a consolidated report."
- (ii) This report also takes into account ECOSOC Resolution 1181 (XLI) of 5 August 1966 as well as the indications on the nature of such future consolidated annual reports as provided by the Industrial Development Board in its report submitted to the UN General Assembly in document A/6715, particularly Chapter VIII. Account has also been taken of the wishes and views of the UNIDO Secretariat in the format and contents of this FAO contribution.
- (iii) This is the second such FAO report; the first was the "1966 Annual Report on FAO's Activities in the Field of Industrial Development" ID/B/3, Addendum 3, dated November 1966, which was presented to the First Session of the Industrial Development Board of the United Nations Industrial Development Organization.
- (iv) The ultimate framework for such consolidated annual reports hopefully over the years will be improved and developed into the most useful pattern, in the light of continuing experience and co-operative efforts. The further consultations on this envisaged in the ECOSOC resolution regarding the framework and related matters were not brought to a final stage during 1967 and assumedly will be continued in the time ahead. Thus, this 1967 FAO Annual Report consists of factual information on selected FAO programs and projects which were in operation during 1967.



CONTENTS

FOREWORD

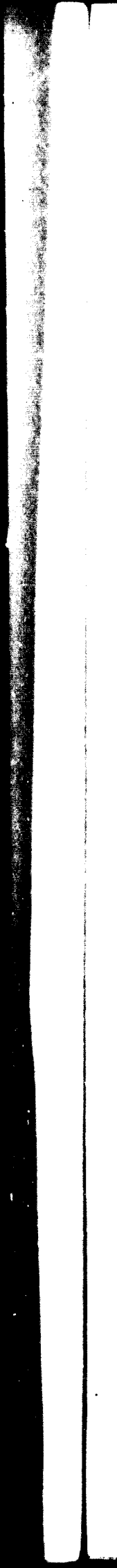
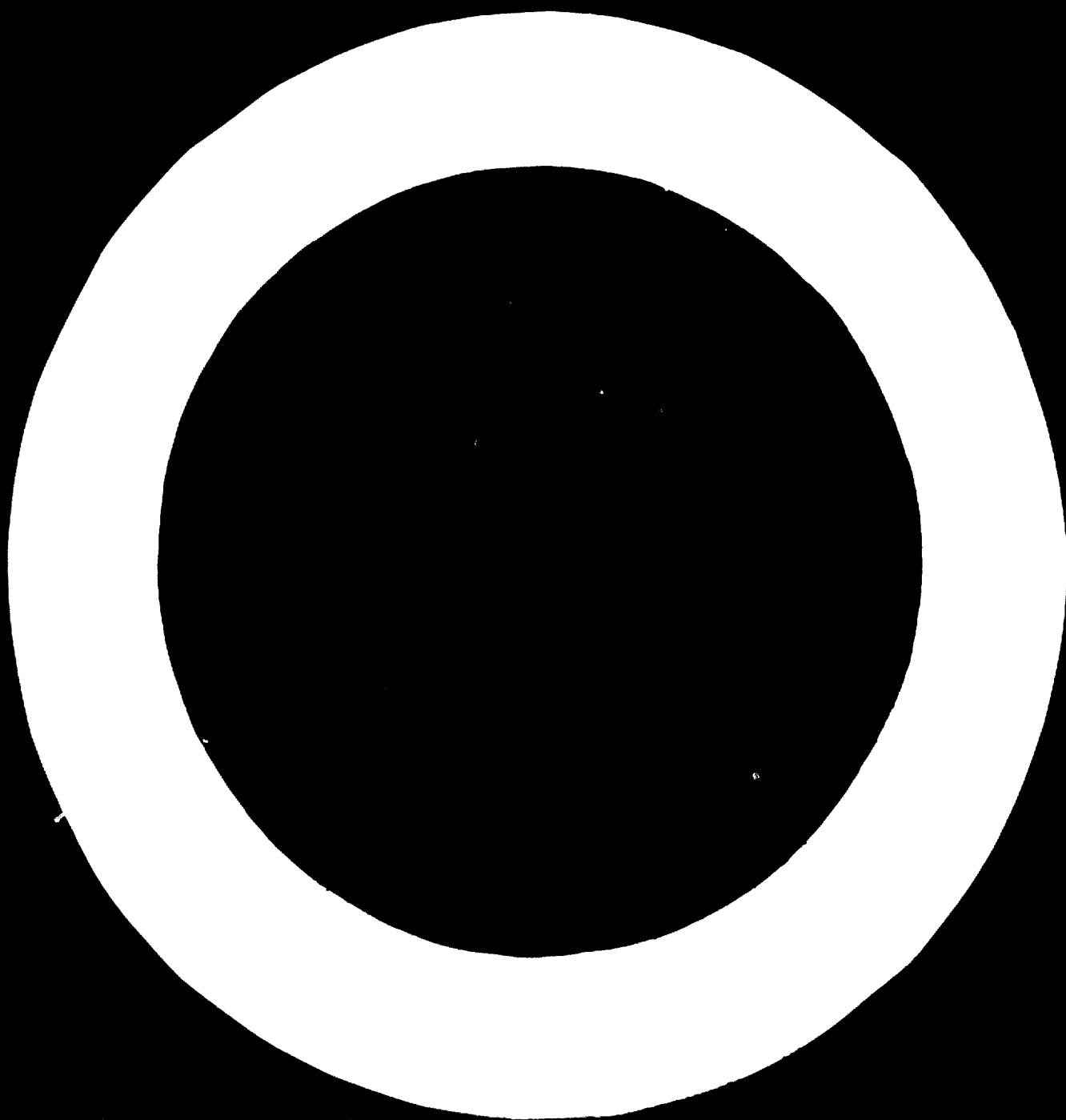
I. INTRODUCTION

II. INFORMATION REGARDING A SELECTION OF REGULAR PROGRAM ACTIVITIES DURING 1967

1. Indicative World Plan
2. Co-operation with the UN and Others
3. International Seminars, Courses and Technical Meetings.
4. FAO/Industry Cooperative Program
5. FAO/IBRD Cooperative Program and Cooperation with Development Banks
6. Study on Food Production Resources in Agricultural Development
7. Issue of Specific Publications
8. Miscellaneous Activities

III. FIELD ACTION PROJECTS AND PROGRAMS

1. Food and Food Products Industries including those based on both animal and plant products
2. Industries Processing Agricultural Products other than Food
3. Forestry and Forest Industries including Pulp and Paper
4. Fisheries Industries
5. Projects dealing with policies and planning, economic, social and institutional aspects and problems of industrial development based on raw materials derived from agriculture, forestry and fisheries.
6. World Food Program Assistance to development projects in the field of industry.



I. INTRODUCTION

1. This 1967 Annual Report on FAO's Activities in the Field of Industrial Development describes in broad outline some specific regular program activities dealing with the production, processing, marketing and distribution of raw materials derived from agriculture, forestry and fisheries. (Chapter II) Particular emphasis is furthermore given to a selected number of field action projects which were in operation during 1967. (Chapter III)

Identification of FAO's Role and Responsibility

2. The processing of raw materials derived from agriculture, which, in addition to crops, includes animal husbandry, forestry and fisheries, has been part of FAO's Program of Work and Budget since FAO's inception.

3. The work is of a great variety and is dealt with by the appropriate parts of the Organization and subject matter specialists, and is integrated in the overall program of work, because development planning based on the raw materials referred to in the previous paragraph cannot be dealt with independently from the various aspects of production, or catch, the handling of the raw materials, nor the social considerations affecting the people. Thus, such planning needs to ensure that full co-operation can be achieved with farmers, fishermen and forest workers who are the first in the chain that leads to processing, marketing and distribution activities.

FAO's Specific Areas

4. FAO's role and responsibility in the field of industrial development is to assist its Member Governments in such matters as:

- (a) the formulation of policies and review of plans in order to accelerate industrial development based on renewable natural resources;
- (b) analysing economic, social and institutional, organizational and administrative aspects required to implement such plans, and examination of the problems affecting implementation. This includes feasibility studies, raw material assessment, compilation of data regarding relevant economic characteristics of the processing industries such as value added, import content of inputs, optimum size, possibilities for regional economic cooperation, etc.;
- (c) development of programs and projects aimed at the education and training of personnel at different levels, and in a variety of disciplines, to accelerate the rate at which qualified skills become available to implement industrial development projects;
- (d) development of specific demonstration and research projects, leading to operation of pilot processing plants that make use of the most appropriate modern techniques and technologies as determined by the raw material concerned, taking into due account new products and marketing development, consumer preference, social habits, and other factors that require consideration in order to arrive at profitable operation;
- (e) fostering products processing investment projects through preparation of investment plans, feasibility studies and raw material assessment, etc.

5. Sector-wise FAO assists in the development of the following categories of industries:

- (a) Food and Food Products Processing industries, including those based on both animal and plant products.
- (b) Industries Processing Agricultural Products other than Food (e.g. cotton, wool, tobacco, natural fibres, hides, skins and leather, agricultural residues such as cereal straw, bagasse, agricultural by-products and waste, etc.).
- (c) Forestry and Forest Industries, including Pulp and Paper.
- (d) Fisheries Industries.
- (e) Industries for the Supply of Essential Requisites to develop Agriculture, Forestry and Fisheries.

6. It is obvious that industrial development requires action in many more fields than those which have been briefly listed in the previous paragraphs. Accelerated agricultural and forestry production requires provision for and a regular supply of improved seeds, fertilizers, insecticides and pesticides, vaccines and other animal medicaments, a wide range of tools for agricultural and forestry production, tractors and auxiliary equipment and machinery. The same is true for fisheries, where gear, boats, vessels as well as appropriately designed fishing harbours and ice plants are needed. Furthermore, equipment and machinery for handling, processing, storage, packaging and distribution of a great variety of products has to be manufactured for the processing industries. It is in a number of these fields that cooperation with others in the UN will undoubtedly lead to greater and complementary services to the Governments.

7. Action is also required in other fields to which FAO gives support and in which it cooperates with others within the UN System of Organization. Industrial development, especially for the rural areas, requires adequate supplies of water and energy, improvement and development of farm access roads, suitable transportation facilities including refrigerated transport for perishable food, establishment of improved farm service and market structures, organization of cooperatives and credit systems, and development of managerial competence, development of rural housing, etc.

8. These selected field action projects have been classified in Chapter III of this report, as follows:-

(1) Food and Food Products Industries Including those Based on both Animal and Plant Products

In this section, 28 projects are listed operated by FAO from UNDP-TA resources; 23 FAO operated projects utilizing a variety of resources, UNICEF, FFHC and other Trust Funds, and, in addition, 20 projects operated by FAO in co-operation with governments and UNDP-SF.

(2) Industries Processing Agricultural Products other than Food

In this section, 12 projects operated by FAO from UNDP-TA resources are listed dealing with the handling and processing of hides and skins, leather, wool, bone and meat meal from animal carcasses and a number of other agricultural products.

I. INTRODUCTION

1. This 1967 Annual Report on FAO's Activities in the Field of Industrial Development describes in broad outline some specific regular program activities dealing with the production, processing, marketing and distribution of raw materials derived from agriculture, forestry and fisheries. (Chapter II) Particular emphasis is furthermore given to a selected number of field action projects which were in operation during 1967. (Chapter III)

Identification of FAO's Role and Responsibility

2. The processing of raw materials derived from agriculture, which, in addition to crops, includes animal husbandry, forestry and fisheries, has been part of FAO's Program of Work and Budget since FAO's inception.

3. The work is of a great variety and is dealt with by the appropriate parts of the Organisation and subject matter specialists, and is integrated in the overall program of work, because development planning based on the raw materials referred to in the previous paragraph cannot be dealt with independently from the various aspects of production, or catch, the handling of the raw materials, nor the social considerations affecting the people. Thus, such planning needs to ensure that full co-operation can be achieved with farmers, fishermen and forest workers who are the first in the chain that leads to processing, marketing and distribution activities.

FAO's Specific Areas

4. FAO's role and responsibility in the field of industrial development is to assist its Member Governments in such matters as:

- (a) the formulation of policies and review of plans in order to accelerate industrial development based on renewable natural resources;
- (b) analysing economic, social and institutional, organisational and administrative aspects required to implement such plans, and examination of the problems affecting implementation. This includes feasibility studies, raw material assessment, compilation of data regarding relevant economic characteristics of the processing industries such as value added, import content of inputs, optimum size, possibilities for regional economic cooperation, etc.;
- (c) development of programs and projects aimed at the education and training of personnel at different levels, and in a variety of disciplines, to accelerate the rate at which qualified skills become available to implement industrial development projects;
- (d) development of specific demonstration and research projects, leading to operation of pilot processing plants that make use of the most appropriate modern techniques and technologies as determined by the raw material concerned, taking into due account new products and marketing development, consumer preference, social habits, and other factors that require consideration in order to arrive at profitable operation;
- (e) fostering products processing investment projects through preparation of investment plans, feasibility studies and raw material assessment, etc.

5. Sector-wise FAO assists in the development of the following categories of industries:

- (a) Food and Food Products Processing industries, including those based on both animal and plant products.
- (b) Industries Processing Agricultural Products other than Food (e.g. cotton, wool, tobacco, natural fibres, hides, skins and leather, agricultural residues such as cereal straw, bagasse, agricultural by-products and waste, etc.).
- (c) Forestry and Forest Industries, including Pulp and Paper.
- (d) Fisheries Industries.
- (e) Industries for the Supply of Essential Requisites to develop Agriculture, Forestry and Fisheries.

6. It is obvious that industrial development requires action in many more fields than those which have been briefly listed in the previous paragraphs. Accelerated agricultural and forestry production requires provision for and a regular supply of improved seeds, fertilizers, insecticides and pesticides, vaccines and other animal medicaments, a wide range of tools for agricultural and forestry production, tractors and auxiliary equipment and machinery. The same is true for fisheries, where gear, boats, vessels as well as appropriately designed fishing harbours and ice plants are needed. Furthermore, equipment and machinery for handling, processing, storage, packaging and distribution of a great variety of products has to be manufactured for the processing industries. It is in a number of these fields that cooperation with others in the UN will undoubtedly lead to greater and complementary services to the Governments.

7. Action is also required in other fields to which FAO gives support and in which it cooperates with others within the UN System of Organization. Industrial development, especially for the rural areas, requires adequate supplies of water and energy, improvement and development of farm access roads, suitable transportation facilities including refrigerated transport for perishable food, establishment of improved farm service and market structures, organization of cooperatives and credit systems, and development of managerial competence, development of rural housing, etc.

8. These selected field action projects have been classified in Chapter III of this report, as follows:-

(1) Food and Food Products Industries Including those Based on both Animal and Plant Products

In this section, 28 projects are listed operated by FAO from UNDP-TA resources; 23 FAO operated projects utilizing a variety of resources, UNICEF, FFHC and other Trust Funds, and, in addition, 20 projects operated by FAO in co-operation with governments and UNDP-SF.

(2) Industries Processing Agricultural Products other than Food

In this section, 12 projects operated by FAO from UNDP-TA resources are listed dealing with the handling and processing of hides and skins, leather, tobacco, coir, bone and meat meal from animal carcasses and a number of other agricultural products.

Furthermore, this list refers to two projects operated by FAO from UNDP Contingency Funds, one utilizing UNDP-TA and FFHC resources, and one operated by FAO from FFHC funds only.

Finally, reference is made to 7 FAO projects operated in co-operation with governments and UNDP-SF, one project dealing with wool, five with hides, skins and leather, and one with rubber.

(3) Forestry and Forest Industries including Pulp and Paper

This section deals with 10 projects operated by FAO from UNDP-TA resources, covering such subject matters as wood technology and wood working, timber grading, saw milling and other forest industries development.

Furthermore, descriptive details are given of 21 projects operated by FAO in co-operation with Governments and UNDP-SF, dealing with pre-investment studies in a number of forest industries, including pulp and paper development.

(4) Fisheries Industries

This section gives details of 14 FAO operated projects from UNDP-TA resources and 21 FAO operated projects in co-operation with governments and UNDP-SF as pre-investment projects in a variety of fisheries industries.

(5) Projects Dealing with Policies and Planning, Economic, Social and Institutional Aspects and problems of Industrial Development Based on Raw Materials Derived from Agriculture, Forestry and Fisheries

In this section, details are given of 23 FAO projects operated from UNDP-TA resources and 14 FAO projects operated in co-operation with governments and UNDP-SF as pre-investment projects; in addition 5 other projects were operated by FAO from other resources.

(6) World Food Program Assistance to Development Projects in the Field of Industry

Under this heading, 15 projects are listed as WFP support to development projects in the field of industry.

II. INFORMATION REGARDING A SELECTION OF REGULAR PROGRAM ACTIVITIES DURING 1967

1. Indicative World Plan

The work on this plan has been continued during 1967 and particular reference now is made to progress on a chapter aiming at an integration of agricultural and industrial development based on agriculture, forestry and fisheries.

This chapter will bring together in one place the IWP proposals regarding industries based on the processing of the products of the land and sea. The main objective is to draw some general conclusions with respect to the scope and limitations of the agriculturally based industrial development and to identify and analyse the major policy elements for consideration by national governments in setting up or expanding processing industries of various types in developing countries. In addition, the chapter will analyse in the global context the main

technological and economic features of processing industries in developing countries, their existing pattern and future strategy. It will also include policy proposals in this field and suggestions for desirable assistance to developing countries. To ensure that the competence of all units of the Organization is made full use of in drafting the chapter, a special Inter-Divisional Group had been set up to prepare the outline, to allocate responsibility for individual contributions and to establish procedure for the collection and integration of these contributions into one coherent story.

With regard to Indicative World Plan programs in the field of mechanized agriculture, crop handling and storage, a leading manufacturer of farm machinery has seconded to FAO for 1-2 years at no salary cost a senior executive to work on the Indicative World Plan. His main duty is to assist in preparing the technical and economic data required for estimating investments and costs of operation of agricultural equipment, including servicing needs and training requirements for machinery mechanics, operators and management personnel. His services are available to the Central Executive Unit on equipment inputs for the World Study, while he will assist the Area Teams in assessing the role and scope of mechanization in the various countries of the regions, covering land preparation, crop production, water lifting, crop protection and crop storage equipment.

As a contribution to the Indicative World Plan for Agriculture, preliminary reports on forest and forest industry developments have been prepared and reviewed for Western Latin America. Similar studies have been completed and are in process of review for two countries of Eastern Latin America, and country accounts have been prepared for the remaining countries of that region. A preliminary report on Asia and the Far East was completed and is being reviewed. Work on West Africa is currently in progress.

The assessments of potential forest industry development contained in these studies should go far in helping developing countries and regions in formulating plans and policies which will result in viable industries which can contribute effectively towards supplying needed goods and services.

2. Co-operation with the UN and Others

(1) with UNIDO

International Symposium on Industrial Development Athens, 29 November - 20 December 1967

At the request of UNIDO, the following seven papers were prepared by FAO for this Symposium:

- ID/CONF.1/14, 8 June 1967: Policies, Planning and the Economic, Social and Institutional Aspects of Industrial Development, Based on Agricultural, Forestry and Fisheries Resources.
- ID/CONF.1/15, 5 June 1967: Requisites of Production, Processing and Utilization to Develop Agriculture, Forestry and Fisheries.
- ID/CONF.1/16, 8 June 1967: Food and Food Products Industries
- ID/CONF.1/17, 8 June 1967: Industries Processing Agricultural Commodities other than Food.
- ID/CONF.1/18, 8 June 1967: Forestry and Forest Products Industries

ID/CONF.1/19, 8 June 1967: Fisheries Industries

ID/CONF.1/20, 8 June 1967: FAO Program of Work and Industry Support under the Freedom-from-Hunger Campaign.

Some of FAO's staff also participated in this Symposium.

(ii) with the UN and Other Specialized Agencies

In Asia and the Far East the Leader of the Advisory Group on Forest Industries participated in an ECAFE Action Group comprising eight specialists which, in accordance with a recommendation of the Asian Industrial Development Council, visited Indonesia, Malaysia, Singapore, the Philippines and Thailand to investigate possibilities for the establishment of one or more plants for the manufacture of pulp, paper and rayon products.

An important problem is expansion of the newsprint industry in Asia and the Far East. This was raised at the Conference of Asian Newspaper Executives called by the International Press Institute and held in Ceylon in March 1967. This Conference drew attention to the fact that newsprint imports cause a great drain on foreign exchange (estimated at \$53 million in 1966) among countries in the region. FAO was requested to undertake a study concerning the expansion of newsprint production in the region based on local raw materials, and preliminary steps in this direction have already been taken.

Following a request originating from the UNESCO Meeting on Book Development in Asia held in Tokyo in mid-1966, the FAO Group in Bangkok is also collaborating with UNESCO and ECAFE in a program of book paper development in Asia and the Far East.

In Africa, FAO collaborated with ECA and supplied experts for a sector study of forest industries, including pulp and paper, in the North African countries. A report has also been prepared on "The Demand and Supply of Cultural Papers in Africa" for the UNESCO Conference on Book Development scheduled to take place in Accra in February 1968.

