



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



17960

United Nations Industrial Development Organization

Forum on Appropriate Industrial
Technology for Africa

Dakar, Senegal, 6-10 November 1989

DRAFT REPORT

21/5

WORKING GROUP III: FOOD PROCESSING AND PRESERVATION

Conclusions

The working group on food processing and preservation agreed that the upgrading of traditional technologies is basic and fundamental to the development of appropriate industrial technologies, but the extent of upgrading should be examined within the resources available in each country and such technologies tailored towards food consumption patterns and needs of the people.

The group agreed that appropriate industrial technology must be viewed as the technology mix which recognizes developmental objectives of each country and is appropriate to the extent that the socio-cultural and economic aspects of the country are fully integrated. Thus, appropriate food processing and preservation technology must aim at:

- providing the masses with nutritious food products which are of good value and consistent quality at costs which are affordable;
- accelerate rural industrialization;
- generate productive employment;
- increase exports and foreign exchange earnings;
- strengthen national technological capacities;
- generate backward and forward linkages with other sectors of the economy;
- contribute to the improvement of the environment.

It was appreciated that rural women are the key actors in traditional food processing and any programme of technology development and adaptation must give due consideration to women's role.

The constraints inhibiting the development of appropriate industrial technology in the food processing subsector were noted. These include inadequate, unreliable raw materials supply, lack of storage facilities, lack of adequate information on technology and processing marketing and distribution, skilled technical personnel and management, research and development financing and investment.

However, many of these problems could be overcome were African countries to translate into concrete action, the letter and spirit of the various recommendations already adopted, especially the Lagos Plan of Action. The need for co-operation between developing countries at national, regional and international levels, training information dissemination in the areas of production, processing, packaging and quality assurance were highlighted.

A further problem was that the critical economic situation in African countries today no longer supports importations of machinery and equipment. Therefore the challenge before the R & D institutes and Engineering Centres is the development of suitable and manageable equipments for food processing.

The group agreed that by-products of agricultural raw materials preparation and food processing should be recognized as raw materials for further processing. Their utilization would not only eliminate problems of environmental pollution but would lead to more value addition. Sugar mill by-products could be used in animal feed, paper, textile fibres, cellulose derivations, fibre boards and other products.

It was realized that packaging is a central issue in the choice of appropriate technology for food processing and preservation, accounting for 50 - 60% of product ex-factory costs.

The working group felt that there was a need for research and development into alternative packaging materials if the food processing and preservation subsector is to be transformed.

RECOMMENDATIONS

1. AT THE NATIONAL LEVEL

- 1) Formulate and effect explicit technology policies that emphasize private sector, small scale industry initiatives and define fiscal and monetary incentives and scientific and technical support in a commercially oriented environment.
- 2) Conduct surveys, collect and evaluate data on available industrial food technologies (small, medium or large scale) and inventory of locally fabricated food processing machinery; evaluate data needed for planning decisions on technological options and to development of technological capacities. Establish a comprehensive data bank. Set up farmers' and small scale processors co-operatives.
- 3) National post harvest technology centres should be established or existing ones mobilized so as to develop appropriate technology and machinery for reducing post harvest losses; upgrade traditional technologies for products closely reflecting consumer demand and generate consumer awareness through education.
- 4) In order to make a significant breakthrough in the development of effective technological capability for food industries and agriculture, African Governments should make every effort to devote at least 1% of their gross national product to the development and promotion of science and technology in food and agriculture. The development of the engineering and machine tool industry and a maintenance culture should be a matter of top priority.
- 5) Establish a national focal point which will, among others
 - identify investment opportunities based on available local and national resources.
 - perform pre-investment and feasibility studies for industrial projects.

- participate in negotiations and conclusion of agreement in technical co-operation or transfer of technology matters, turnkey contracts, licensing and registration of industrial establishments, in line with governments priorities.
 - collection of data concerning industrial production and provision of assistance in the dissemination of information on technical and technological matters.
- 6) The training of personnel for food processing and preservation activities should be restructured to make them practically oriented.
 - 7) Given the heavy dependence on imported packaging materials, each developing country must have an interest in finding technologies that utilize more fully her own natural resources of metals, natural fibres, timber, etc. to develop appropriate packing systems.
 - 8) In order to increase indigenous research activity in food processing and preservation, private sector industries should co-operate with Government in funding missions oriented research programmes, and private entrepreneurs should be encouraged to use locally developed technologies and pilot prototype equipments in their industries.

2. AT THE REGIONAL LEVEL

- 1) Institutions set up to promote technological development of the region needs to be funded adequately to perform the key role for which they were set up.
- 2) Promote co-operation among their research centres and similar R & D institutions. This would cover exchange of scientific experience, research fundings, inventions, innovations and the scientists themselves. Joint scientific research work should lead to the promotion of sub-regional specialization and co-operation in manufacturing agricultural food processing and preservation machinery.

- 3) The countries should participate in fairs and exhibitions organized within the region to promote the marketing of technological inventions/innovations.
- 4) Promote joint ventures to optimize transfer of technology and of national resources, especially human skills and natural resources.

3. AT THE INTERNATIONAL LEVEL

- 1) Having developed multisectorial information network for the dissemination of information on appropriate industrial technologies, this should be linked with UNIDO, FAO, the Intermediate Technology Development Group (ITDG), Appropriate Technology International (ATI) and other relevant information data banks.
- 2) Arrangements for technology acquisition should be such that
 - local engineers can design it,
 - engineering shops in the country can build part of it and can be serviced, leading to capacities to mend and produce spare parts,
 - part of the technological package should be that local engineers can make it eventually so as to upgrade local competence in the transfer of technology,
 - it should respond to priority basic needs and a general development option,
 - it is productive.

4. WITH INTERNATIONAL ORGANIZATIONS

Efforts and activities at all levels in the transfer of technological know-how and the development of appropriate indigenous technology for food processing and preservation should receive strong support and assistance from international organizations such as UNDP, UNIDO and FAO.

- 1) UNIDO should issue a compendium of new technologies developed in, used by or developed for developing countries in the field of food processing as a means of exploiting their local materials; the compendium would describe the technology and indicate the scale or range in which it can be used, the raw materials and equipment, any materials that technology can replace, and the technology source.

- 2) UNIDO should continue to organize international fora, consultations, solidarity ministerial meetings, round table ministerial and high-level meetings for co-operation, and to implement advisory services, study tours, training and other joint industrial programmes.

- 3) A focal point on technology development should be set up at UNIDO with particular emphasis on the industrial development of Africa.