A report on "Forest Products" is also under preparation for submission to the Second Session of UNCTAD to be held in New Delhi in February 1968.

3. International Seminars and Courses and Technical Meetings

UNICE Inter-regional Symposium on Technical Services and Facilities for Small-scale Industries

At the invitation of UNIDO, FAO participated in this Symposium held in Vedback, Denmark, and contributed a paper on "Technical Services and Facilities for Rural Industries".

Fifth International Summer Course on Industrialization

This course was held in The Hague, Netherlands, and organized by the Netherlands Universities Foundation for International Co-operation. FAO contributed to this course and enabled participants to discuss the FAO Activities in the Field of Industrial Development as described in the 1966 Annual Report.

Seminar and Study Tour, USSR.

Sawmilling formed an important part of the program for the Seminar and Study Tour which FAO, in co-operation with the Ministry of Timber, Pulp and Paper

and Woodworking Industries of the U.S.S.R., organized in 1966. The lectures and results of discussions and visits to the industry were published in a report which also contains interesting data about forest industries development in the U.S.S.R.

International Seminar on Wood Preservation in Tropical Countries, Germany

An "International Seminar on Wood Preservation in Tropical Countries" was held in Munich in August. This was organized in collaboration with IUFRO and the German Foundation for Developing Countries.

Man-made Forests, Australia

A "World Symposium on Man-made Forests and Their Industrial Importance" was organized and held in Canberra, Australia, in April. It was opened by the Minister of National Development and brought together some 170 participants from 42 countries. Three pre-symposium tours were arranged - one in New Zealand, covering parts of North and South Islands with emphasis on large-scale afforestation and forest industries based on Pinus radiata. Another covered eucalypt and pine plantations in South and East Australia, and the third covered industries based on southern eucalypts in Victoria and Tasmania.

The conclusions of this Conference are being published in a special issue of the FAO Magazine "Unasyva".

FAO Advisory Committee on Pulp and Paper Development

A regular feature at meetings of the FAO Advisory Committee on Pulp and Paper, which held its Eight Session in Rome in May 1967, is the FAO Annual Survey of the world's pulp, paper and paperboard production capacity, attracting attention from both governments and industry. The 1967 Survey included expansion plans to 1970 and thus made it possible for the first time to obtain a picture of the industries' past and probable development over a whole decade. The Survey also draw a preliminary picture of the development of pulp and paper capacities in various regions of the world from 1960 to 1970. The developing countries were making some progress: by 1970 their share of world paper capacity is likely to have risen from 3.7 to 5.5 percent, and of world pulp capacity from 2.7 to 4.7 percent. Even so, with two-thirds of the world's population, these countries would still have only about one-twentieth of the pulp and paper industry capacity and would continue to be heavily dependent on other regions to meet their full requirements.

At the regional level, FAO now has Forest Industries Advisory Groups; for Latin America, since 1956 (with ECLA, based at Santiago); for Africa, since 1964 (with ECA, based at Addis Ababa); and for Asia and the Far East in Bangkok, since mid-1967. Pulp and paper activities form a large share of the work program of each Group.

As indicated in the Annual Report covering FAO's activities in the field of industrial development during 1966, a Review Consultation on pulp and paper development in Latin America organized jointly with ECLA in March 1966 was designed to pave the way for a Second Conference on Pulp and Paper Development in Latin America. This Conference, now scheduled to take place in Mexico in 1969, will concentrate on the feasibility of expanding the newsprint and craft paper industry in the region.

Wood-based Panels

Action arising from the First Session of the FAO Committee on Wood-based Panel Products, held in Rome in December 1966, included requests to FAO for a survey (in collaboration with ECE) of world capacity to manufacture wood-based panels; suggestions for expanding the market for wood-based panels in the developing countries; and a number of other items. Work on these items has already started and they will be discussed at the next session of the Committee, planned for October 1968.

Fisheries Industries

Several activities are to be reported here, such as:

- First Ad Hoc Consultation of Experts on Code of Practice for Fish and Fishery Products, held in Rome, Italy
- Group Fellowship Study Tour on the Freezing and Canning of Fish, Industrialization of By-Products, held in the U.S.S.R.
- Technical Conference on the Freezing and Irradiation of Fish, held in Madrid, Spain
- European Inland Fisheries Advisory Commission
 - (a) Working Party on Recent Developments in Fish Food Technology, held in Rome, Italy
 - (b) Working Party on Water Quality Criteria, held in London, England
- FAO/IMCO Working Party on Stability of Fishing Vessels, held in London, England.

4. FAO/Industry Co-operative Program

1. In paragraphs 113-118 of paper ID/B/3/Add.3 reference is made to the establishment of this program and the adoption on 9 December 1965 of FAO Conference Resolution No.5/65, recommending the Director-General to continue his negotiations with industry, to seek co-operation of development funding institutions and bilateral aid agencies for more adequate credits to finance necessary agricultural inputs, etc.

2. The co-operative effort between FAO and major multinational firms is aimed at the expansion of industries in the developing countries, and to co-operate with governments to remove the obstacles to the fulfilment of this objective. Acceleration of capital investment and active industrial participation in the developing world are vital elements for increased productivity and employment opportunities.

3. It is this Program's responsibility to maintain day-to-day contacts on the one hand with the Divisions of the Organization and, on the other, with industry. To facilitate such activities, a General Committee, composed of senior executives of such industrial firms as are prepared to work with FAO along the lines indicated below has been established. Thus, a forum is provided for discussion of concrete projects of mutual interest, for reviewing Program activities, and for special presentations by experts from industry, FAO, and other organizations. As of November 1967, the General Committee comprised senior executives of 46 multinational industrial companies.

4. The Executive Committee of a 10-man group elected by the General Committee provides policy guidance, reviews membership applications, and seeks ways to expedite investment projects. Both Committees meet as often as they deem necessary.

5. The Program has been established as the main but by no means exclusive contact between FAO and industry and maintains close contact with both. Thus, on the one hand, the Program is a point of reference for FAO staff on industry views and a channel to explore the development and implementation of investment projects by industry. On the other hand, the Program is a source of information about FAO activities and presents FAO's views on matters which might facilitate and expedite project implementation. The Program attempts to analyse and implement investment in FAO field projects as well as projects from industry and government sources as early in the project as possible. Government co-operation and support is therefore an essential prerequisite for continuing success.

6. Industrial firms participating in the Program are prepared:

- (i) to participate actively in the development of FAO-related industries in developing countries; these industries include: processing industries requiring raw materials derived from agriculture, including animal husbandry, forestry and fisheries; and industries supplying essential requisites for the development of agriculture, such as seeds, chemicals, fertilizers, equipment, machinery and packaging materials;
- (ii) to provide the funds necessary to maintain the work of the Secretariat of the FAO/Industry Co-operative Program by subscribing annually in equal shares, as determined by the General Committee, to FFHC Sub-Trust Fund No. 4.177.

7. Initial emphasis was placed on the need for the Program to communicate information about FAO pre-investment activities in a manner that would help industry to come forward swiftly with follow-up ideas and action. To this end, the Secretariat has reviewed in detail more than 100 existing UNDP/FAO pre-investment projects, in order to select and inform the membership of those most appropriate for industry implementation. In addition, in an attempt to identify investment interests in a project earlier rather than later, the Secretariat, following an agreement with the UNDP, distributed descriptions of 49 new UNDP/FAO projects approved in 1967.

8. The number of projects proposed by industry and governments is gradually increasing. Joint FAO/Industry missions have helped identify priority agro-allied investment opportunities, and governments have, in other ways, been in contact with the Program.

9. The Program's catalytic role in promoting investment is reflected, in particular, through the great number of personal project consultations with industry representatives, government officials, UNDP Resident Representatives, FAO Country Representatives and Senior Agricultural Advisers, and FAO field project staff.

10. Although less than two years old, the Program's activities have already helped bring several agro-allied investments to fruition. A particularly good example in this respect involves a new tomato paste industry in Turkey, representing the first industrial implementation of a new UNDP/FAO horticultural research and training project in that country. In this case, the Program was instrumental in bringing together, as equity partners, local private capital, the state-operated sugar industry, a farmers co-operative and foreign private interests. Foreign industry is also supplying technical and managerial advice and will buy the tomato paste for international marketing. The new industry is based on information derived from UNDP-financed FAO field work requested by the Government. The project has now been extended to include a feasibility study on other Turkish fruit and vegetables, to provide information for further expansion of processing activities.

11. Co-operation between FAO and industry has increased through the formation of ad hoc sub-groups of the General Committee. These include pilot groups on food habits and trends, with special reference to protein-rich foods; on pesticides; and on forest industries, to develop closer collaboration with the Nutrition Division, the Plant Production and Protection Division, and the Forestry and Forest Products Division respectively. In addition, several companies have seconded experts to FAO to assist with specific projects; while others have participated in FAO and government technical meetings. The Program has facilitated an increased exchange of technical and economic information between industry and FAO, particularly on commodities.

12. Government support for and participation in the Program is increasing. At the fourteenth Session of the FAO Conference, November 1967, the Program received strong backing from a number of developing as well as developed countries. Expansion of Program activities, particularly in the fields of agricultural inputs and food production, was called for. In addition, the Conference "stressed that Governments did not alone have sufficient means to meet the demand for accelerated agricultural production in the broader sense; that industry represented a vital part of the total resources available; and that the Program was playing an increasingly effective role in helping energize and activate these resources".

Essential Requisites for Agriculture

13. With regard to farm machinery manufacturers, the FAO/Industry Co-operative Program now includes six leading companies. One of these companies contributed towards a training centre for machinery operators and maintenance workers in the South American Region. The project has been implemented under the Freedom-from-Hunger Campaign in co-operation with the Government of Colombia.

14. Similar forms of co-operation and field assistance are now also being discussed with other companies which are members of the Program, and one of these manufacturers is taking into consideration the possibility of establishing a demonstration farm. Another manufacturer is considering the preparation of a manuscript on land clearing based on FAO field experience to be issued by FAO on its publications program.

5. FAO/IBRD Co-operative Program, and Co-operation with Development Banks

Co-operation with the International Bank has continued to develop on very satisfactory lines in the course of 1966. Since the inception of the Program, which was established in April 1964 with a view to stimulating investment in agriculture, the total amount of IBRD loans and IDA credits for projects identified, prepared or appraised with FAO assistance has been of the order of \$330 million, and the pipeline of projects which await consideration for financing is well over this figure. In all, the Program has been involved in the identification, preparation or appraisal of more than 120 agricultural projects in diverse fields such as credit, area development, irrigated farming, land settlement and co-operatives, livestock, commercial tropical crops, fisheries, forestry, storage, seeds, communications and agricultural education. Nearly 70 of these projects were developed under the responsibility and direct operations of the Program, whereas in the remaining it played a participant role. Apart from the number of projects, their composition shows the effective role that the Program has played in bringing about a diversification of the Bank's interest in lending towards agricultural projects. Special mention may be made in this connection of project areas such as fisheries, forestry, area development, land settlement and co-operatives, seeds and agricultural education.

There have been increasingly close working relations established between Bank staff and FAO staff working on the Co-operative Program and hence a more effective appreciation by the Program staff of working methods and criteria used by the Bank in its appraisal of projects, and, in turn, greater acquaintance by Bank staff of FAO operations. While the Program's major area of responsibility is to identify, and help prepare projects which might be considered by the World Bank Group for financing, the Program staff has increasingly participated in the Bank's economic review, appraisal and end-use supervision missions which has enabled more systematic follow-through of projects.

An important aspect of the work has been to follow up, on a much larger scale than hitherto, FAO field activities, especially UNDP projects, with the purpose of helping orient them to investment opportunities. To this end, arrangements within the Program to carry on close and continuous review of UNDP projects in consultation with subject-matter divisions have been streamlined, and a series of reviews of Special Fund projects of potential interest to the Bank and the Program have been initiated under FAO auspices with Bank and UNDP participation. The first review in this series, held in June 1967, examined about 40 projects, and agreement was reached on the next steps to be taken by subject-matter divisions of FAO, the Program and the Bank to follow them through towards early investment.

With respect to industrial development, projects prepared under the FAO/IBRD Co-operative Program in the field of fisheries and forestry are bound to lead to industrial activities. Examples are the missions on coniferous softwood industrial plantation projects in Kenya, Tanzania and Madagascar and an appraisal mission of a railway project in Yugoslavia which might further open up industrial utilisation of the forest resources of the Montenegro and Bosnia Herzegovina Republics. Further preparation work is being carried out on forestry projects identified by the Program in Ecuador.

In the course of the current biennium, steps have been taken by the Director-General to initiate or strengthen co-operation with area development banks. Already in July 1965 an agreement was reached with the Inter-American Development Bank and was tacitly renewed in July 1967. It is now under review and re-negotiation in order to make this co-operation more systematic and effective.

Negotiations have been proceeding during 1967 with the African Development Bank and the Asian Development Bank with a view to establishing cooperative arrangements. These have resulted in a memorandum of understanding regarding cooperation between FAO and the African Development Bank and a note on procedure for ad hoc cooperative action between FAO and the Asian Development Bank. Discussions are going on with the Central American Bank for Economic Integration.

FAO's Regional Forestry Officer for Asia and the Far East participated in a Survey of Asian Agriculture undertaken by the Asian Development Bank. The purpose of this Survey was to examine development potential and to identify project areas for consideration of financial assistance to be given by the Bank. The countries included in this Survey were: Afghanistan, Ceylon, India, Indonesia, Japan, Korea, Malaysia, Nepal, Pakistan, Philippines, Singapore, Taiwan and Thailand.

6. Study on Food Production Resources in Agricultural Development

Expansion of food production will have to come primarily from a rise in yields and an intensification of production. This can only be achieved on a sustained basis through modernizing agriculture, applying scientific techniques and consequently making more intensive use, under careful technical guidance and supervision, of strategic food production resources, such as fertilizers, pesticides, improved seed and certain items of farm equipment and machinery. In many developing countries rising rates of utilization of their requisites, and especially fertilizers, testify to a growing realization of their strategic importance. Domestic production, however, is still limited and imports are restricted by foreign exchange difficulties.

As a first attempt to examine the problems of the requirements and availability of production resources on a comprehensive basis, FAO prepared the study referred to above. This study was reviewed by the FAO Intergovernmental ad hoc Committee in October 1967 in order to prepare observations to the 49th Session of the FAO Council on the entire subject. The general consensus was that the Study was both competent and original, although the limitations of the available information have permitted a broad analysis only. Some of the information used in the study was provided by other international organisations, including UNIDO.

7. Issue of Specific Publications

Elsa Haglund and Lars Erik Magnusson: Planning, Building and Equipping Home Economics Centres, Rome, 1967.

K.V.H. Ingerslev: Proposal for Refrigerating Plants with lists of equipment for 10 insulated cold rooms, etc. Research in Training Centres for the Production, Processing and Marketing of Fruit and Vegetables, NU:SP/67/4, May 1967, Rome.

Agricultural Development Papers Series

- (1967) No.85 - Multifarm Use of Agricultural Machinery
- (1967) No. - (in process) - Coconut Oil Processing in Rural Industries

Informal Working Bulletins in the FAO Agricultural Engineering Series

- (1967) No. 25 - Rearing and Capsizing of Tractors (E)
- (1967) No. 26 - The Use of Aircraft in the Mechanization of Agricultural Production
- (1967) No. 27 - Selected Lectures on Handling, Grading and Disposal of Wool (E)
- (1967) No. 28 - Equipment and Methods for TIED Ridge Cultivation
- (1967) No. 29 - Training Leather Utilization Workers in Developing Countries (E)
- (1967) No. 30 - Rice By-products Utilization (E)

FAO Marketing Guides

- No. 6 - Marketing of Paddy and Rice (in preparation)
- No. 2 - Marketing of Fruit and Vegetables (being thoroughly revised for issue in 1968)

Other Reports and Issues

- (1966) - Government Marketing Policies in Latin America
- (1966) - Operation and Management of Marketing Boards
- (1965) - Marketing and Refrigeration of Perishables in the Near East
- (1967) - Timber Trends and Prospects in Africa (FAO/ECA)
- (1967) - Contreplaqués et Autres Panneaux Dérivés du Bois
- (1967) - Wood: World Trends and Prospects (Basic Study No.16)
- (1967) - Forestry Public Relations (FAO/SIDA)
- (1967) - International Directory of Manufacturers of Forestry Instruments and Hand Tools
- (1967) - Forestry Index 1945-66 (of FAO documents)

Fisheries Industries

- FI/R.42 Informe del seminario sobre planificación y fomento de la economía pesquera en la America latina, Berlin - Tagel, 18 de abril al 13 de mayo de 1966
- FI/88
2105 Report on Development Prospects of the Fisheries of Nepal by John L. Dibbs (FAO Fisheries Economist)
- FI-FWA/67/5
(WN/61628/E) West African Fish Conference - Status of Fish Industry
- FI-FWA/67/Inf.2
(WN/60983/E) West African Fish Conference - The Management and National Utilization of Fishery Resources with special reference to Problems of Common Exploitation
- (WN/56139/E) COFI 2nd Session - The economic aspects of fishery management
- FE-E/C/107 The Export Trade in Fishery Products from Developing Countries to Developed Countries. Present Situation and Future Prospects.
- FE-CP/67/2 Draft Code of Practice for the Handling of Fresh Fish at Sea, FAO 1967 First ad hoc Consultation on Codes of Practice for Fish and Fishery Products
- FE-CP/67/5 Draft Code of Practice for the Handling of Fresh Fish on Shore, FAO 1967 - First ad hoc Consultation on Codes of Practice for Fish and Fishery Products
- FE-CP/67/6 Current Practices in the Handling of Fresh Fish at Sea, FAO 1967 - First ad hoc Consultation on Codes of Practice for Fish and Fishery Products
- FE-E/RM6 Landing and Marketing Facilities at Selected Sea Fishing Ports
- FI-V/R 40.2 TSB 1/1 The Influence of Social and Economic Factors on Development and Technology in the Fishing Sector
- FI-UNDP/TA 2271/2 Lectures of the FAO/USSR Seminar/Study Tour/Group Fellowship on Instrumentation and Methodology in Fishing Technology by W. Dickson

- FI-UNDP/TA 2277/2 Instrumentation for the Engineering Study of Otter Trawls, by P.J.G. Carrothers
- FI-UNDP/TA 2277/2 The Training of Fishing Gear Technologists and Discussion of what needs to be done in Developing Countries, by A. von Brandt
- FE-IWP/MISC/67 Fisheries of Nigeria and Their Development Prospects by A. Collart
- FI-COFI/67/11 The Utilization of Fishery Resources, FAO 1967 - Committee on Fisheries - Second Session
- FE-C114 Fisheries Resources and Prospects for their Development in western South America
- FE-TFI/67/D/1 Bacterial Contamination of Fillets due to Polyphosphate Dipping by J.I.W. Anderson, A.H. Sutton
- FE-TFI/67/D/2 The Italian Experience in Radio-Pasteurisation of Fishery Products by D. Massa, A. Perna - FAO 1967 - FAO Technical Conference on the Freezing and Irradiation of Fish - Madrid, Spain, 4-8 Sept. 1967 5 Pg., 2 Tab., 3 Ref., Abstr. in E, F, S.

8. Miscellaneous Activities

Composite Flours

During 1967, substantial progress has been made in the formulation and utilization of such composite flours. At the request of the Government of Columbia, a UNDP/FAO mission evaluated the possibilities for composite flour production and utilization. This mission has prepared recommendations for a project to be conducted in Columbia using largely existing laboratory and pilot plant facilities.

Housing

The application of timber and wood-based panels in low-cost housing is being actively pursued in field projects in the Central African Republic, Congo (Brazzaville), Honduras, Guatemala and Nigeria. These activities include the preparation of layouts for pre-cutting, impregnation and the production of prefabricated housing components, the preparation of designs and/or complete feasibility studies for the manufacture of prefabricated housing.

Dairy Industry Development

In paragraphs 124-137 of paper ID/B/3/Add.3, reference is made to dairy industry development. During 1967, a number of dairy development surveys were carried out under Regular Program funds. It is possible that these surveys carried out in Cameroon, Chad, Cuba, Kenya, Mali, Malawi, Mauritius, and Uganda may lead to the establishment of dairy plants.

III. FIELD ACTION PROJECTS AND PROGRAMS. - Description of selected current field projects for which FAO provides assistance upon government request.

1. Food and Food Processing Industries

AFRICA

- Regional Project: FAO/WHO Training Centre for Meat Inspectors.
Funds allocated for 1967: US\$35,000.

ALGERIA

- Protein-rich Food Industry Development
FAO, in co-operation with WHO and UNICEF, assisted in the development of a protein-rich weaning food. The production line, financed by UNICEF, is now operating in one of the Algerian plants processing pasta. Commercial production, promotion for use and marketing activities will continue to receive FAO assistance.

FAO/WHO/
UNICEF/FP

RUWANDI

- Dairy Industry Development

FAO made available a dairy technologist to assist in the organisation of a small milk plant for processing of liquid milk and manufacture of butter and cheese.
Technical Assistance allocation for 1967: US\$12,250.

FAO/UNDP-TA
Code 100-63

BOLIVIA

- Vegetable Oil Extraction Plant, San Ignacio, East Bolivia

In the large region of Chiquitos many oil plants are thriving, but remain unused in spite of their great value for the production of vegetable oils for human consumption. At present the fats for cooking are provided from animal sources. The purpose of this FAO sponsored project is to provide expert knowledge and the equipment to install a small pilot oil extraction plant in San Ignacio, and to train local technicians in its best use and maintenance.

The FPIC contribution from Upper Austria amounts to US\$10,000.

FAO/FPIC

- Small-scale Food Processing Industries

Technical Assistance allocation: US\$2,000.

FAO/UNDP-TA
Code 1-55

BRAZIL

- Tropical Centre of Food Research and Technology Campinas

The purpose of this project (initiated December 1964 and to be completed in 1969) is to contribute to the development of the Tropical Centre of Food Research and Technology through the establishment of its Vegetable Products Sections. The Centre is to become a permanent national institution for the promotion and development of food storage and processing and will provide

FAO/UNDP-SF
BRA 10

research and testing services as well as training in food technology for public and private industrial enterprises throughout Brasil.

Seven FAO specialists in food technology and processing of industrial food, edible vegetable oil, in chemical analysis, juices and concentrates of fruits and vegetables and microbiology of foods, for a total of 180 man-months, have been assigned to the project. In addition, 180 man-months of fellowships are available for this project.

The equipment to be provided for this project amounts to US\$308,000. The SF allocation is US\$772,200 and the Government counterpart contribution amounts to US\$2,170,349.

- Food Engineering

FAO/Funds-
in-Trust

CAMBODIA

- Food Processing

FAO/UNDP-TA
Code 186-55

An FAO expert has made a survey (4 months) of the existing food industry and has prepared recommendations for the sectoral development of the food industry, particularly with respect to the processing of fruits and vegetables.

His services have been further requested by the Government to assist in carrying out his recommendations. He was assisted in his mission by a Cambodian participant in the short-term course in "Fruit and Vegetables Technology" held at the FAO International Food Technology Centre, Mysore City, India, just prior to his mission.

Technical Assistance Allocation: US\$3,000.

- Control Laboratory, Bureau of the Department of Industry

This new Laboratory, concerned in part with the food industry, is headed by a participant in the recent short-term course in "Analysis, Standardisation and Quality Control in Food Processing Industries" held at the FAO International Food Technology Training Centre, Mysore City, India.

- Dairy Industry Development

FAO/FFHC/
UNDP-TA
Code 186-55

FAO made available a dairy technologist to assist in the establishment of a small milk plant in Phnom Penh. The Technical Assistance allocation for 1967 is US\$13,150. Funds for equipping the plant were made available partially under FFHC donations.

CENTRAL AFRICAN REPUBLIC- Food ProcessingFAO/UNDP-TA
Code 117-61

In 1966 an FAO expert made a survey (1 month) of the existing food industry using locally available raw materials. The recommendations made were the basis for a 12 month assignment of an FAO food technologist who is assisting the Government in the development of the food industry.

Technical Assistance allocation: US\$2,000.

- Dairy Industry DevelopmentFAO/UNDP-TA
Code 116-61

FAO is advising on milk plant management and dairy technology with particular emphasis on butter and cheese making.

Technical Assistance allocation for 1967: US\$22,200.

CEYLON- Rice MillingFAO/UNDP-TA
Code 101-53

The FAO expert's main objective is to determine the most appropriate milling and parboiling methods, in order to obtain high processing yields, both with regard to quality and quantity of products and by-products.

The FAO expert will demonstrate the advantages deriving from modern processing plants versus out-dated mills and huller-type mills, and conducting comparative trials, thus to provide general advice to the Government on improvement and development programs related to rice storage, processing and marketing.

Technical Assistance allocation: US\$5,600.

- Food Industry Development

An FAO consultant in food technology visited Ceylon in 1966 and made recommendations with respect to food industry development. Action started in 1967 on his first recommendation by the Marketing Department - the establishment of a Fruit and Vegetable Utilization Laboratory. It will be adjacent to the Department's Canning Factory - which produces 70-80% of Ceylon's canned food production. The manager of the Canning Factory and six others from the Department, who will all be involved in the Utilization Laboratory, have attended courses at the FAO International Food Technology Training Centre, Mysore City, India.

CHAD- Installation of a Poultry Breeding Centre in Ft. Archambault and of a Rendering Plant for Slaughterhouse Offals in Fr. LamyFAO/WFEC/
UNDP-TA
Code 98-61

This project is included in the Government Five-Year Plan.

FAO experts will install equipment for the rendering of slaughterhouse by-products in order to process blood, meat and bone meal to be used as mixed feed for the poultry industry.

Furthermore, a Centre is being established with a capacity for 1,300 breeding hens, and 6,000 egg incubation equipment. This Centre also will accommodate 10-15 trainees, for a training and

demonstration program which includes poultry, husbandry, reproduction of improved poultry breeds and training of local technicians in the operation of the by-products processing plant. The project has been initiated in 1965 and intends to be completed in 1969. Financing is by FFHC donations from Switzerland (US\$195,000) whilst the Government contributes \$198,000. An expert is now assisting for whom a Technical Assistance allocation of \$18,100 has been made available in 1967.

- Food Technologist

A food technologist is assisting the Government in the development of the food industry.
Technical Assistance allocation of US\$19,000.

FAO/UNDP-TA
Code 98-61

CHILE

- Institute of Food Science and Technology, Santiago

The purpose of this project (initiated 30 April 1965 and expected to be completed by 30 April 1968) is to strengthen existing facilities in the University of Chile in the field of food technology in order to serve the country's food processing industries through research, training, quality control, and technical advice.

FAO/UNDP-SF
CHI 15

The Institute has been established in the Faculty of Agriculture in the University of Chile. The pilot plants and control laboratories are located in the farm "La Rinconada", Maipú (Department of Technology and Chemistry), situated at 30 km. from Santiago. This is the central headquarters of the Institute. Applied research concerning food chemistry and biochemistry is carried out in the laboratories situated in Santiago (Department of Bromatology, Nutrition and Toxicology of the University). The activities of both sectors will complement each other; in the central headquarters studies are undertaken directly related to the production and industrialization of food products; in the laboratories in Santiago scientific and technical studies are carried out into the relevant processes and production. The research work of the Institute is directed towards the solution of technical problems related to the processing of food products in the various parts of the country, with emphasis on quality improvement and reduction of costs. A marketing consultant assisted in the assessment of demand for pre-packaged food, primarily with a view to introducing retailing through general stores and supermarkets. (Integration of processing industries and modern retailer techniques.)

Investigations are also undertaken to develop the use of cheap and little used food resources (particularly those rich in protein) in order to help solve national nutritional problems. An information service through meetings, publications and demonstrations is also developed.

In addition to conducting academic courses comprising various subjects of food technology, the Institute is training managers and technical and supervisory personnel employed in the food industry by means of short courses, field work and demonstrations.

The international experts FAO has provided for this project include 3 food technologists, 1 food microbiologist, specialists in quality and acceptability analysis of manufactured foods, thermal sterilisation and formulation of new products, manufacturing of meat products, organization of food technology courses and short-term consultants in marketing, for a total of 156 man-months. In addition, 84 man-months of fellowships are provided for this project and about \$121,000 of equipment and supplies. SF allocation is \$474,400 and the Government counterpart contribution amounts to \$748,607.

- FAO Regional Dairy Training Course for Spanish Speaking Countries in Latin America

FAO/UNDP-TA
Funds-in-Trust
(Denmark)

Allocation of funds for 1967 US\$110,000.

- Dairy Industry Development

FAO/UNDP-TA
Code 66-53

FAO is assisting in dairy technology and advises on management problems with special emphasis on cheese making and milk powder manufacture. The expert also advises on existing FAO/UNICEF-assisted milk plants in Chillan and Valdivia. Technical Assistance allocation for 1967 US\$22,150.

CHINA (TAIWAN)

- Food Processing Institute, Hsinchu

FAO/UNDP-SF
CHA 16

The purpose of the project (initiated in 1967, to be completed in 1971) is to expand the activities of the laboratory set up by the Cannery Association for advisory services, to a full-scale Food Processing Institute with a view to improving the efficiency and output of the country's food processing industries and to co-ordinate the efforts and activities of other pertinent agricultural, industrial and commercial agencies towards this end.

In particular the project will:

- (a) carry out applied research to help the industry develop new products, to introduce new processing methods and to improve the quality of present processed foods;
- (b) carry out advisory services to the Government and food industry regarding the needs for government measures and the training of personnel in pertinent government and industry agencies;
- (c) organise demonstrations and training seminars to improve the efficiency of management at all levels;
- (d) carry out feasibility studies to advise on product development and new processing procedures;
- (e) carry out economic evaluations of potential markets, with special emphasis on exports.

During the first phase the following four departments will be developed:

- (a) Secretariat Office
- (b) Food Science and Technology
- (c) Food Microbiology
- (d) Food Chemistry Department

In the second phase an additional three Departments will be established:

- (a) Food Engineering Department
- (b) Extension and Service Department
- (c) Economic Evaluation Department

The project provides for a total of 156 man-months of internationally recruited FAO experts including a food technologist, a processing engineer, a quality control and nutrition and an economics and extension expert, and 84 man-months of fellowships, as well as \$385,000 for equipment. The SF allocation to this project is \$829,200, whilst the Government counterpart contribution amounts to \$1,082,100.

- Program for Development of Livestock Production on Marginal Land in Taiwan

FAO/UNDP-SF
CHA 19

This FAO/SF project on livestock development provides assistance on dairy technology and milk plant management; priority has been given to liquid milk processing.

DANONIEY

- Establishment of Two Poultry Breeding Centres in Cotonou and Kpinou

FAO/UNICEF/
FFHC

This project, initiated in 1965 and to be completed in 1967, has been included in the Government's General Improvement Plan. The purpose of the project is to increase the capacity of the poultry station in Cotonou, installation of a rearing station in Kpinou, and to develop and process mixed feed. Provision is made for the establishment of poultry houses for 600 breeders, installation of incubators for 5,000 eggs, establishment of a feed mixing plant and rearing houses for the production of 2,500 laying pullets per month. Furthermore the project provides training at various levels, including modern management methods. UNICEF is providing \$55,000, FFHC from France \$29,500, and the Government \$36,400.

- Grain Storage

FAO/UNDP-TA
Code 89-63

For this project, a Technical Assistance allocation of \$5,200 has been made available.

ETHIOPIA

- Dairy Plant

FAO/UNICEF/
UNDP-TA

This FAO project on dairy plant management emphasizes the installation of further processing facilities. UNICEF will assist in the supply of dairy equipment. Technical Assistance allocation for 1967: US\$14,900.

GHANA- Food Research and Development UnitFAO/UNDP-SF
GHA 7

The purpose of the project (initiated 30 September 1965 and to be completed by 30 September 1970) is to assist the Food Research Institute in carrying out a co-ordinated programme of applied research in the storage, processing, preservation and marketing of foods with the aim of contributing towards the development of the food industries of the country. The Institute is playing an advisory role in assisting the Government in planning and implementing its policy of developing national food industries and increasing agricultural productivity.

The program of work includes surveys of the food industries at all levels of organization to determine which food industries it would be most desirable to develop based on local agricultural and fisheries products and essential imports; and applied research through laboratory and pilot-scale investigations on the processing, preservation, storage, marketing and utilization of the main foods of the country, such as rootcrops, cereals, oilseeds, cacao, fish and seafoods, meat, fruit and vegetables. Particular attention is given to the retention of nutritive value in stored and processed foods, to the production of new (high protein) foods, to the development of appropriate standards of safety and quality and to the requirement, where necessary, of modifying food processing methods used elsewhere in view of the differences in properties and composition of foods produced under tropical conditions.

In addition, the internationally recruited FAO experts include: a food technologist, and specialists in fish processing, meat processing, storage of plant products, food analysis, food planning and consumption, food marketing, food laws and standards, starchy roots processing, oilseeds and by-products processing, food engineering and fruit and vegetables processing, for a total of 336 man-months.

The marketing expert carried out detailed surveys on the food processing industry concerning distribution channels for fish, grains, fruit and vegetables and made recommendations as to the establishment of additional processing facilities for these commodities (12 months 1967).

A total of 120 man-months of fellowships is provided for this project, as well as about \$100,000 for equipment and supplies. SF allocated \$888,100 and the Government counterpart contribution amounts to \$2,668,720.

GREECE- Slaughterhouse Construction

FAO/Funds-in-Trust

The Government of Greece requested FAO in 1965 to make a comprehensive survey of the existing slaughter facilities in the country, and to give suggestions for their reorganization; also to suggest locations and design of new abattoirs and reconstruction of existing ones where feasible.

- Fruit and Vegetable Processing Industry

The second phase of the above project was advice and assistance to the Government of Greece on the Fruit and Vegetable Processing Industry. The expert who was assigned to Greece surveyed the Fruit and Vegetable Processing Industry and in his report advised the Government on:

- (a) The suitability and quality requirements of fresh fruits and vegetables for processing, the proper harvesting time, the harvesting techniques, and the handling, transportation and storage of the raw products for processing;
- (b) The modernization and improvement of existing processing facilities, as well as the establishment of new facilities;
- (c) The development of processed fruit and vegetable products meeting the demand and requirements of the local and export market;
- (d) Setting up the necessary quality control laboratories in fruit and vegetable processing plants;
- (e) The training of technical personnel at various levels of the processing industry, by means of short training courses and appropriate fellowships. The expert also, with the collaboration of his counterpart in the Ministry of Agriculture, prepared two specific projects:
 - (i) REPORT on Processing of Horticultural Products on Kos and Rhodes
 - (ii) REPORT on Project for Fig Processing Plants in Greece. The report was submitted to the Government early in 1967.

The purpose of the project is to facilitate the domestic meat supply, taking into account the vast distances between the main producing areas and the larger cities.

In connection with the survey plans, specifications and estimates are made by FAO for 3 industrial abattoirs and 15 smaller slaughterhouses in such details that tenders can be called. The various projects are to be implemented by contractors and FAO supervision is not envisaged at this stage.

The survey was initiated in 1965 and the final report is to be presented to the Government early in 1967. Construction of the first industrial abattoirs and reconstruction of others is expected to start immediately, but implementation of all recommendations will take at least five years.

The survey is financed by funds in trust and considerable amounts are earmarked within the national budget for the implementation.

GUATEMALA

- Dairy and Beef Industry Development in Agricultural Diversification Project

FAO/UNDP-SF
GUA 7

An FAO dairy consultant participated in the SF project on diversification of coffee crop to livestock in the Retalhulea area, and a draft project for a milk processing plant to be established in this area has been prepared.

A team of FAO experts, in co-operation with the Ministry of Agriculture and local farmers, is setting up bankable projects for beef industry development and other matters.

This SF project commenced in 1964 and is expected to finish in 1968. SF Allocation: \$524,600, Government counterpart contribution: \$354,000.

INDIA

- Pork Technology

FAO/UNDP-TA
Code 155-53

An FAO expert is assisting and advising on manufacture of pork products and on establishment of pork processing plants. Technical Assistance allocation for 1967: US\$19,770.

- FAO International Food Technology Training Centre, Mysore City

FAO/FFHC

This Centre, financed by the Canadian public and food and allied industries through the Canadian Hunger Foundation, and by the Government of India, and operated by FAO, was established in November 1964 and serves fifteen countries including India in Asia and the Far East. Host to the Centre on behalf of the Government of India is the Central Food Technological Research Institute of the Council of Scientific and Industrial Research.

A two-year post-graduate course for the 'M.Sc. Food Technology' degree of the University of Mysore began July 1965. There are currently fifty-one students in the 1966/8 and 1967/9 post-graduate classes. Six short-term courses of two-month duration in specific fields of food technology have been held starting in April 1965. Including the fifty-one current post-graduate students, a total of two hundred and eighteen participants from thirteen countries have attended, or are attending, Centre post-graduate and short-term courses. The Government of India, in collaboration with the Government of Canada, is constructing an international hostel at the Centre.

- Projects on Grain Storage, Handling and Processing

FAO/RP/FFHC

These three projects were prepared by a Far East Regional FAO expert upon completion of a survey, and steps have been taken in order to become operational by the end of 1966, and to have the projects financed by the Association for Food Production of Religious Organizations.

The first project involves the setting up of nine community drying and storage centres, two parboiling plants and four rice mills in Thajavur, Madras. The estimated FFHC contribution covering personnel services, equipment and supplies amounts to US\$1,554,000.

The second project is designed to set up grain storage facilities in Khanna, Ludhiana District, Punjab. The total FFHC contribution covering personnel services, equipment and supplies amounts to US\$302,000.

The third project involves the setting up of village storage and cleaning facilities for grain and pulses in Hathras, Aligarh District, Uttar Pradesh. The total FFHC contribution will amount to US\$146,700.

- Farm and Community Grain Storage

FAO/UNDP-SF
IND 85

Dairy Industry Development

- One FAO expert is assisting in dairy engineering products research, dairy technology and training in dairy plants in New Delhi, Bombay and Karnal. Technical Assistance allocation for 1967: \$6,000.

FAO/UNICEF/
UNDP-TA

- Another FAO expert is advising on matters of dairy engineering with particular emphasis on lay-out and maintenance of milk plants. Technical Assistance allocation for 1967: US\$13,400.

FAO/UNDP-TA
Code 155-53

- An FAO expert is also advising on refrigeration problems as connected with dairy industry development. The Technical Assistance allocation for 1967 is US\$5,900. The project is expected to be completed during 1967.

FAO/UNDP-TA
Code 155-53

- An FAO expert is advising on the manufacture of evaporated and condensed milk, especially from buffalo milk. Technical Assistance allocation for 1967: US\$15,650.

FAO/UNDP-TA
Code 155-53

INDONESIA

- Rice Processing

The Technical Assistance allocation for this project is US\$6,200.

FAO/UNDP-TA
Code 119-53

- Maise Processing

The Technical Assistance allocation for this project is US\$6,200.

FAO/UNDP-TA
Code 119-53

IRAN

Dairy Industry Development

- An FAO dairy engineer is advising on operation and maintenance of a dairy plant in Shiraz; the program includes technical training at various levels. Technical Assistance allocation for 1967: US\$21,500.

FAO/UNICEF/
UNDP-TA
Code 127-53

- Another FAO dairy technologist is assisting in cheese processing in Teheran, with emphasis on the utilisation of cow, sheep and goat milk.
Technical Assistance allocation for 1967: US\$16,300.

FAO/UNDP-TA
Code 127-53KENYADairy Industry Development

- FAO is operating a diploma dairy training course including dairy technology for which UNICEF supplies dairy equipment.
Technical Assistance allocation for 1967: US\$30,350.
- An FAO technologist is assisting in the proper organisation of rural dairy development schemes with special emphasis on practical demonstrations, quality control and dairy technology.
Technical Assistance allocation for 1967: US\$17,200.
- Another FAO expert is assisting in milk plant management with emphasis on the organisation of milk collection and organisation of producers.
Technical Assistance allocation for 1967: US\$16,050.

FAO/UNICEF/
UNDP-TA
Code 7-60FAO/UNDP-TA
Code 7-60FAO/UNDP-TA
Code 7-60KOREAAgricultural and Fisheries Development Corporation

The Korean participant of the two-year (1965/7) post-graduate course in food technology at the FAO International Food Technology Training Centre, Mysore City, India, is concerned with the setting up of a 'food research institute' within the recently formed Agricultural and Fisheries Development Corporation of the Government.

LIBYANAnimal Quarantine and Abattoir Construction, TripoliFAO/UNDP-TA
Code 157-56

The project provides for quarantine facilities for imported livestock and establishment of a modern mechanized slaughterhouse within the quarantine area in which all imported animals are to be slaughtered.

The main purpose is to facilitate the supply of a deficit region (Near East) by importing livestock for slaughter from a surplus region (East Africa) and to minimize the risk of introducing exotic diseases by such transaction.

The quarantine station can accommodate 600 head of cattle and the capacity of the slaughterhouse is 60 cattle per day. Initial planning was made by an FAO expert and advice has been given through both implementation and necessary legislation. FAO management is envisaged in the initial stages of operation.

The project is the first of its kind to be found in the world, but if successful it is expected to be followed by others elsewhere.

The project was initiated in 1961 and then shelved for political reasons, but it is now being completed and expected to be operational towards the end of this year.

Technical Assistance is financed by UNDP-TA. Only government funds are involved in the construction. The exact amount is not known, but it is expected to be in the region of US\$500,000. Technical Assistance allocation for 1967: US\$19,650.

- Dairy Industry, Regional (Near East)
Dairy Training Courses

FAO/UNDP-TA/
Funds-in-Trust
(Denmark)

FAO is operating this regional dairy training course for which for 1967 funds have been allocated to the amount of US\$90,000.

LIBYA

- Food Processing Industries

FAO/Funds-
in-Trust

The FAO expert is advising and assisting the Government in the development of industries for the processing of a wide range of agricultural raw materials through such measures as:

Operation of the date syrup plant and further development work on date syrup and other date products, i.e., in fancy packs and as a component in livestock feed mixtures; technical supervision of the running and maintenance of the citrus processing plants; further introduction of new citrus products; the technical establishment of two five-ton per hour livestock feed mixing plants; the further development of the tomato processing factory located in Deri; development of plans for the establishment of a fruit juice factory; continued training of counterparts and other personnel assigned; advice on the proper staffing of the Government's enterprises.

The FAO expert is also organising regular quality control tests during processing and packing operations, with special reference to the introduction of hygienic control measures.

MALI

- Dairy Industry Development

FAO/UNDP-TA
Code 14-62

An FAO expert is assisting the organization of milk collection and transportation from rural areas to consuming centres, with a view to developing further the dairy industry. Technical Assistance allocation for 1967: US\$27,700.

MALAYSIA**- Food Technology Research and Development Centre**FAO/UNDP-SF
MAL 9

The purpose of the project (initiated in 1967, and expected to be completed in 1972) is to assist in establishing a Food Technology Research and Development Centre in order to carry out applied research on problems relating to the handling, storage, processing, and marketing of locally produced foods, and to provide advice and training in these fields to personnel from the Government and from industry at all levels.

In particular the project will give attention to improve the already established industry, so that it can be increasingly commercialised and expanded into larger, more productive and economical units. It will also explore investment opportunities for the development of new food industries for both local and export markets. The main activities of the project will be carried out at the Centre located at Serdang, which includes the following divisions:

- (a) Food Analysis and Food Standards
- (b) Food Microbiology
- (c) Food Biochemistry and Nutrition
- (d) Food Technology
- (e) Marketing

In addition, four pilot stations will be established which will serve as demonstration units, and will also be utilized for training purposes:

- (a) Fruit and Vegetable Processing Station
- (b) Rice Processing Station
- (c) Fish Processing Station
- (d) Animal Feed and Poultry Development Station

A total of 11 internationally recruited FAO experts, including 2 food technologists and specialists in food microbiology, food biochemistry, food analysis and control, rice processing, fish processing, poultry feed, food marketing, rice standards and grading and food packaging, for a total of 336 man-months are provided for this project, as well as 141 man-months of fellowships and US\$280,000 for equipment.

Three participants in short-term courses of the FAO International Food Technology Training Centre, Mysore City, India, are part of this project.

The SF allocation provides for US\$1,171,700, whilst the Government counterpart contribution amounts to US\$1,170,000.

- Rice ProcessingFAO/UNDP-SF
in-Trust

MEXICO

- Integrated Agricultural Program for Education, Research and Extension Work, Chapingo

FAO/UNDP-SF
MEX 6

An FAO expert for training and research activities in food activities is included in this project for a period of 2 years.

NEPAL

- Food Research Laboratory

Three of the professional nucleus staff of the recently established Food Research Laboratory, including its head, have attended short-term courses at the FAO International Food Technology Training Centre, Mysore City, India. The Laboratory will, in part, implement the new Food Act and assist the development of the food industry. Two Nepalese currently attending the two-year (1966/8) post-graduate course in food technology at the Mysore Centre are also expected to join the Laboratory.

NIGER

- Feasibility Study for the Industrial Development of Millet

FAO/UNDP-SF
NER 9

An FAO expert has given the leadership for the establishment of the first integrated silling facilities for sorghum and millet. The plant was successfully operated in 1967. The project will be continued to arrive at a comprehensive feasibility study for the production and utilization of millet and sorghum flours. The project staff will include 4 internationally recruited FAO experts, several fellowships for counterpart personnel and about US\$100,000 equipment for the cleaning of the grains and supplementary silling equipment. The project also includes the production of cattle feed from mill by-products.

- Sugar Processing

FAO/UNDP-TA
Code 77-61

The Technical Assistance allocation for this project is US\$2,600.

NIGERIA

- Dairy Industry Development (Northern Region)

FAO/UNDP-TA
Code 37-56

An FAO dairy technologist is assisting in the development and organization of milk processing.

Technical Assistance allocation for 1967: US\$11,800.

- Cashew Nuts and Soybean Processing (Eastern Region)

FAO/UNDP-TA
Code 17-61

The Technical Assistance allocation for this project amounts to US\$16,100.

PAKISTAN**- Dairy Industry, Plant Management (Karachi)**FAO/UNDP-TA
Code 603-53

FAO is advising and assisting the Karachi Milk Plant on management with special emphasis on proper organisation of milk collection, and reconstitution of milk powder supplied both from the USA and (to be expected) from WFP. Technical Assistance allocation for 1967: US\$21,570.

- Development of Date and Date Products Processing IndustryFAO/FFHC/
UNDP-TA/Funds-
in-Trust
Code 191-53

Two FAO experts (one Associate under Netherlands Funds-in-Trust arrangements) are assisting in the operation of a date packing house and date products plant in the Nekran area. Equipment and machinery have been made available under FFHC, whilst the project carries a Technical Assistance allocation for 1967 of US\$17,250.

PHILIPPINES**- Applied Research Institute for Products of Animal Origin (Dairy Industry Development)**FAO/UNDP-SF
PHI 4

The SF project includes dairy industry development and FAO provided a dairy technologist to deal with both the theoretical and practical aspects of this part of the project.

POLAND**- Research and Extension Services for Food Production, Processing and Utilisation**FAO/UNDP-SF
POL 2

The purpose of the project (initiated 15 April 1963, to be completed August 1968) is to promote a co-ordinated plan of research and development with education and extension services for food production, processing and utilisation with full attention to quality appraisal, including nutritive value of foods.

The Co-operating Units of the Polish Government are:

- (i) The Food Industries Specialised Institutes and laboratories and associated Agricultural (and Fisheries) Centres with Meat, Fish, Dairy Products, Fats, Fruits, Vegetables, Cereals and other products, in Warsaw and elsewhere;
- (ii) The Agricultural University of Warsaw - Faculty of Food Technology;
- (iii) The Warsaw Food Training Centre - Vocational Secondary Schools and the associated Teacher Training College - in association with the Training Centre for Food Extension Work;
- (iv) The Food and Nutrition Institute in Warsaw.

This FAO operated project has been extended in order to complete assistance to the establishment and operation of a Central Kitchen in Katowios. When fully operational, the Central Kitchen will supply more than one hundred distribution centers and industrial canteens with prepared and semi-prepared meals. The daily output of the kitchen is to be 30,000 meals daily.

- Dairy Industry Development

As far as the dairy field of this SF project is concerned, FAO made available three short-term consultants; (1) to advise on the preparation of pure cultures and starters for industrial purposes; (2) to advise on the most suitable characteristics of glass bottles which are extensively used by the local dairy industry; and (3) to advise on the control of dairy equipment prior to instalment in milk plants. A follow-up is expected to make final decisions with regard to the facilities required to make the above mentioned control of dairy equipment operational.

In view of the excellent supply of scientific workers of high calibre in Poland, the duration of internationally recruited FAO experts assigned to the project did not generally exceed 5 months, so that a large number of specialists and consultants could be recruited for specific purposes. In addition, the success of this project has been assisted by a very liberal allowance of fellowships amounting to approximately 25 man-years.

The Special Fund contribution for equipment amounted to US\$637,000. The SF allocation amounts to US\$1,057,000 whilst the Government counterpart contribution is US\$3,631,000.

SAUDI ARABIA

- Food Control Organisations

FAO/Funds-in-Trust

The Government of Saudi Arabia has for this project established Funds-in-Trust with FAO. The Institute of Nutrition and Food Research (TNO) in the Netherlands, under a sub-contracting agreement, is setting up two food control laboratories in Jeddah and Dammam under the supervision of FAO. The project is expected to be completed by April/May 1970.

- Grain Flour and Feed Silos

FAO/Funds-in-Trust

The Ministry of Commerce and Industry of the Kingdom of Saudi Arabia has planned the design and construction of a number of port and inland silos for wheat as well as flour and food mills.

The FAO expert to be recruited under Trust Fund arrangements should act as project co-ordinator. His duties will involve:

- 1) Selection of Consulting Engineers for the project and execution of a contract for consulting engineering services spelling out the scope of work and terms and conditions of the appointment.

- 2) Preliminary and detailed design of the project and preparation of specifications and tender documents.
- 3) Operation and management of the facilities.
- 4) Training of local personnel.

The duration of this project is for a period of 3-5 years.

GENERAL

- Institute of Food Technology, Dakar

FAO/UNDP-SF
SIN 5

The purpose of the project (initiated in 1966 and to be completed in 1971) is to assist the Institute of Food Technology in Dakar in a co-ordinated program of applied research in processing, preservation, packaging, storage and marketing of food, in the training of the counterpart personnel of the project, in the training of personnel for employment at various levels in food industries and in providing advice to the Government and Industry.

The project will be devoted to applied research on groundnuts, millet, fish and meat. Fruits and vegetables will also form part of the program of the project. Particular emphasis is given to:

- (a) improvement of the methods of processing the locally available foods in order to produce products that are nutritious, adapted to the taste of the consumer and within his economic reach;
- (b) studies of the traditional methods of storage and preservation of the major food commodities in order to determine ways and means for improvement;
- (c) studies of methods for developing effective promotion and marketing services;
- (d) feasibility studies for the creation of viable food industries;
- (e) the study of food regulations and food standards on behalf of the Government food control services.

In addition, the FAO experts assigned to this project include a food technologist and specialists in food production and marketing economy, fish processing, cereal and meat processing, food storage, fruit and vegetable processing, chemical analysis, food microbiology, food promotion and food legislation, for a total of 252 man-months. In addition, 72 man-months of fellowships are provided for this project, as well as US\$290,000 for equipment. SF allocation US\$1,035,000 and Government counterpart contribution US\$851,200. The FAO marketing expert has commenced with the economic appraisal of the local food processing industry. He is also engaged in assessing economic aspects of introducing new food on the market.

- Dairy Industry Development

FAO made available an adviser on milk plant management with emphasis on the organisation of a milk processing plant to be established with UNICEF assistance in St. Louis. Technical Assistance allocation for 1967: US\$16,000.

FAO/UNICEF
UNDP-TA
Code 70-66

SINGAPORE

- Light Industries Services Institute
Food Industries Development

An FAO expert is included in this ILO operated project to assist the Government in a program designed to improve meat processing, with particular reference to pig and poultry products. The expert has pilot plant and laboratory facilities available and the Technical Assistance allocation is for 12 months during 1968/1969.

ILO/FAO/
UNDP-SF

SUDAN

- Food Processing Research Centre

The FAO operated project aims at the establishment of services for investigation of food processing problems. It involves the setting up of a main centre in the Khartoum area, including microbiological laboratory, food technology laboratory, freezer room, and various training facilities. The four sub-stations, although forming an integrated part of the project, are established and equipped at Government expense, and they are used for demonstration and training programs and rural grading, packing and marketing of food products. An FAO marketing expert and a packing and grading expert assisted the project and carried out a survey on the economic aspects of existing processing facilities including an onion dehydration plant, a date pharmaceutical alcohol plant and fruit and vegetable canning facilities (total 16 months for 1967). The FAO operated project commenced in 1965 and is to be completed in 1970. SF allocation is US\$739,600 with Government contributing US\$678,070.

FAO/UNDP-SF
SUB 14

- Agricultural Products Processing

An Associate Expert (Netherlands) is serving on this project for the entire duration of 1967.

FAO/UNDP-TA

SYRIAN ARAB REPUBLIC

- Dairy Industry Development

FAO made available an expert to advise on milk plant management for the Damascus and Aleppo plants to which UNICEF already has supplied parts of the dairy equipment. Emphasis is given on milk sterilisation. Technical Assistance allocation for 1967: US\$9,100.

FAO/UNICEF/
UNDP-TA
Code 90-53

TANZANIA

- Survey and Plan for Irrigation Development in the Pangani and Wami River Basins

FAO/UNDP-SF
TAN 4

Towards the end of the project, the FAO marketing expert surveyed the economic justification of establishing new processing facilities for agricultural products and for expanding the existing plants. In particular, emphasis was placed on the canning and dehydration of vegetables and the economic aspects of milk processing. (5 months during 1967).

- Small Jaggery Sugar Processing Plant, Pemba

FAO/FFPC/
UNDP-TA
Code 250-54

This project being prepared by FAO involves the establishment of a demonstration and training unit with small factory for the processing of brown sugar, as a prototype of a rural industry, aimed at the promotion of sugar production for local consumption. Equipment costs were US\$4,950 and Government contribution US\$14,400 to this project.

Technical Assistance allocation for 1967: US\$2,000.

THAILAND

- Food Science and Technology Department, Kasetsart University

This Department gives the only teaching in food technology at the academic level in Thailand. Its Head and one of his lecturers have attended short-term courses, and three from this Department are attending the two-year (1967/9) post-graduate course in food technology at the FAO International Food Technology Training Centre, Mysore City, India.

- Department of Science, Ministry of Industry

The Training Division of this Department in collaboration with the Preserved Food Organisation, the Ministry of Public Health and the Bangkok Municipality is becoming more involved with development of the food industry.

Three of the Thai participants in the two-year (1965/7) post-graduate course in food technology of the FAO International Food Technology Training Centre, Mysore City, India, are now with the Department of Science and two with the Preserved Food Organisation.

TURKEY

- Research and Training Centres for the Production, Processing and Marketing of Fruit and Vegetables

FAO/UNDP-SF
TUR 13

The purpose of the project (initiated in 1966, to be completed in 1971) is to increase the efficiency of the horticultural and related industries in Turkey through research and training, and thus to improve the supplies, both for export and local markets of fresh and processed fruit and vegetables.

The program of work covers the following activities:

- (a) Research in production with the aim of increasing yields and improving the quality of fruit and vegetables, through more efficient cultural practices, including irrigation, fertiliser use and pest and disease control.
- (b) Selection of superior varieties and strains of fruit trees, vines and vegetables as well as the solution of practical problems pertaining to the production and distribution of recommended seeds and rootstocks.
- (c) Research on the preservation and processing of fruit and vegetables with the aim of adapting to Turkish conditions the most suitable and economical modern techniques. Emphasis will be placed on quality control and grading with a view to export markets.
- (d) Market research and development including packaging and transportation methods. (This includes advice on supplies, grades and standards of fruits and vegetables in relation to processing activities, chiefly canning, dehydration and refrigeration).
- (e) The training program of the project will cover production, processing and marketing. It will be in the form of in-service training and demonstration of modern techniques and will consist mainly of short courses in co-ordination with the universities and horticultural schools in the areas in question. Extension workers, managers of nurseries and food technologists in public and private service will participate in these courses.

A total of 20 FAO experts for a total of 634 man-months are assigned to the project. These experts are specialists in the production of vegetables, glasshouse products, olives, deciduous and citrus fruits, viticulture, fruit and vegetable canning, olive oil processing, quality control, dehydration and dried fruit processing, citrus processing, and cold storage.

324 man-months of fellowships are provided for in the project, and a total of US\$403,000 for equipment and supplies. SF allocation is US\$1,997,100 and Government counterpart contribution US\$3,125,089. In co-operation with the FAO/Industry Cooperative Program, assistance is being provided to a Turkish group of industrial concerns for the establishment and operation of tomato paste processing plant as well as for other food products.

UNITED ARAB REPUBLIC

- Mansoura Polytechnic Institute for Higher Education

UNESCO/FAO/
UNDP-SF

An FAO Food Industry Training expert is included in this UNESCO operated project, with particular reference to training technicians for the food industry and allied services. This part of the project's program is benefiting from previous FAO activities carried out in this subject matter field. The allocation is for 24 months.

UGANDA

- Dairy Industry Development (Kampala, Entebbe)

FAO/UNDP-FA
Code 10-62

FAO provided a dairy technologist to organise milk collection schemes near Kampala with emphasis on organisational and dairy technological aspects. Technical Assistance allocation for 1967: US\$17,250.

- FAO Regional Dairy Training Courses for English Speaking Countries in Africa (Entebbe)

FAO/UNDP-FA/
Funds-in-Trust
(Denmark)

Allocation of funds for 1967: US\$90,000.

III. FIELD ACTION PROJECTS AND PROGRAMS. - Description of selected current field projects for which FAO provides assistance upon government request.

2. Industries Processing Agricultural Products Other than Food

BOTSWANA

- Hides and Skins Survey (2 months)
Technical Assistance allocation: US\$1,500.

FAO/UNDP-TA
Code 72-62

BURMA

- Tobacco Blending and Processing, operating throughout 1967. Technical Assistance allocation: US\$14,500; to be extended throughout 1968.

FAO/UNDP-TA
Code 228-54

DAHOMEY

- Processing of Agricultural Products; 6 months for 1967 with a Technical Assistance allocation of US\$7,500; to be continued through 1968.

FAO/UNDP-TA
Code 89-63

DOMINICA

- Coir and Copra Processing Industry Development, Roseau

FAO/UNDP-TA

This project is the follow-up of a previous FAO/FFHC activity carried out during 1965/6, and provides for the establishment of the coir and copra processing industry on a commercial basis. Technical in-project training of nationals is included.

ETHIOPIA

- Hides, Skins and Leather Industry Development throughout 1967, with a Technical Assistance allocation of US\$15,250.

FAO/UNDP-TA
Code 141-63

GUINEA

- Coconut Fibre Processing for a period of six months

FAO/UNDP-
Contingency
Fund

HAITI

- Development of Small-scale Agricultural Products Processing Industries (throughout 1967/68) with a Technical Assistance allocation of US\$7,200 for equipment.

FAO/UNDP-TA
Code 4-66

INDIA- Central Sheep and Wool Research Institute, RajasthanFAO/UNDP-SF
IND 32

The Institute will provide experimental and training facilities in sheep husbandry, better utilization of land, wool shearing, grading, testing, wool technology, and wool processing.

The Institute comprises a central sheep and wool research institute, and one main sheep and wool training centre, both in Malapura near Jaipur. Two sub-stations, one in the Himalayan Region at Kulu and the other in Kodai Kanal (Madras State). Ten large and 148 small centres demonstrate shearing, grading, wool marketing and sheep flock management. The Institute is being equipped with a fibre research laboratory, wool processing, utilization and testing equipment, grading and shearing equipment and sheep breeding stocks.

The FAO operated project commenced in 1963, and is to be completed in 1968. The SF allocation amounts to US\$777,500 with a total Government contribution of US\$6,064,744.

- Animal carcass processing, bonemeal, meatmeal, to develop poultry industry.

FAO/UNDP-TA

INDONESIA- Fibre Processing (Coconut Husks)FAO/UNDP-TA
Code 119-53

Throughout 1967/68, with a Technical Assistance allocation of US\$7,500.

IRAN- Hides, Skins and Leather DevelopmentFAO/UNDP-SF
IRA 13

This FAO/UNDP-SF project involves the establishment of an institute with a main centre in Teheran and sub-stations in Keshed, Shiraz and Tabris. The main centre will include a flaying and curing section, a demonstration tannery, a demonstration rendering plant for the utilization of animal by-products, control laboratory, lecture room, and library. Each sub-station includes a field demonstration unit for the training in improved handling and grading techniques, both for hides and skins, a curing plant and a buying centre with marketing service. Thus this is a project covering applied technological research, training and demonstration of advanced flaying and curing techniques and marketing of hides, skins, leather and by-products. The marketing consultant (10 months for 1967) is investigating distribution channels, and is also assisting in the economic evaluation of the tanning industry, including problems of capacity and expansion.

The FAO-operated project carries a total Special Fund allocation of US\$659,600 and a Government contribution of US\$973,000, and is expected to be completed by the end of 1969.

LESOTHO

- Wool Processing (for six months)

FAO/UNDP-
Contingency Fund

NEPAL

- Animal Carcass Processing, Hides, Skins and Leather Development

FAO/UNDP-TA/FFHC
Code 7-57

NIGERIA (Northern Region)

- Hides and Skins Demonstration and Training Project, Northern Region

FAO/UNDP-SF
NIR 11

The project, initiated in 1964, to be completed in 1968, aims at the improvement of raw hides and skins, semi-tanned hides and skins for the export trade, and developing tanning and leather manufacture in Nigeria. The implementation has involved the setting-up of a main centre and two sub-centres. The main centre in Zaria comprises a laboratory, lecture room, library and office accommodation. The two sub-stations in Maiduguri and Sokoto are mainly to give technical assistance on the processing of hides and skins, on village tanning and on marketing problems related to the export trade. The two sub-centres are furnished with selected tanning machinery and laboratory equipment.

The project includes a marketing survey, and the FAO expert dealing with these aspects completed his studies on the economics of various tanning and pre-tanning methods. The report includes a feasibility study for the establishment of a commercial tannery in the Northern Region, with a daily intake of 200 - 300 hides for wet treatment, with finishing in Europe.

The SF allocation amounts to US\$461,500 and the Government contribution to US\$452,000.

- Development of Agricultural Products Processing Industries

FAO/UNDP-TA

REGIONAL (Africa)

- Agricultural Products, Processing and Storage

FAO/UNDP-TA
Code 41-63

RWANDA

- Hides, Skins and Leather Demonstration and Training Centre, Kigali

FAO/UNDP-SF
RWA 4

The FAO/UNDP-SF project involves the establishment of a demonstration and training centre in Kigali for the development of the hides, skins and leather industry. The program of work includes the introduction of improved flaying, curing, handling and grading of hides and skins; improved marketing of processed hides, skins and leathers; training and demonstration of leather tanning techniques, especially for local requirements; footwear and leather goods manufacture, planning and legislation on quality and marketing.

There is a total Special Fund allocation of US\$542,900 and a Government contribution of US\$157,000 for a period of 5 years. The FAO-operated project is scheduled for completion by the end of 1972.

SONALIA

- Training Centre for Hides, Skins and Leather Development

FAO/UNDP-SF
SON 11

The FAO/UNDP-SF project aims at the strengthening of the existing Rural Tanning Training Centre at Mogadisho and the establishment of a sub-station in the north at Burao. The program of work for the Centre will include applied research, training and demonstration, planning and legislation with particular emphasis on reducing losses, promoting exports by meeting required quality standards, modernizing the marketing organization and development of the local tanning, leather and animal by-products utilization industry. The Centre will work on the following:

- Improved flaying and curing of hides and skins;
- Improved grading and marketing of hides and skins;
- Dressing, tanning and technology of leather and pelts;
- Utilization of leather for footwear and leather goods;
- Utilization of animal by-products.

There is a total Special Fund allocation of US\$731,600 with a total Government contribution of US\$275,000 over a period of 5 years. The FAO-operated project is scheduled for completion late in 1972.

SUDAN

- Demonstration and Marketing Research for Improved Hides, Skins and Leather Production

FAO/UNDP-SF
SUD 26

This is a continuation of the previous "Hides, Skins and Leather: Development and Training Project", already described in the 1966 Annual Report, ID/B/3/Add.3, FAO's Activities in the Field of Industrial Development, which project was completed during the first part of 1967.

This FAO/UNDP-SF project is intended to disseminate results of the previous one through mobile demonstration units to advise on improved marketing techniques in rural areas. To fulfil this purpose, the already established Institute will extend its activities and establish in one of the principal rural tanning areas a semi-mechanized tannery so that antiquated methods and techniques will give way to improved technology. A marketing research and organization section will collate the necessary marketing information in order to advise the industry further on the marketing of hides, skins, leather and leather goods.

The total Special Fund allocation of US\$411,500 is balanced by a Government contribution of US\$332,300 for the duration of three years. The FAO-operated project intends to be completed during 1970.

SURINAM

- Development of Coir and Copra Processing Industry

FAO/UNDP-TA
Code 21-63

TANZANIA

- Coconut Fibre (coir) Processing, for Matting and Rope Industry and Upholstery

FAO/FFHC

THAILAND

- Rubber Research and Development in South Thailand

FAO/UNDP-SF
THA 15

This project (initiated in 1965 and to be completed in 1970) has the purpose of raising the productivity of the natural rubber industry. Rubber exports (200,000 tons yearly) and rice are the two main foreign exchange earners.

The FAO experts cover such aspects as research, training, and demonstration in order to improve the general level of technical proficiency among small-holders. In addition to production, they also cover processing and marketing.

The SF contribution amounts to US\$931,600 and the Government counterpart contribution to US\$817,370.

TURKEY

- Hides, Skins and Leather Industry Development

FAO/UNDP-TA
Code 11-58

Technical Assistance allocation for 1967: US\$15,900.

III. FIELD ACTION PROJECTS AND PROGRAMS.— Description of selected current field projects for which FAO provides assistance upon government request.

3. Forestry and Forest Industries Including Pulp and Paper

ARGENTINA

— Wood Technology

Technical assistance in wood technology with emphasis on timber grading and standardization was supplied by FAO. The project was completed in June 1967. Technical Assistance allocation \$10,000.

FAO/UNDP-TA
Code 18-58

BOLIVIA

— Forest Industries Development

FAO provided expert services for the development of forest industries. The project had been in operation since November 1962, mainly in sawmilling and the promotion of export of sawn wood. The project was completed in the middle of 1967. Technical Assistance allocation \$12,000.

FAO/UNDP-TA
Code 73-53

BRAZIL

— National Forestry School, Vicosa

The project has provided a forestry school at university level, and organized forestry and forest products research aiming at the scientific utilization of forest resources, and the development of forest industries. Special attention has been given to the demonstration of logging and sawmilling operations in the Amazon area. A training centre is functioning in Santarem and some applied research in forest products is being conducted at this same field station.

The whole project covering training and research for forestry and forest products involves personnel services amounting to 600 man/months in total and equipment provided through FAO.

The project became operational in February 1962 and was scheduled to be completed in August 1967 but has been extended to the end of 1967.

The expected total cost is equivalent to US\$3,190,000 (UNDP and Government contributions)

FAO/UNDP-SF
BRA.4

CENTRAL AFRICAN REPUBLIC

— Forestry Training and Demonstration Centre

The project plans the establishment of a training and development centre to encourage and develop internal wood consumption, the development of forest industries and the export of forest products. A small size sawmill is being installed, as well as equipment for wood-working operations, with a small logging centre closely co-operating with the sawmill.

Personnel services, with the exception of consultants and one administrative officer, have been subcontracted to the Centre Technique Forestier Tropical in Paris. Other services are being provided directly through FAO. The project was declared operational on 18 May, 1965, and is scheduled to be completed by May 1970.

The expected total cost is equivalent to US\$860,130 (UNDP and Government contribution).

FAO/UNDP-SF
CAP.1

CEYLON**- Pre-Investment Study on Forest Industries Development**FAO/UNDP-SF
CEY.5

This project is to carry out economic and technical feasibility studies of forest industries, train forestry personnel and prepare plans for long term development of forest utilization. Evaluation will be made of possibilities for establishing selected industries and to provide necessary data for detailed planning of the expansion of logging and existing wood conversion operations, mainly sawmilling, and plywood production.

Long-term development planning also covers fields of forest industries, such as pulp and paper, particle board and fibreboard, etc.

The project is being implemented by personnel services supplied through FAO (168 man-months in total), supply of equipment necessary for demonstration and training, and fellowships.

Three forest products laboratories are carrying out, on a subcontract basis, laboratory tests of selected wood species to support pre-investment studies for board products.

The project became operational in November 1963 and was scheduled to be completed by April 1967, but the duration of the project has been extended by 18 months.

The revised expected total cost is equivalent to US\$893,300 (UNDP and Government contribution)

- SawmillingFAO/UNDP-TA
Code 110-53

Technical assistance in sawmilling is being given by an FAO expert who assists the Ceylon authorities in the operation of Government owned permanent and mobile sawmills and advises on their modernization and expansion. Technical Assistance allocation \$1,800.

CHILE**- Modernisation of sawmills**FAO/UNDP-TA
Code 70-53

An FAO expert advised and assisted in the modernization of sawmilling operations. The project was completed in October 1967. Technical Assistance allocation \$15,000.

CHINA (Taiwan)**- Forest and Forest Industry Development**FAO/UNDP-SF
CHA.21

The project concerns forest products marketing, industrial feasibility studies, improvement of logging and wood conversion methods as well as strengthening research in forest products. The project will involve the preparation and implementation of an overall plan for the rapid and rational development of forestry and forest industries in Taiwan, so that they can better contribute to the economy and wellbeing of the Island.

The project is being implemented by supplying personnel services by FAO of 252 man-months, and technical equipment and facilities for the training of local staff.

Results will influence the development of exports of forest products, which is one of the pre-conditions for expanding the contribution of local forest resources to the National Economy.

The project was initiated in September 1965, and is scheduled to be completed in September 1968.

The expected total cost is equivalent to US\$2,706,900 (UNDP and Government contribution).

COLUMBIA

- Pre-investment Study on Forestry Development in the Magdalena and Sinu River Valleys

FAO/UNDP-SF
COL.14

The project consists of three parts. During the first stage a general study of the existing forests and lands suitable for reforestation and selection of restricted zones for investive study will be carried out. During the second stage, an intensive study of the restricted zones will be made, where it is reasonably anticipated that investment will be made, and reforestation trials carried out. During the third stage of the project, the study and planning for the development of integrated forest industries and application of reforestation techniques in suitable areas will be performed.

234 man-months of experts services are being provided, which also include industrial feasibility studies. In addition, some wood testing and aerial photography will be carried out under sub-contract and a certain amount of technical equipment will be supplied.

The project became operational in June 1964 and is scheduled to be completed in May 1968.

The expected total cost of the project is equivalent to US\$1,698,000 (UNDP and Government contribution).

ECUADOR

- Pre-Investment Studies on Forestry Development in the Northwest

FAO/UNDP-SF
ECU.13

The project is to undertake forest inventory and carry out demonstration and training in modern methods of forest exploitation and wood preservation techniques. The project covers an area of approximately 14,000 km² which will be surveyed to determine locations affording the most favourable prospects for the development of forestry and forest industries.

Timber testing, logging operations as well as improvement of existing wood conversion facilities and planning the establishment of new ones are included in the scheme.

Implementation involves 222 man-months of personnel services of experts as well as some equipment supplied through FAO.

The project became operational in November 1963 and is scheduled to be completed in February 1969.

The expected total cost is equivalent to US\$1,670,000 (UNDP and Government contribution).

GHANA

- Wood Working Industries

FAO/UNDP-SA
Gde 166.61

FAO is providing an expert in wood working industries development scheduled for 1966/67/68. Technical Assistance allocation \$36,000.

GUATEMALA

- Pre-Investment Study on Forestry Development

FAO/UNDP-SF
GUA.6

The project aims at the preparation of a comprehensive forestry and forest industries development plan for selected areas. It is designed to carry out Forest Inventories in selected areas,

on the results of which development plans will be prepared. Local personnel will be trained in modern forest inventory road construction, logging and sawmilling methods and in planning forest industries development.

FAO, as Executing Agency, will supply 210 man-months of expert services and the necessary technical equipment and training facilities.

The project was initiated in August 1963, and is scheduled to be completed in August 1968.

The expected total cost is equivalent to US\$1,599,700 (UNDP and Government contribution).

GUINEA

- Forestry Training and Demonstration Centre

FAO/UNDP-SF
GUI.3

The project is to help train intermediate staff and workers in the fields of forest and timber utilization, and to prepare a forest industries development plan. A wood utilization training centre will be established in the wet tropical forest area and will comprise: logging, sawmilling and woodworking sections. In addition, data will be collected and general survey of the forest resources made for the preparation of a forest industries development plan.

The project is being implemented by subcontracting personnel services (162 man-months) with the exception of the Project Manager and consultants (89 man-months).

Technical equipment required for training and demonstration purposes, as well as funds for fellowships, are being provided by FAO/UNDP-SF.

The project became operational in September 1965 and is scheduled to be completed in September 1971.

The expected total cost is equivalent to US\$2,194,459. (UNDP and Government contribution).

GUYANA

- Forest Industries Development Survey

FAO/UNDP-SF
GUY.9

The purpose of the project is to assist the Government in determining the extent and composition of accessible forests and in developing suitable methods of extraction, processing and marketing of forest products. In particular, the project will assist the Forestry Department in evaluating and completing previous and current forest survey work, determining the extent and composition of the forest in selected priority areas, development of suitable methods of logging and wood conversion operations and formulating plans and procedures for marketing forest products and investigation of technical and economic feasibility for establishing new forest industries.

414 man-months of experts services, including consultant services, will be provided and funds are available for aerial photography and timber testing to be carried out on sub-contract.

Logging and wood processing equipment will be supplied for the organisation of pilot and demonstration operations.

The project became operational in September 1966 and is scheduled to be completed in August 1970.

The expected total cost is equivalent to US\$2,027,000 (UNDP and Government contribution).

INDIA

- Pre-Investment Study of Forest Resources

FAO/UNDP-SF
IND.23

The purpose of the project is to assist the Government in developing the country's forest resources and associated forest industries; to this end, the project is oriented towards planning the expansion of existing, and development of new, forest industries (including pulp and paper).

The project will involve investigation of the economic availability of raw materials in three selected zones, investigation into the raw material requirements, into existing plant capacities and marketing possibilities; the project will also determine suitable areas for industrial plantations.

213 man-months of personnel services as well as technical equipment, mainly for air survey operations, are being supplied through FAO; wood testing is being undertaken on a subcontract basis.

A modern forest inventory section is to be established in the Forest Research Institute of Dehra Dun.

The project became operational in April 1965 and is scheduled to be completed in October 1968.

The expected total cost is equivalent to US\$2,811,600 (UNDP and Government contribution).

- Establishment of Four Logging Training Centres

FAO/UNDP-SF
IND.40

The project plans the establishment of four logging training centres to train workers in efficient logging and extracting methods, as well as in simple sawmilling operations.

The Training Centres have been established in four different zones of the country, and the training program is covering operation and maintenance of mechanical logging equipment including cableways and also operation and maintenance of portable sawmills.

174 man-months of personnel services are being provided through FAO as well as equipment for demonstration and training purposes.

The project became operational in August 1965 and is scheduled to be completed in August 1969.

The expected total cost is US\$1,102,750 (UNDP and Government contribution).

IRAN

- Forest Industries Development

FAO/UNDP-TA
Code 131-53

FAO provided an expert to advise on the development of forest industries with emphasis on sawmilling. In the middle of 1967 the expert was transferred to the Special Fund project which became operational in the meantime. Technical Assistance allocation \$14,000.

- Development of the Caspian Forests

FAO/UNDP-SF
IRA. 19

The project plans to establish a demonstration centre for forestry and land use in a selected part of the Caspian Forest, including some wood conversion operations. In particular, the project is assisting the Government in establishing a demonstration centre which will introduce intensive forest management and utilization techniques in a pilot zone and determine its optimum pattern of land use. A demonstration and training sawmill is also expected to be erected.

The project is also serving as a model for planning the development of the Caspian region. It is expected that the project operation will result in the preparation of a comprehensive and balanced rural development program, including the utilization of forest resources. Training of technicians and skilled forest labour is an important part of the project.

537 man-months of personnel services are being provided through FAO and, in addition, a considerable amount of equipment, including road construction, logging and wood conversion equipment.

The project became operational in October 1967 and is expected to be completed in September 1971.

The expected total cost is equivalent to US\$5,101,000 (UNDP and Government contribution).

KENYA

- Forest Industries Planning and Development

FAO/UNDP-TA
Code 75-63

FAO providing expert assistance in forest industries planning and development (1966/67). Technical Assistance allocation \$28,000.

MALAYSIA

- Sawmill Operations and Training

FAO/UNDP-TA
Code 28-63

An FAO expert is assisting Government and private industry in the modernization of sawmilling operations. Several old-fashioned sawmills have already been modernized, mainly by substituting old circular saws with band saws. A training, demonstration and research unit, including a pilot sawmill and small wood-working plant, is being organized. Technical Assistance allocation \$16,000.

NEPAL

- Survey and Demonstration for Management and Development of the Trisuli Watershed

FAO/UNDP-SF
NEP.4

Forest industries development planning is a part of this project, the purpose of which is to plan the integrated development of the Trisuli Watershed and to serve as a demonstration scheme for establishing a most suitable approach to the protection and development of mountain areas.

Personnel services (282 man-months in total) and some technical equipment are being provided through FAO as the Executing Agency; aerophotographic maps will be made on subcontract.

The project became operational in August 1966, and is scheduled to be completed in July 1970.

The expected total cost is equivalent to US\$1,165,100 (UNDP and Government contribution).

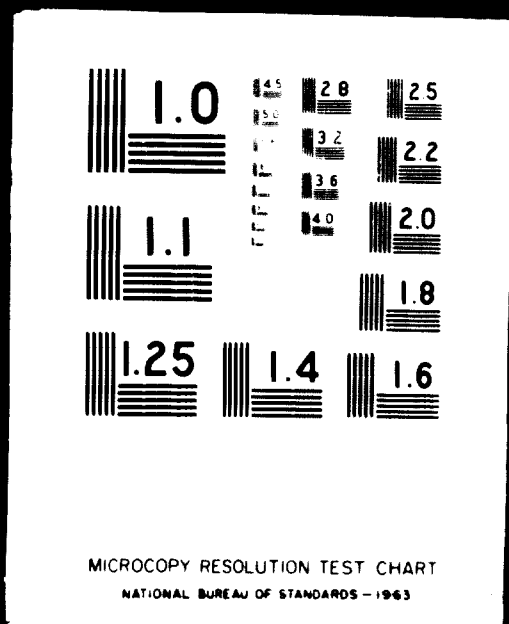


28. 9. 71

2 OF 2

DO

2050



We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.

PAKISTAN**- National Forestry Research and Training Program**FAO/UNDP-SF
PAK.11

The project aims at expanding and strengthening the Forest Research Institute and College of Peshawar, which includes a Forest Products Division. The project will involve the establishment of a Wood Utilisation Research Unit and expansion of wood utilisation research aiming at supplying the Forest Industry with information required.

The implementation of the whole Project involves 327 man-months of personnel services supplied through FAO as well as other facilities for research and training.

The project was initiated in September 1963 and is scheduled to be completed in September 1968.

The expected total cost of the Project is equivalent to US\$4,086,000 (UNDP and Government contribution).

PANAMA**- Forestry Surveys and Demonstration**FAO/UNDP-SF
PAN.6

A general inventory of the country's forest resources is being completed and about 2,000 km² of the most promising forest areas will be selected for detailed inventory and this inventory carried out. An investigation of wood properties and utilization based on botanical study and tree identification is being undertaken. A demonstration forest area to define and demonstrate the best techniques for management, logging and utilization and to give in-service training will be established. A forest road network for the extraction of timber will be constructed in the demonstration forest. Advice on improving the existing sawmilling operation will be given.

In total, 276 man-months of expert and consultant services is being provided and a considerable amount of road construction and logging equipment, in addition to other technical equipment, will be supplied.

Aerial photography and wood testing will be carried out under sub-contract.

The project became operational in September 1966 and is scheduled to be completed in August 1970.

The expected total cost is equivalent to US\$1,473,000 (UNDP and Government contribution).

PERU**- Forestry Research and Training Project, Universidad Agraria**FAO/UNDP-SF
PER.20

The project is to assist in the establishment of a Forest Faculty, a Rangers School and forestry and forest products research. The Forestry Faculty has been established as part of the Universidad Agraria at La Molina. The Rangers School has been established as a Technical School located in the lower tropical forest zone.

A Forestry and Forest Product Research Institute is being organized by the University, and four forest research field stations (centres) will be located in different parts of the country to cover different conditions. Personnel services (200 man-months in total) are being supplied through FAO.

The project became operational in November 1963 and is scheduled to be completed in November 1968.

The expected total cost of the Project is US\$1,269,000 (UNDP and Government contribution).

SUDAN

- Forestry Research and Education Centre, Khartoum

FAO/UNDP-SF
SUD

The project is to assist the Government in establishing a Forestry Research Institute, including a Forest Products Laboratory, and to provide improved facilities for training at the Forest Rangers College.

The Forest Products Laboratory is carrying out an investigation of the properties and uses of both present and potential commercial species of Sudanese timbers. Experiments and applied research in seasoning and woodworking are being made; advice is being given on the modernization of sawmilling.

The implementation of the whole project covering forestry and forest products involves 356 man-months of personnel services, supplied by FAO, as well as equipment and other training facilities for the establishment and operation of the Institute.

The project became operational in December 1961, and was supposed to have been completed in February 1967. However, its duration has been extended to end-April 1968.

The revised expected total cost is equivalent to US\$1,616,000 (UNDP and Government contribution).

TANZANIA

- Forest Industries Development

FAO/UNDP-TA
Code 93-61

An FAO expert is assisting in the improvement of sawmilling and other woodworking operations, and also advising on the preparation of a forest industries development program. Technical Assistance allocation \$31,000.

- Forest Industries Development Planning

FAO/UNDP-SF
TAN.15

The purpose of the project is to assist the Government in preparing an overall forest and forest industries development plan. In particular, the project is assisting in organizing logging operations mainly in industrial plantations, establishing a pilot sawmill with some related woodworking operations, undertaking specific tasks such as forest industries feasibility studies, industrial tests on Tanzanian timbers, collaboration with the National Development Corporation over their forest industries activities and undertaking surveys of some of the major plantation areas of Tanzania. The project will also advise on the most suitable set-up within the Forest Division which will be responsible for the promotion of efficient forest utilization planning and fostering of forest industries development with emphasis in the first instance on sawmilling.

In total, 180 man-months of expert and consultant services will be provided through FAO.

The detailed planning and equipment for the erection of the sawmill will be supplied, including additional equipment for logging operations, kiln drying, wood preservation, etc.

Forest industries feasibility studies and timber testing will be carried out under sub-contract and so will aerial photography and ground control for part of the project area if required.

The project became operational end-August 1967 and is expected to be completed in August 1970.

The expected total cost is equivalent to US\$1,381,000.

TURKEY

- Forestry and Forest Industries Development

FAO/UNDP-SF
TUR.26

Surveys of forest resources in a selected part of the country, industrial feasibility studies and the preparation of an outline for a plan for forestry and forest industries development is the main purpose of the project. In particular, the project will assist in the modernization of inventory methods in the South-west and North-west of Turkey, will evaluate the potential of these forests for forest industry development with the main emphasis on pulp and paper and timber, will undertake forest products marketing and industrial feasibility studies aiming at determining the location, types and size of industrial plant to be established and will recommend improvements in logging methods and transportation. As a summary of the project activities, an overall development plan for dealing with forest resources, prospective demands for wood products and the means of satisfying these requirements with plans for the location and establishment of certain industries will be prepared.

Expert and consultant services amount to 342 man-months.

Timber testing and industrial feasibility studies will be carried out under sub-contract.

Among the equipment, a survey aircraft with all instruments required will be purchased from the UNDP funds, to which the Government will contribute in cash. In addition, photogrammetry and mapping, logging and extraction and other equipment will be purchased.

The project became operational in October 1967 and is expected to be completed in September 1971.

The expected total cost is equivalent to US\$3,316,000 (UNDP and Government contribution).

URUGUAY

- Pulp and Paper Development

FAO/UNDP-TA
Code 46/58

A pulp and paper specialist is advising on possibilities for pulp and paper development. Technical Assistance allocation US\$26,000.

VENEZUELA

- Pre-Investment Survey of Forestry Development in Venezuelan Guiana

FAO/UNDP-SF
VEN.5

The project is to prepare a plan for the development of forestry and forest industries of selected areas in Venezuela based on a forest inventory and other related studies, such as investigations into properties of the more important tree species, timber marketing, etc.

The project is confined to an area of 25,000 km² in the eastern part of the State of Bolivar, and the south-eastern part of the Federal Territory Delta Amacure.

168 man-months of personnel services will be provided through FAO as well as technical equipment required.

The project became operational in December 1963 and is scheduled to be completed in December 1967.

The expected total cost is equivalent to US\$1,721,700 (UNDP and Government contribution).

ZAMBIA

- Forest Industries Feasibility Study

FAO/UNDP-SF
ZAM.5

The Government of Zambia has embarked on a major project for the establishment of industrial plantations of fast growing wood species. The above-mentioned UNDP project is assisting the Government in preparing and implementing a comprehensive plan for forest industrial development based on industrial plantation as well as in some technical aspects of extension and modernization of the plantation work. In particular, the project will train Zambians in modernized plantation methods, harvesting of timber plantations and in the implementation of the industrial development plan referred to above. It is also assisting in carrying out applied research in timber utilization and the development of the Forest Products Centre.

In addition, the project will carry out an appraisal of existing wood-using industries and analyse present and future demands for forest products. Finally, it will examine the technical short-term and long-term feasibility of establishing or expanding wood-based industries in Zambia.

In total, 246 man-months of experts and consultants services have been provided for by the project, as well as equipment mainly for logging and transport of plantation wood and for the expansion of the Forest Products Centre.

Industrial timber testing will be carried out under sub-contract.

The project became operational in September 1967 and is expected to be completed in February 1971.

The expected total cost is equivalent to US\$1,844,000 (UNDP and Government contribution).

REGIONAL ADVISORY GROUPS ON FOREST INDUSTRIES DEVELOPMENT

LATIN AMERICA (with ECLA) located in Santiago

Established 1955 provides for a pulp and paper expert, a mechanical forest industries expert and a forest economist.

AFRICA (with ECA) located in Addis Ababa

Established 1964 provides for a pulp and paper expert and a mechanical forest industries expert.

ASIA AND FAR EAST located in Bangkok

Established 1967 currently provides for a pulp and paper expert.

III FIELD ACTION PROGRAMS AND PROJECTS - Description of selected current field projects for which FAO provides assistance upon government request.

4. Fisheries Industries

ARGENTINA

FAO/UNDP
ARG 10

- Fishery Development Project

This FAO/UNDP-SF project commenced in 1966 and has to be completed by 1971. The SF allocation amounts to \$1,501,600 whilst the total Government contribution is \$1,803,800.

Immediate objectives of this project are:

- (1) Extensive prospecting and exploratory fishing to be carried out in conjunction with biological and environmental studies required for the assessment of fishery resources; experimental fishing to test new fishing methods; and the evaluation of the industrial feasibility of introducing new methods of utilising the resources;
- (2) Making available of services to assist Government and industry in taking appropriate measures to overcome institutional and other problems which have been hampering the development of the industry.

The existing canning and fishmeal plants are suffering from a serious shortage of raw material and the introduction of purse seines might offer an immediate solution, whilst exploitation of deep water trawl grounds, the development of a squid or octopus fishery, and the discovery of new shrimp grounds will be studied. Studies of a technological nature will be undertaken in the National Institute of Industrial Technology.

This research includes quality control and the introduction of improved processing technology.

The FAO team includes Biologists, Masterfishermen, Economist and a number of Consultants, specialised in matters concerning product development, wholesale and retail distribution, vessel design, industrial financing and development, marketing and export promotion.

BRAZIL

FAO/UNDP-SF
BRA 11

- Fishery Research and Development Project

For this FAO/UNDP-SF project (initiated in 1965, to be completed by 1968) SF allocation amounts to \$375,400 whilst the Government contributes \$474,100.

The project will, among other things, provide Government and industry with technical services required for planning of specific industrial development programs and aimed at measures to be taken to encourage the private sector to participate in the construction and operation of cold stores, ice plants, water and fuel facilities, etc.

CARIBBEAN REGIONFAO/UNDP-SF
CAR/REG 16- Caribbean Fishery Development Project

This FAO operated UNDP-SF project commenced in 1965 and is for a duration of 4 years. SF allocation, \$1,899,300; Government counterpart contribution \$772,800.

Participating in this regional FAO/UNDP-SF project are the following states and territories: Barbados, Guyana, Dominican Republic, France (in respect of French Guyana, Guadeloupe, Martinique, and their dependencies); Haiti, Jamaica, Leeward Islands (Antigua, Montserrat, St. Christopher/Kitts, Nevis and Anguilla); Netherlands Antilles, Surinam, Trinidad and Tobago, United States of America (on behalf of Puerto Rico), Windward Islands (Grenada, St. Lucia, St. Vincent).

Main aspects of this Regional FAO/UNDP-SF project are to provide, through exploratory fishing, market study, demonstration, and training, a basis for the future growth of the fisheries of the Caribbean Region. The project is divided into two phases, the first one lasting a year being preparatory, in order to become operational in the second phase which is to last approximately three years.

Two exploratory vessels will be devoted to experimental fishing with emphasis on long-lining (pellagic fish). In addition, there will be conducted sink gill-netting (for bottom species, i.e. snapper, grouper); live bait fishing, trawling (surface species), light fishing, seining, etc., as appropriate, geographically or seasonally.

Although shore based courses for fishermen are being held, the greater part of the training will take place on board the exploratory fishing and other vessels available.

CENTRAL AFRICA [Cameroon, Republic of Central Africa, Congo (Brass.), Gabon]FAO/UNDP-SF
AFR/REG 54- Inland Fishery Project

The project is to assist the Governments in expanding and developing fish culture through training and research. The total budget is \$1,400,000 over 5 years.

CENTRAL AMERICAN REGIONFAO/UNDP-SF
CEN/REG 30- Central American Fishery Development Project/ Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama.

This FAO operated regional UNDP-SF project is expected to be operational shortly and is for the duration of six years. SF allocation \$2,245,500; Government counterpart contribution \$5,049,900.

This project was requested by the Economic Cooperation Committee of the Central American Isthmus, and aims to increase production and consumption of marine and brackish water fish and fishery products. To achieve this the project consists of four main parts:

- (1) strengthening of fishery administration and planning;
- (2) development and management of various fisheries;
- (3) a general resources survey, and
- (4) improvement of processing and marketing

Training forms a large element in this project, and emphasises the practical aspects of developing the industry and includes fisheries management, fishing methods, preservation and processing, transportation and marketing of fish and fishery products.

Mechanised vessels are used for demonstration, experimental and exploratory fishing, and the boats are equipped for different fishing techniques, including long-lining, gill-netting, purse-seine fishing, trawling, and fishing with lights; trawling for bottom and midwater fish; line fishing for reef fishes.

Adequate marketing and processing methods will be demonstrated; fishery enterprises receive management advice, and emphasis is placed on improved methods of processing, handling, storage and distribution of fish and fishery products. The possibility of replacing imported marine products with locally produced items is given careful attention.

Fish processing activities are carried out in cooperation with the Central American Institute for Research and Industrial Technology (ICAITI), and studies concerning inter-regional trade are carried out in collaboration with the Permanent Secretariat of the General Treaty of Economic Integration of Central America (SIECA).

The FAO team includes biologists, economists, fishing experts, processing technologists and consultants.

CEYLON

FAO/UNDP-TA

- Fishing Vessel Design, Exploratory Fishing and Gear Technology.

CHILE

FAO/UNDP-SF
CHI 9

- Fisheries Development Institute

This FAO/UNDP-SF project was initiated in 1963 and is planned for the duration of 5 years. The SF allocation is \$1,513,200 whilst Government counterpart contributions amount to \$3,271,400.

The purpose of this FAO/UNDP-SF project is to establish a Fisheries Development Institute in Santiago, which Institute will also direct other work carried on at various locations along the coast.

Amongst other programs, such as raw material assessment, improvements of fishing methods and consequently of vessel and gear design, economics of exploitation and marketing statistics etc. a number of investigations will be carried out in the industrial sector.

This covers such aspects as specifying quality grades and establishing quality control through training courses in laboratories and industries, assisting the Government in their efforts to improve existing processing industries, the development of suitable products from the raw material available, including better packing, distribution and improved factory efficiency.

During the operation of this project, work in the training and industrial development section has increasingly been oriented towards overcoming specific problems within the industry. Amongst other things, a paper on "Fish Meal Industry in the North of Chile - capacity, equipment and utilization, 1965" has been completed. This study gives a full picture of the existing reduction industry, its output, employment and efficiency.

Another report that has been prepared is on the organization and requirements for freezing and fileting, in collaboration with the Technology Section of the Institute. A number of studies have further been requested by private industries, and have been taken on by the Institute when their importance in the development of the country's economy and their feasibility are considered sound. These studies deal for instance with such investigations as on: Shrimp and langostino freezing; salted and dried hake and fishmeal; crab and mussel canning, plans for expansions of present installations, incorporating freezing of hake; drying and freezing of hake; canning; freezing, drying of fish meal and hake; fish canning plants, etc.

The FAO team includes Research Scientists, Biologists, Experts in Fishing Gear and Methods, in small boat design, Technologists for quality control, processing and freezing.

CHINA (Republic of)

- Economic appraisal and evaluation of the fisheries industry of Taiwan and the existing development program. Identification of major problems that require special consideration and/or improvement. Planning for further development - especially on tuna fishing, deep-sea trawling and their related industries.

Technical Assistance allocation \$14,600.

FAO/UNDP-TA
Code CHA.2

COLOMBIA

- Marine Fisheries Development Project

This FAO operated project aims at development of marine fisheries and includes establishment of experimental fishing, surveys, advisory services, etc. SF allocation \$998,700; Government contribution \$951,385.

FAO/UNDP-SF
COL.22

CUBA

- Experimental and exploratory fishing, gear technology and fishing methods, resources evaluation, shell fish culture and project evaluation.

FAO/UNDP-TA

DOMINICAN REPUBLIC

- Continuation of work initiated a few years ago. Future responsibilities of the expert will include the following: Assistance in the training of technical and administrative fisheries staff, organization of statistical and economic research services, improvement of fish processing and marketing, and rehabilitation of the lagoon fisheries.

Technical Assistance allocation \$87,200.

Note: Project duration 1965-1968.

FAO/UNDP-TA
Code DAK.5

EAST AFRICA (Republics of Kenya, Tanzania and Uganda)- Lake Victoria Fisheries ResearchFAO/UNDP-SF
AFR/REG.49

This FAO operated UNDP-SF project is to become operational shortly and is for the duration of 5 years. The SF allocation amounts to \$810,000 whilst Government counterpart contribution is \$659,273.

It is a project aimed at the management and development of fresh-water fisheries of Lake Victoria, through experimental fishing, biological investigations, products development, economic surveys and the establishment of a statistical service. The project will, in particular, strengthen the activities of the East African Fresh-water Fisheries Research Organization. It covers also the field of fish products development in cooperation with the Experimental Fish Processing and Demonstration Field Station of Mwanza, Tanzania.

ECUADOR- National Fisheries InstituteFAO/UNDP-TA
Code ECU.1

Upon termination of the UNDP/SF project for which FAO was the executing agency, a Fisheries Development Adviser to be appointed under UNDP/TA to assume liaison duties between the National Fisheries Institute and the Government fisheries administration. The Adviser is to assist the Institute furthermore in the planning and conduct of economic and cost-accounting studies relating to the different sectors of the fishery industry of the country.

Technical Assistance allocation \$22,000.

FEDERATION OF SOUTH ARABIA (Gulf of Aden)- Fishery Development in the Gulf of AdenFAO/UNDP-SF
SOA.38

This FAO/UNDP-SF project has been initiated in 1966 and has a duration of three years. The SF allocation is \$948,300 whilst Government contributes counterpart funds to the extent of \$637,900.

The purpose of this FAO/SF project is to assist the Government in the development of marine fisheries, pre-investment surveys of the fishery resources of the Gulf of Aden and nearby waters and in the training of fishermen and master fishermen.

To achieve this collation and analysis on oceanographic conditions and fisheries resources, appraisal through exploratory fishing, composition, distribution and magnitude with a view to assessing the fish stocks, forms an integrated part of the project, leading to drawing up of development plans.

Exploratory fishing vessel, and gear as well as scientific laboratory equipment, is provided for in the budget.

GHANA- Fishery Research UnitFAO/UNDP-SF
GHA.8

This FAO/UNDP-SF project has been initiated in 1955 and is for a duration of 5 years. SF allocation consists of \$1,442,800 whilst Government contributions amount to \$1,139,900.

The research program to be undertaken has two main objectives: (1) a study on the biology of the sardinella with special regard to expanding the fishing season; (2) a study of the composition of the demersal fish stocks and of the effect of the fishing operations on them. In addition, studies of distribution and

fishing techniques for tuna and horse mackerel (*Caranx hippos*) are undertaken.

The project, for which FAO is recruiting an international team of experts, is therefore largely directed towards biological problems of stock assessment, and to the development of suitable and economically profitable gear and new catch techniques, as a pre-investment for further action.

The sardinella and tuna fisheries research programs are of international importance and will represent an essential part of the future co-ordinated researches in the Gulf of Guinea.

- Expansion of Facilities for Fisheries Research on the Volta Lake

FAO/UNDP-SF
GHA.10

This FAO/UNDP-SF was initiated in 1965 and is for a duration of six years. (SF allocation: \$1,686,000; Government counterpart contribution \$1,797,500).

In view of the national importance of the large man-made lake, which is being created by the construction of the Volta Dam, FAO is assisting three Institutes of the Academy of Sciences, namely the Institute of Aquatic Biology, the Institute of Health and Medical Research, and the Water Resources Institute in carrying out research studies on phytoplankton and zooplankton; aquatic vectors and weeds; Taxonomy and biology of fish as well as its parasites; quality of water in the lake as well as its tributaries, etc.

A research vessel, etc., for this project, being largely resources oriented, as well as part staff and other facilities will be made available whilst FAO recruits a team of international specialists consisting of biologists, fisheries technicians, economists and processing technologists.

INDIA

- Fisheries Training Institute, Bombay

FAO/UNDP-SF
IND.12

This FAO/UNDP-SF project was initiated in 1962 and is to be completed in 1966. (SF allocation: \$655,205; Government counterpart contribution: \$1,818,669).

The purpose of this FAO/UNDP-SF project is to establish a Central Institute of Fisheries Education in Bombay in order to train Fisheries Officers required at district level for the development of the fisheries industry, and also to train other personnel requiring similar training.

The Institute in Bombay will be equipped with laboratories, fishing training vessels, machinery, gear, etc., whilst an inland fisheries station will be established in Orissa State.

The Institute offers a two year postgraduate diploma course for students who already possess a university degree. The curriculum in addition to elements of such matters as studies in ecology, fish culture, conservation, catching methods, operation of boats and gears, includes, on the technological side, harbours, shore establishments, preservation and processing, storage and distribution.

Furthermore, the curriculum includes on the economic side labour and industrial structure, finance, credit, institutional structure, etc. Students will also undertake field work and participate in operations on sea and on land. FAO recruits the international experts, consisting of economists, biologists, gear and processing technologists.

- Pre-Investment Survey of Fishing Harbours

FAO/UNDP-SF
IND.55

To carry out necessary economic and technical studies to identify priority sites for the development of fishing harbours, and to propose preliminary construction plans. This FAO operated project has a Special Fund allocation of \$694,400 and a Government contribution of \$535,300.

ISRAEL

- Frozen fish processing and marketing

FAO/UNDP-TA

JAMAICA

- Exploratory fishing, improvement in fishing methods and gear

FAO/UNDP-TA

KOREA

- Deep Sea Fishing Training Centre, Pusan

FAO/UNDP-SF
KOR.10

This FAO/UNDP-SF project was initiated in 1964 and is to be completed by 1969. (SF allocation: \$1,013,500; Government counterpart contribution: \$932,206).

The purpose of this project is to establish and operate a Deep Sea Fishing Training Centre to produce qualified technicians rapidly and efficiently.

The Centre is accommodated at the Ministry of Agriculture and Forestry's Central Fisheries Experimental Station at Pusan, the largest fishing centre of the country. Trainees are selected from graduates of fishery colleges, fishery high schools and other vocational schools, as well as among fishermen. Extensive practical training, mostly aboard training vessels, but partly ashore, is given for a period of 6-12 months, and emphasis is given on fishing techniques, particularly tuna fishing and various types of trawl fishing, and includes instruction in navigation and marine engines. The training vessels are making long distance fishing cruises to the North Pacific, Indian Ocean and China Seas. Appropriate technical training is also provided to selected small boat operators in the use of more efficient gear and methods. Fishing operations conducted under commercial fishing conditions have shown to be profitable.

LIBYA

- Consultant on vessel design and procurement

FAO/Funds-
in-Trust

MALAWI

- General fisheries, and fish processing development

FAO/UNDP-TA
Code MLN.8

To increase the efficiency of fisheries services in Malawi. The Fisheries Officer will take charge of the Lake Malawi Fisheries region, under the direction of the Chief Fisheries Officer. He will be required to keep in close contact with fishermen to implement development schemes and to collect statistics.

Technical Assistance allocation: \$55,500.

Note: Project duration 1966-1969.

MALI**- Fish preservation, storage, packaging**FAO/UNDP-TA
Code ML.I.9

Continuation of the project initiated in 1964 improving the handling and processing of fish and the storage and distribution of smoked and unsalted dried fish products.

Technical Assistance allocation \$82,400

Note: Duration of project 1965-1968

MEXICO**- Fishery Research and Development project**FAO/UNDP-SF
MEX.15

This FAO operated project is to provide advisory services to review the factors affecting the development of Mexican fisheries, to make surveys and feasibility studies in the waters off Baja California and adjacent areas, initiation of long-term shrimp research, surveys and feasibility studies along the lower Pacific Coast. There is a Special Fund allocation of \$1,530,700 with a Government contribution of \$2,105,200.

NIGERIA**- Fisheries Survey in the Western and Mid-West Regions**FAO/UNDP-SF
NIG.6

This FAO/UNDP-SF project was initiated in 1961, revised in 1963, and is to be terminated by 1967. (SF allocation \$540,655; Government counterpart contribution \$441,571).

The purpose of this project is to survey the fisheries resources in the Western and Mid-West region. The project consists of two phases. The first is a survey to supply basic information on the potentialities of fishery resources, and on the various economic and technical factors with relation to the exploitation and utilization of these resources. This phase will also cover the study under present conditions of fishing methods, fish handling, preservation, processing and marketing. The second phase involves demonstration and pilot schemes in order to determine the most economical methods for development schemes, expanding the fishing industry including processing and marketing.

The international team of FAO experts includes amongst other disciplines specialists for processing and quality control, fishing gear and fishing methods. Fish preservation also takes into account traditional processing methods used by indigenous fishermen, and practical work to improve such methods.

To achieve this, provision is made to set up pilot demonstration plants for salting, drying and smoke-drying of fish, and successful experiments were conducted by the FAO processing specialist for the Western Nigeria Fishermen's Co-operative Association in Lagos, and also Aiyetoro (Drum and Almona type of driers). Plans for a fish terminal in Warri have also been prepared by this expert. The terminal is to be situated on the Warri river, and is expected to include a leading jetty and facilities for cold storage, an ice plant, smoke house, store room, and laboratory for quality control.

PAKISTAN- Survey for the development of fisheries in East PakistanFAO/UNDP-SF
PAK.22

This FAO operated UNDP-SF project commenced in 1965 and is for a duration of 5 years. (SF allocation \$1,463,700, Government counterpart contribution \$1,316,447).

The project in particular is assessing the potential for increased fish production by carrying out exploratory fishing trials and biological studies. Exploratory and experimental fishing operations will take place mainly in the Bay of Bengal off the coast of East Pakistan, and in the estuaries and the lower reaches of the main river systems. Two vessels will use a number of different fishing techniques, including trawling, purse-seining, gill netting, long-lining, etc., so that a core of skilled fishermen competent in operating modern fishing craft and gear becomes available.

The FAO recruited international team includes a Gear Technologist, a Fish Products Technologist and a Marketing Expert, to ensure that processing, marketing, and distribution problems can be dealt with adequately.

PERU- Peruvian Sea Institute (formerly Marine Resources Research Institute)FAO/UNDP-SF
PER.2

Additional assistance to the Peruvian Sea Institute for further study of anchovy stocks, including population dynamics, and survey of other fishery resources. This FAO operated project has a SF allocation of \$762,700 with the Government contribution of \$2,198,600.

PHILIPPINES- Deep-Sea Fishing DevelopmentFAO/UNDP-SF
PHI.11

This FAO operated UNDP/SF project has been initiated in 1965 and is for a duration of 5 years. The SF allocation is \$1,267,800 and the Government counterpart contribution \$2,457,350.

The main objectives of this project are to carry out extensive experimental fishing and to train fishermen in new fishing methods, to improve methods of fish preservation and processing, marketing and distribution, in order to advise on the technical and economic planning of the fisheries industry.

Training will take place on experimental fishing vessels as well as on commercial vessels, as the project is conducted in close cooperation with the industry. Experimental fishing is carried out in the waters around the Philippine Islands, including the Celebes Sea, the Sulu Sea, part of the South Chinese Sea, Pacific water off the Philippines and straits between the Islands.

Particular attention will be paid to skipjack and tuna fishing in the Celebes and Sulu seas, utilizing different techniques including tuna long-lining, purse-seining, trawling, live-bait fishing, gill netting, troll fishing and line fishing.

Particular attention is also given to improve methods of fish handling, preservation and processing, with emphasis on new methods, as well as on the improvement of traditional methods. Activities include smoking, salting, canning, freezing, fermented products development, pickling, etc. The fish processing plants of the Fisheries Commissions are made available for experimental work on fish processing.

In addition to this, advisory services, mainly through consultants are made available in order to develop and finance projects such as new fishing harbours, canning factories, fleet building programs, improved ship building facilities, ice plants, cold stores, and freezing plants. To achieve this the FAO team includes specialists on fish processing technology, but also a naval architect/boat builder, marketing specialists and fisheries economists.

SOMALIA

FAO/UNDP-SF
SOM.13

- This FAO operated project assists the Government of the Republic of Somalia in the development of the fishing industry through resource surveys. There is a Special Fund allocation of \$576,900 and a Government allocation of \$80,000.

YEMEN

FAO/UNDP-SF
YMN.14

- Fishery Research and Development Project

This FAO operated project aims at a survey of coastal pelagic fish stocks; biological evaluation of marine resources to determine the potential of fishery developments; exploratory and experimental fishing. Consultant services also in other fields, like processing technology, marketing, plans for infra-structure, etc.. There is a Special Fund allocation of \$1,179,600 with a Government contribution of \$4,245,612.

VIET-NAM

FAO/UNDP-TA
Code VII.1

- Fishing harbour development

Construction of a fishing port with a view to developing and modernising fish marketing.

Technical Assistance allocation \$22,000.

- Off-shore Fishery Development

FAO/UNDP-SF
Code VII.3

This FAO operated project aims at exploratory fishing and feasibility surveys by various fishing gear and methods. Training of fishermen and crews.

There is a Special Fund allocation of \$1,037,900 and a Government contribution of \$942,625.

III. FIELD ACTION PROJECTS AND PROGRAMS. - Description of selected current field projects for which FAO provides assistance upon government request.

5. Projects dealing with policies and planning, economic, social and institutional aspects and problems of industrial development based on raw materials derived from Agriculture, Forestry and Fisheries

ALGERIA

- Development of marketing facilities and agencies, including cold storage and economic aspects of location of processing industries. FAO/UNDP-TA
Code 124-63
Technical Assistance allocation: US\$6,900.
- Agricultural planning, including supply and processing industries. FAO/UNDP-TA
Code 124-63
Technical Assistance allocation: US\$43,860

CHAD

- Marketing expert to advise the Société Nationales de Commercialisation essentially on improved handling methods for staple food crops, including storage and transport. FAO/UNDP-TA
Code 99-61
Technical Assistance allocation: US\$10,750.

CHILE

- Meat marketing, preparation of detailed plans for location and operation of slaughterhouses and meat processing plants in the southern part of the country; introduction of new ways and means to transport meat and live animals. FAO/UNDP-TA
Code 68-53
Technical Assistance allocation: US\$21,200. This post to continue during 1967.
(See also p.70, 1966 Annual Report, ID/B/3/Add.3)

COLOMBIA

- Institute for Training and Research in Agricultural Marketing, Bogota. FAO/UNDP-SF
COL 14

The Institute continued to carry out detailed surveys on marketing infrastructure for agricultural produce in Colombia and in some neighbouring countries. These surveys included assessment of necessary processing capacity, storage, transport, etc. In particular a pre-investment survey for a fruit processing plant for INCORA, a survey on the sugar industry, and surveys on wholesale markets and grain storage networks in Colombia were completed. The project is for a duration of 5 years. Government contribution: US\$918,182; SF allocation US\$807,900.

In addition to this, advisory services, mainly through consultants are made available in order to develop and finance projects such as new fishing harbours, canning factories, fleet building programs, improved ship building facilities, ice plants, cold stores, and freezing plants. To achieve this the FAO team includes specialists on fish processing technology, but also a naval architect/boat builder, marketing specialists and fisheries economists.

SOMALIA

- This FAO operated project assists the Government of the Republic of Somalia in the development of the fishing industry through resource surveys. There is a Special Fund allocation of \$576,900 and a Government allocation of \$80,000.

FAO/UNDP-SF
SON.13

VENEZUELA

- Fishery Research and Development Project

This FAO operated project aims at a survey of coastal pelagic fish stocks; biological evaluation of marine resources to determine the potential of fishery developments; exploratory and experimental fishing. Consultant services also in other fields, like processing technology, marketing, plans for infra-structure, etc.. There is a Special Fund allocation of \$1,179,600 with a Government contribution of \$4,245,612.

FAO/UNDP-SF
VEN.14

VIEI-NAM

- Fishing harbour development

Construction of a fishing port with a view to developing and modernising fish marketing.

Technical Assistance allocation \$22,000.

FAO/UNDP-TA
Code VIE.1

- Off-shore Fishery Development

This FAO operated project aims at exploratory fishing and feasibility surveys by various fishing gear and methods. Training of fishermen and crews.

There is a Special Fund allocation of \$1,037,900 and a Government contribution of \$942,625.

FAO/UNDP-SF
Code VIE.3

III. FIELD ACTION PROJECTS AND PROGRAMS. - Description of selected current field projects for which FAO provides assistance upon government request.

5. Projects dealing with policies and planning, economic, social and institutional aspects and problems of industrial development based on raw materials derived from Agriculture, Forestry and Fisheries

ALGERIA

- Development of marketing facilities and agencies, including cold storage and economic aspects of location of processing industries. FAO/UNDP-TA
Code 124-63
Technical Assistance allocation: US\$6,900.
- Agricultural planning, including supply and processing industries. FAO/UNDP-TA
Code 124-63
Technical Assistance allocation: US\$43,860

CHAD

- Marketing expert to advise the Société Nationale de Commercialisation essentially on improved handling methods for staple food crops, including storage and transport. FAO/UNDP-TA
Code 99-61
Technical Assistance allocation: US\$10,750.

CHILE

- Meat marketing, preparation of detailed plans for location and operation of slaughterhouses and meat processing plants in the southern part of the country; introduction of new ways and means to transport meat and live animals. FAO/UNDP-TA
Code 68-53
Technical Assistance allocation: US\$21,200. This post to continue during 1967.
(See also p.70, 1966 Annual Report, ID/B/3/Add.3)

COLOMBIA

- Institute for Training and Research in Agricultural Marketing, Bogota. FAO/UNDP-SF
COL 14

The Institute continued to carry out detailed surveys on marketing infrastructure for agricultural produce in Colombia and in some neighbouring countries. These surveys included assessment of necessary processing capacity, storage, transport, etc. In particular a pre-investment survey for a fruit processing plant for INCORA, a survey on the sugar industry, and surveys on wholesale markets and grain storage networks in Colombia were completed. The project is for a duration of 5 years. Government contribution: US\$918,182; SF allocation US\$807,900.

CONGO (Brassaville)

- Adviser to the Government Marketing Board, concerned with handling, storage and trade of staple food and export crops.
Technical Assistance allocation: US\$8,900.

FAO/UNDP-TA
Code 107-61DAHOMY

- Assistance to Produce Marketing Board (OCAD)

FAO/UNDP-TA
Code 107-61

Among the functions of OCAD (which, since August 1963 and continuing to end 1968, is being closely assisted by an FAO marketing expert) are provision and operation of processing and storage facilities, chiefly for maize and groundnuts. Investigations are currently being conducted for construction of silos to hold 3,000 tons of maize; two groundnut shelling plants (\$33,000) and a warehouse (\$32,000) - to be financed by the Fonds Européen de Développement and handling the total crop of North Dahomey - are to be constructed shortly; a pilot cashew decorticator is under consideration.

Technical Assistance allocation: US\$23,300.

ETHIOPIA

- Technical Director Coffee Board; Technical Assistance allocation: US\$15,150.

FAO/UNDP-TA
Code 166-65GABON

- Food Industries' Survey by an FAO Consultant (2 months' allocation)

FAO/RP

GHANA

- Marketing advisor to assist in price stabilization for cereals; this includes aspects and problems of storage, transport and foreign trade regulations.
Technical Assistance allocation: US\$13,000.

FAO/UNDP-TA
Code 6-58GUINEA

- Cold storage and transportation for perishable fruits and vegetables.

FAO/Funds-in-Trust

An FAO expert has advised the Government on a comprehensive program for the improvement and development of cold storage and transportation facilities for perishable fruits and vegetables in order to improve domestic and export sales. (Duration 18 months; commenced 1966 - to be completed during 1967).

IRAN

- Food Supply Planner
Technical Assistance allocation: US\$19,000

FAO/UNDP-TA
Code 63-56

- Marketing in connection with the livestock and meat marketing system and planning for relocation and expansion of the slaughterhouse facilities.
Technical Assistance allocation: US\$17,300.

IVORY COAST

- Food Industries Survey

FAO/IFP

An FAO consultant is surveying during 1967 (two months' allocation) the existing food industries and will make recommendations for the development of selected industries based on the utilisation of locally available raw materials.

JORDAN

- Research, Demonstration and Training in Agricultural Marketing, Amman

FAO/UNDP-SF
JOR 7

One of the major activities of this FAO operated project was the introduction of modern handling, grading and packing facilities for fruit and vegetables. Three packing plants were established, two for tomatoes and another for citrus fruits with the assistance of USAID. Apart from this, the project staff further investigated the economic feasibility of expanding the tomato paste and jam production capacity of the country. Assistance was also provided to the Government with studies on the relocation and expansion of slaughterhouse facilities in Amman. The project is for a duration of 4 years. Government contribution US\$354,232; Special Fund allocation US\$640,100.

KENYA

- Animal Health and Industry Training Institute, Kabate
- Dairy and Veterinary Education and Research
(3 man-years Technical Assistance allocation for 1967)

FAO/UNDP-SF
KEN 7FAO/UNDP-TA
Code 7-60LIBERIA

- College of Agriculture and Forestry,
University of Liberia.

FAO/UNDP-SF
LIR 1MALAGASY REPUBLIC

- The FAO Agricultural Marketing Advisor to carry out a feasibility study on the establishment of a plant for soluble coffee extracts.
Technical Assistance allocation: US\$19,700.

FAO/UNDP-TA
Code 70-60

- Surveys for the Agricultural Development of the Farafangana Region

FAO/UNDP-SF
MAD 6

This FAO/UNDP-SF project is for a duration of 4 years and is preparing a comprehensive development plan for the Farafangana Region in order to identify and appraise specific

priority projects which may be ready for early implementation. The plan of operation provides for a consultant in the field of agricultural industries. (UNDP allocation US\$1,137,000; Government contribution: US\$139,000 and US\$510,204 in kind).

MALAYSIA

- Advisor to the Government Marketing Authority assisting in preparing new marketing arrangements through Marketing Boards, which include location of rice mills and economic aspects of paddy and rice storage and transport; Technical Assistance allocation: US\$16,350.

FAO/UNDP-TA
Code 40-57

MAURITIUS

- FAO marketing expert primarily concerned with organizing co-operative marketing societies for onions and potatoes, including transportation and storage, and also economic aspects of the dairy industry. Technical Assistance allocation US\$15,350.
- OPEX advisor to the Marketing Board concerning storage and trade of agricultural products; OPEX allocation US\$5,700.

FAO/UNDP-TA
Code 84-63

OPEX

MEXICO

- Integrated Agricultural Program for Education, Research and Extension Work, Chapingo

FAO/UNDP-SF
MEX 6

An FAO marketing expert carried out research on the marketing of livestock and livestock products, including economic aspects of slaughtering facilities and meat packing (12 months in 1967).

MOROCCO

- Marketing advisor to the Grain Board regarding economic feasibility of expanding grain storage facilities in the ports. Technical Assistance allocation: US\$9,550.
- Economic planning, including processing industries. Technical Assistance allocation: US\$8,000.
- As a continuation of the FAO/UNDP-SF project (MOR 8) "Study for the Planned Economic Development of the Sebou Basin" this project is preparing feasibility studies concerning food processing industries, sugar mills, cotton ginning establishments and agricultural implements. (UNDP allocation: US\$605,000; Government contribution US\$78,000 and US\$800,400 in kind).

FAO/UNDP-TA
Code 103-57

FAO/UNDP-TA
Code 103-57

NIGER

- Development of Animal Production and Water Resources in Eastern Niger

FAO/UNDP-SF
NEh 7

FAO marketing experts carried out during 1967 surveys of domestic and foreign meat marketing systems with a view to increasing supply of meat from slaughterhouses which might be established in the Zinder region. The surveys included economic aspects of location, capacity and organization of the slaughterhouse as well as problems of pre-packaging and transport of meat.

NIGERIA

- FAO agricultural marketing advisor assisting in the planning of concentrated feed industry as well as with regard to marketing of poultry and eggs.
Technical Assistance allocation: US\$12,200.

FAO/UNDP-TA
Code 34-60

PERU

- Land and Water Use Surveys for the Development of the Huaura River Basins.

FAO/UNDP-SF
PER 23

An FAO marketing expert assisted the project in the introduction of new processed foods. This task includes the survey of marketing possibilities, market infrastructure and the economics of establishing packing plants, cold storage and processing facilities. (4 months in 1967).

SIERRA LEONE

- Integrated Development of the Agricultural Sector

FAO/UNDP-SF

The purpose of this FAO operated project is to assist the Government in the preparation and initial implementation of a development plan for the agricultural sector. The processing of such agricultural products as oil palm seeds and kernels, or animal feedstuffs, and the expansion and improvement of the existing rice milling industry are included in the project which is for a duration of 2 years. The total UNDP-SF allocation is \$328,900.

SOMALIA

- The Government is making concerted efforts to improve the returns from the livestock sector. The FAO economist has had to look into the problem of constructing and improving meat works. Another FAO economist made a detailed study of the scope of setting up a factory for the production of banana powder. Technical Assistance allocation for 1967: \$28,250.

FAO/UNDP-TA
Code 98-38

- Grain Marketing, Storage and Price Stabilization

FAO/UNDP-SF
SOM 7

With a view to encouraging local production of grains (generally sorghum and maize) the Government, with FAO's assistance, has established a marketing organisation with the task of purchasing, cleaning, storing and selling grain. In the initial period, the operation will be on an administrative basis. It is envisaged that in the long run the organisation will act essentially as a government price stabilising authority. The project owns its storage facilities and is operating largely independently under the Ministry of Agriculture. The project is for a duration of 5 years. Government contribution: US\$1,061,103. Special Fund allocation: US\$ 1,066,800.

SOUTH ARABIA

- An FAO expert dealt with the problems of establishing a cotton seed oil mill, tanning works and a cannery. Technical Assistance allocation for 7 months in 1967.

FAO/UNDP-TA

SUDAN

- An FAO economist prepared proposals for the establishment of a second sugar factory and also studied the economics of cotton ginning. Technical Assistance allocation over 1967: US\$28,050.

FAO/UNDP-TA
Code 10-57

SYRIAN ARAB REPUBLIC

- Damascus Agricultural Research Station

FAO/UNDP-SF
STR 14

TUNISIA

- North African College for Agricultural Engineering

FAO/FFHC

This FAO operated FFHC project was initiated in July 1964 and during 1965 the training session accommodated 38 students in well converted buildings. The FAO-recruited staff of 5 instructors (including the project manager, 2 Peace Corps volunteers and one Associate Expert) will soon be completed by a sixth instructor (soil and moisture conservation). The building conversion now under way will provide internal accommodation for 55 students for the 1966/67 session. Church groups in Germany, England and the U.S.A. have contributed US\$520,000 through the Council of Churches, whilst the Government contributes US\$1.5 million. The college has 50 percent of its places reserved for students from neighbouring French speaking countries, Algeria and Morocco.

- Integrated Rural Plan for Central Tunisia

FAO/UNDP-SF
TUN 8

At the end of field operations during 1967, specific proposals relating to the development of small-scale wood utilisation industries, processing of livestock products, fruits and vegetables were prepared by the FAO experts.

(UNDP allocation: US\$893,070; Government contribution: US\$105,730; and Government contribution in kind: US\$861,805.)

TURKEY

- The FAO economist has made a study of the sugar industry, in particular with respect to the need for expanding the capacity of sugar factories. Technical Assistance allocation for 1967: US\$72,915. FAO/UNDP-TA
Code 34-55

- The FAO livestock and meat marketing expert is making proposals for the new livestock markets and is assisting Government agencies in the planning and location of new slaughterhouses; Technical Assistance allocation: US\$18,150. FAO/UNDP-TA
Code 34-55

UNITED ARAB REPUBLIC

- Pre-investment Survey of the Northwestern Coastal Region FAO/UNDP-SF
UAR 49

As olive growing is a major activity in this region, the problem of olive oil processing and location of mills will be dealt with during 1967 (12 months' allocation).

YEMEN

- An OPEX advisor to assist the Government in the preparation of OPEX and planning for a vegetable dehydration plant in the southwestern part of the country; 12 months during 1967.

III. FIELD ACTION PROJECTS AND PROGRAMS. - Description of selected current field projects for which FAO provides assistance upon government request.

6. World Food Program Assistance to Development Projects in the Field of Industry.

Introduction

The UN/FAO World Food Program was established first on an experimental basis for a period of three years by FAO Conference Resolution 1/61 adopted on 22 November 1961 and UN General Assembly Resolution 1714 (XVI) adopted on 19 December 1961. Operations started in 1963. By FAO Conference Resolution 4/65 of 6 December 1965 and UN General Assembly Resolution 2095 (XX) of 20 December 1965, the World Food Program was extended on a continuing basis for as long as multilateral food aid is found feasible and desirable.

The main objective of the Program is to use food as an aid to economic and social development, particularly through labor intensive projects for irrigation, land reclamation, road construction and afforestation; through feeding programs to promote education and industrial productivity and through such measures as land settlement and livestock development. Some of the projects in FAO's field are related to industry.

Projects should be technically sound and economically feasible and they should relate to the development plans or policies of the requesting country or be in general conformity with the country's overall development prospects. Moreover, the provision of food aid should have no harmful effect on local agricultural production and on the normal volume and value of domestic and foreign trade.

Requests for WFP assistance are prepared by the interested Government, with the assistance, if necessary, of WFP and/or UN agencies staff. ^{1/} They are channelled through the UNDP Resident Representatives who also act as WFP representatives.

Targets for pledges were established at \$100 million for the period 1963-1965 and at \$275 million for the period 1966-1968. As of 20 September 1967, total cumulative resources available to WFP from inception to the end of 1968 amounted to some \$264 million. Provision being made for administrative expenditure and for emergency operations, some \$182 million were available for development projects. At the same time, 245 projects had been approved, representing a total cost of \$218 million. However, a part of those commitments related to shipments to be made in 1969 or later and are, therefore, charged against future pledges. This means that some \$19 million were available on 20 September 1967 for assisting further development projects up to the end of 1968.

As of 20 September 1967, out of the 245 approved projects, five are clearly of an industrial nature (at a total cost of \$2.5 million). Three of them relate to the production of couscous, of pulp and paper and of nitrogen for fertiliser; they are therefore of direct interest to FAO.

Twelve projects, amounting to a total cost of \$17.7 million, have some bearing on the development of the agriculture-based industries. They are related to the collection and chilling of milk and to increasing production of milk, meat or eggs through the provision of mixed feed, a part of which is supplied by WFP. Five additional projects have been approved but are not yet operational.

^{1/} Pro-forma requests are available and should be adhered to.

The following notes summarize the main data on the various operational projects referred to above:

GHANA (255) - Development of poultry and pig industry.

In order to reduce the protein deficiency in the diet of a large part of the population and to satisfy the increasing demand for animal products in the big towns, the Government of Ghana embarked in 1952 upon a program of building up a commercial poultry and pig industry. In the initial years, the development of this program was mainly based on imported feed and chickens. The country is now able to produce locally the compounded rations needed and it will be possible to limit importation to only the pre-mixes (vitamins, minerals and antibiotics) which will be combined with locally produced peanut cake, fishmeal and rice bran. Attempts have been made to increase the production of maize, which constitutes the major ingredient of the ration, by the introduction of a high yielding variety of hybrid maize; however, production has not yet caught up with the full requirements of the industry and increased human consumption.

In these circumstances, WFP has agreed to supply 4,000 tons of maize, to match an equal quantity of local concentrated feed and imported supplements with which to produce compound rations to keep the industry going until the situation becomes easier. Adequate milling and mixing capacity (3,000 tons per month) and sufficient storage and transport facilities are available.

The proceeds of the sales of maize to the producing agency will be used by the Ministry of Agriculture for the further promotion of the poultry and pig industry in Ghana. The project was approved in August 1966. Its total cost to WFP amounts to \$335,600. By 20 September 1967, 2,300 tons of maize had been delivered.

INDIA (252) - Supply of maize for poultry development projects
(assistance in the development of animal feed mix industry)

Adverse weather conditions in 1964 and subsequently reduced local production of maize in certain states of India, caused a sharp rise in the price of this commodity. Consequently, the price of poultry feed also rose to a very high level. The shortage of maize and the rise in the price level resulted in a sharp reduction of poultry production in the country and in the closure of poultry farms. In order to alleviate this situation, the Government requested WFP for supply of 20,000 tons of maize to be mixed with local ingredients in the ratio of 20:80 and sold to the farmers of the affected areas at a reasonable price. The sales proceeds are to be used for the further expansion of the poultry industry including:

- (a) the provision of the necessary grinding and mixing equipment in addition to that already in existence;
- (b) purchase of other local ingredients;
- (c) subsequent purchase of locally produced coarse grains.

The Government is increasing the production of hybrid maize in the country and has completed a survey of the possibilities of using agricultural and industrial by-products for poultry feeding. The use of balanced feed for poultry is expected to spread gradually to all Indian states where poultry farming is gaining in popularity.

The project was approved in April 1965; its total cost to WFP amounts to \$1,588,000; it became operational in March 1966. About one-quarter of the maize had been delivered by 20 September 1967.

INDIA (348) - Improvement of milk supply through balanced feeding of cattle and milk toning (assistance in development of dairy and animal feed industry).

Another project aiming at increasing milk production, but on a wider scale, is also assisted by WFP. Simultaneously with increased milk yields, livestock improvement in India also needs to provide for draught animals, since there is no prospect of early mechanization of agriculture and transport in the country.

To meet these needs, the Government had launched an intensive cattle development program under which all the measures and investments considered necessary will be concentrated in selected favourable areas. The measures include the establishment of central semen collection stations, artificial insemination centres, organization of veterinary and dairy extension services, and feed and fodder development, including the establishment of feed mixing mills where necessary, for the manufacture and distribution of balanced feed. Each intensive cattle development scheme is linked with a dairy plant, so that the dairies are worked to their installed capacity and the milk produced finds a ready and remunerative market.

A major impediment to the raising of the productivity of cattle is an inadequate supply of feed. It is estimated that the available fodder supplies are hardly sufficient to meet 70 percent of the needs and that the available concentrates do not even meet 30 percent of the requirements. The scope for further extending the area under fodder crops is limited by the small size of farm holdings and the competing demand for land for the production of food grains and cash crops. In addition to the problem of increasing fodder supplies, development of the cattle industry is hampered by the difficulty of organizing milk production on a commercial scale. The immediate solution envisaged is to make more balanced cattle feed compound available. WFP has accepted to supply 82,000 tons of maize and sorghum to be mixed with locally available feed ingredients for the manufacture of a balanced feed for sale to the cattle owners in the following eleven Intensive Cattle Development (ICD) blocks, on a no-profit no-loss basis: Bombay, Calcutta, Delhi, Ahmedabad, Hyderabad, Kanpur, Bangalore, Madras, Bhopal, Baroda and Madurai. Each block, it has been estimated, contains 100,000 female bovine cattle, half of which will be in milk at a time, but only 40 percent of these will be producing at a level which will pay for concentrated feeding. It is estimated that to begin with not more than half the farmers will avail themselves of the facility to buy the balanced feed. The daily mixed feed ration will be 3 kg. per animal. Of this the maize and sorghum to be supplied by WFP will constitute 1/3 of the feed ration (66 percent maize and 33 percent sorghum). 8500 tons of dried skim milk is also to be supplied by WFP for toning the local milk supply.

The project became operational in April 1967; its total cost to WFP will amount to \$10.3 million.

INDIA (054) - Increase of milk production in Anand, Gujarat
(assistance in dairy industry and feed mixing development)

The need to increase the consumption of animal protein foods by urban communities is receiving close attention in India. Milk is one of the widely acceptable as well as nutritionally desirable forms of these foods and a number of government demonstration farms as well as non-governmental co-operative societies have been established in order to promote the dairy industry. The Kaira District Cooperative Milk Producers' Union at Anand, Gujarat State, is one of the best known of these co-operatives. The Union has been effectively expanding its activities and its milk production has been raised from 500 lbs. (230 kg) per day in 1948 to a daily average of 275,410 lbs. (125 metric tons) in 1962. The Union is now building extensions to its dairy plant which will permit a daily output of about 1 million lbs. (445 metric tons). In furtherance of this undertaking, the Union has

formulated a large seven-year development plan for increasing the productivity of the dairy industry in the area. WFP assistance is provided in support of this plan for a period of approximately two years.

The project aims at increasing production of milk per animal and reducing the cost per unit of output by providing balanced feed mixture for the cattle. In order to help prepare this mixture, a feed-mixing mill has been provided by the Oxford Committee for Famine Relief (OXFAM) under the auspices of the Freedom from Hunger Campaign. WFP is providing 16,675 tons of feed grains which are ground and mixed with local supplies. The balanced ration thus prepared is sold at a reasonable price to the members of the Union. It is expected that WFP assistance will have considerable demonstration value as the practice of the use of mixed feed is expected to be followed in many other areas. The project has been completed and is being merged with the large new project (348) referred to above.

INDIA (129) - Improvement of feed for dairy cows, Andhra Pradesh
(assistance in development of animal feed industry)

The State Government of Andhra Pradesh is implementing plans to increase milk production by making a balanced feed ration available to farmers. For this purpose, two key village blocks in the Krishna District were selected as a pilot area, and a feed-mixing plant and other necessary equipment have been installed at Buddavarem on a plot of land donated by the villagers. WFP has provided 2,650 tons of maize and sorghum which are compounded with such local feedstuffs as oilcakes, bran and pulses, and sold through local co-operatives to the stock owners to feed some 6,000 cows selected for their milk production, at the rate of 2 kg per head per day. The State Government is establishing milk collection and chilling centres in this area in order to develop a market for the utilization of the increased milk produced.

The project became operational in 1965 for a duration of 18 months. Shipments have been completed. Its total cost to WFP is \$222,900.

INDIA (049) - Supply of food for increased production of pork and pork products, West Bengal (assistance in development of animal feed industry)

The project aims at increasing the production of pork and pork products through the supply of balanced feed and the introduction of improved breeds and better methods of rearing. It is also designed to demonstrate to the stock owners the economic advantages of using balanced rations. The project covers areas of intensive pig breeding within a radius of 80 kilometres from the Regional Pig Breeding Station, Haringhatta, where there is a feed mixing plant.

WFP is supplying 3,830 tons of maize and sorghum, which are ground and mixed with locally available feed stuffs, such as oilcake, bran, fishmeal, and meat meal in order to constitute a balanced feed ration. The mixture is sold to pig breeders in the area to feed approximately 7,000 pigs at the rate of 1.6 kilograms per head per day. The sales proceeds are to be used for expansion of the project.

The project became operational in January 1965. Its total cost to WFP is \$424,300. 2,200 tons of grain had been shipped by September 1967.

INDIA (050) - Intensive egg and poultry production and marketing, Babugarh, Uttar Pradesh (assistance in development of poultry feed industry)

The project aims at accelerating the production of eggs and poultry meat in a selected area in Uttar Pradesh with a view to raising the nutritional standard of the local population in respect of animal protein, in which their diet is at present deficient.

An important means of improving poultry production is to provide the birds with feed of adequately nutritional quality. To this end, the government poultry farm at Babugarh (Uttar Pradesh) is producing balanced poultry feed, using 2,000 tons of maize supplied by WFP as an ingredient. The feed is sold to poultry farmers in the area. The sale proceeds are intended to be used to expand the area and improve the work of the project.

It is expected that the demonstrated advantages of using balanced feed will eventually stimulate the domestic demand for such feed and consequently for maize, so that the production of maize, currently little used in the preparation of poultry feed, is likely to increase.

Its total cost to WFP amounts to \$302,400. Distribution commenced in October 1964; by September 1967 1,600 metric tons of maize had been delivered.

NEPAL (059) - Milk collecting and chilling centres
(assistance in dairy industry development)

Milk supply in the Kathmandu Valley is seriously handicapped by lack of proper chilling centres in milk collecting areas. At present supplies are obtained from a large number of small and scattered villages, most of which are away from motorable roads. To equip small collection units with refrigeration facilities has been considered too expensive. In addition, there are considerable seasonal fluctuations in the milk supply, which is at its lowest during the dry months of the year. In order to improve the situation, a pilot project for the introduction of toned milk in the market has been carried out with WFP assistance through the supply of 108 tons of skim-milk powder. Toned milk is prepared by mixing the skim-milk powder with the local supplies of buffalo milk, whereby a standard butterfat content of 3.5% for toned milk is obtained. For this purpose, a new centre for chilling and storage of 3,000 litres of milk at a time has been built at Bhadgaon. Additional milk collecting centres have also been built. The experiment, if successful, will be extended to other milk collection areas and it is expected that milk consumption by the urban population will increase.

The project was approved in August 1963. The total cost to WFP has amounted to \$58,600. The Government is continuing the project with its own resources after the completion of WFP aid.

PHILIPPINES (207) - Livestock and poultry feeding
(assistance in development of animal feed industry)

The purpose of the project is to provide food grains for the livestock and poultry being maintained by the Bureau of Animal Industry at its 9 stock farms and 54 breeding stations and centres. These are small stock farms for servicing local herds naturally and artificially, which also produce a limited quantity of breeding stock. The addition of WFP feed is improving the animals' feed rations and is particularly useful in ensuring that the reproduction of breeding herds and flocks is maintained at an optimum rate. The mortality rate has also been reduced.

The dairy and beef industry in the Philippines is not yet well established, although the efforts of the Bureau of Animal Industry in this direction are being intensified. The latter's program for importing superior cattle, whose offspring could be distributed to farmers had developed only gradually because of limited budgetary resources, although its efforts to improve the dairy cattle have been successful.

Good results have been achieved by the Bureau in its plans for encouraging the poultry industry, mainly because of the rapid rate of reproduction and the lower cost per unit. In addition, since the commencement of the project the Bureau has increased the area under improved pasture and corn with a view to reaching near self-sufficiency.

WFP is providing 4,000 metric tons of yellow maize to feed buffaloes, cattle, pigs and chickens, raised under the supervision of the Bureau. The feed grain provided by WFP are ground and mixed with local feed, such as fish meal, oilseed meal, rice bran and copra meal, and the balanced mixture is fed to the livestock and poultry.

The project became operational in December 1964. Its total cost to WFP is \$407,000. Shipments were completed as of 20 September 1967.

SENEGAL (170) - Assistance in the development of food industries

This pilot project is intended to promote the production of couscous on an industrial scale and to help the Government accelerate the process of developing large-scale food industries. WFP has supplied 4,030 tons of sorghum, 2 tons of sugar and 2 tons of dried skim milk to make possible the production of couscous by an experimental unit over a period of two years. The project is expected to lead to the establishment of permanent industrial production of couscous in Senegal.

The project became operational in 1965. The total cost to WFP will amount to \$335,500. Shipments have been completed and a terminal report is being prepared.

TUNISIA (211) - Promotion of poultry production and sheep husbandry
(assistance in development of animal feed industry)

The purpose of this project is to assist the Government of Tunisia towards the achievement of its ten-year plan (1962-1971), one aim of which is to increase animal production by 60%, and more specifically, to increase poultry production by 140% and sheep husbandry by 40%.

WFP is assisting the Government in achieving these aims by supplying in two instalments 21,500 tons of maize, which are being used as follows:

12,500 tons are provided for the production of high-quality poultry feed obtained by mixed maize with other compounds, the latter ingredients being purchased partly on credit advanced by the Government to the executing agency. The mixing is carried out in the only state owned feed mixing plant in the country, which entered into operation in 1964.

The executing agency distributes free of charge to poultry farmers pure bred stocks of White Leghorns and Rhode Island Reds, bred and reared at the Government poultry station at Sidi Thabet, and its four sub-centres, conveniently located throughout the country. The poultry feed is sold to the farmers at a subsidised price, the subsidy decreasing annually until the end of the third year, when it will cease. These prices, as established in the project request, are approximately 15% the first year, 11% the second year, and 7% the third year, below the market price. Mixed feed is also being prepared for sheep.

The Government is in charge of raising the standard of the breeding stocks, controlling poultry diseases, and familiarising farmers with better techniques of poultry feeding and management.

Deliveries to the project commenced in 1965 and may continue till 1970. Two-thirds of the maize was delivered as of September 1967. Total cost to WFP is \$1,631,400.

TURKEY (141) - Assistance for the expansion of a pulp and paper factory.

The purpose of the project is to assist in increasing the pulp and paper output of the Turkish State Paper Enterprise factory at Izmir through modernization and expansion by providing a supplementary ration for workers engaged on heavy manual labour under difficult working conditions. This factory employs about 3,250 unskilled workers of whom 1,400 are low-wage workers engaged on the heavy construction work connected with the modernization and expansion of the plant. Supplementary food is being provided for these workers and their families. These 1,400 workers could not previously afford an adequate diet and were not provided with a balanced meal at the works canteen. The funds, previously spent by the management, to cover basic dietary essentials for the daily meal such as bread and meat, are being used to improve the social amenities at the factory. The improved diet which the workers receive is helping to increase their productivity.

The project was approved in July 1964; its total cost to WFP will amount to \$404,800. Distribution of food started in October 1965. Shipments were completed as of September 1967. 2/

TURKEY (140) - Assistance for the expansion of the nitrogen industry.

The purpose of the project is to expand the nitrogen fertilizer plant at Kutahya. It is planned to increase production from 22,000 tons of nitrogen per year (corresponding to 440,000 tons per year of 20% N fertilizer). WFP is supplying food to provide a basic diet for the 1,200 unskilled workers who are engaged in the expansion program, and for their families. These workers are employed on land levelling, pipe laying and installation of machines and equipment. Food aid is given as a supplement to the cash wage and is intended to improve labour productivity by ensuring that the workers receive an adequate diet.

The project became operational in 1965. Its total cost to WFP amounts to \$575,200. About 70% of the shipment of commodities had been completed by September 1967. 2/

MALTA (215) - Food assistance in the development and modernization of pig production

The project aims at assisting the Government in the development and modernization of pig production by providing feed assistance. The local pig processing industry could considerably increase its present production of bacon and related products if an increase in the local supply of bacon pigs was achieved.

WFP is supplying 5,150 tons of yellow sorghum to be sold to pig producers at prices established by the Government. The sales proceeds are for financing the purchase of locally produced materials and payments of labour wages, also subsidies to farmers.

The project was approved and became operational in July 1966. Total cost to WFP is \$453,500. Four-fifths of the sorghum committed have been delivered as of 20 September 1967.

2/ ILO/UN/WFP team conducted an interim appraisal at the end of October 1967.

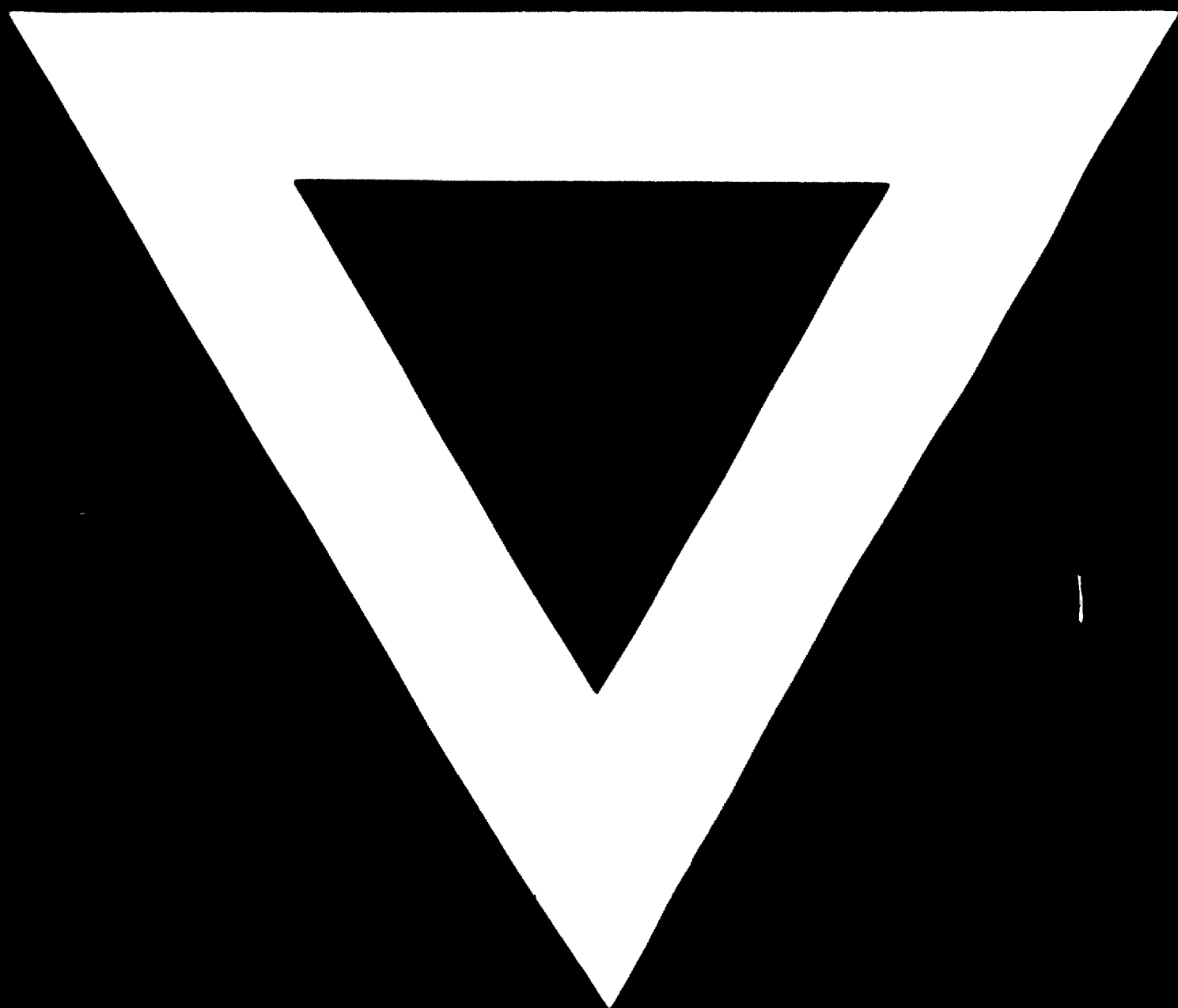
MAURITIUS (310) - Expansion of milk production through livestock improvement

The project aims at increasing the milk yield of the dairy stock through improved cow feeding and it is planned to provide the cowkeepers with a balanced feed ration through the existing 25 milk collecting centres. WFP grain, which will represent 50% of the compound feed, will be mixed with local ingredients consisting of molasses, bagasse, groundnut and soya cake, fishmeal and bone meal. WFP assistance will last 3 years during which time it will provide 3,000 metric tons of maize and 2,000 metric tons of sorghum.

The project became operational in July 1967. Total cost to WFP is \$644,000.



TIP. VARYSTAMPA
ROMA
Tel. 698674



28. 9. 71