OCCASION

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

DISCLAIMER

FAIR USE POLICY

CONTACT

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

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

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

15657

Distr.
LIMITED

ID/WG.452/2
24 October 1985

ENGLISH

United Nations Industrial Development Organization

Expert Group Meeting on Women in Agro-Industries
Vienna, Austria, 14 - 18 October 1985

WOMEN'S PARTICIPATION IN MANUFACTURING IN DEVELOPING COUNTRIES, WITH EMPHASIS ON AGRO-INDUSTRIES*

Prepared by

Mechtild Petritsch**

* The views expressed in this paper are those of the author and do not necessarily reflect the views of the secretariat of UNIDO. This document has been reproduced without formal editing.

** Socio-economist, University of Vienna, Austria

V.85-32494

CONTENTS

List of Tables

INTRODUCTION

Objectives

The objectives of this report are: first, to examine the current and potential role of women in manufacturing, with special emphasis on the manufacturing of agro-based products, and second, to identify the possibilities for a more effective integration and increased participation of women at all levels in the agro-industries, bearing in mind their participation in myriad activities linked with these industries.

The points covered in this respect are: the effects of current trends in the world economy on the manufacturing sector in developing countries and the impact on the participation of women; the situation of women in the informal and formal sectors of the economy, particularly in relation to the processing of agro-based products; and women's participation in manufacturing in the agro-industrial subsector, illustrated by the example of women in food-processing as shown in case studies.

This report concentrates on questions relating specifically to the participation of women in agro-industries while a second report deals with the current situation and future prospects of the agro-industrial subsector. An essential point emerging from the examination of these questions is the importance of conceiving development strategies that are aimed at integrating women in the industrialization process not in terms of designing isolated projects or individiual programmes to benefit or create employment for specific groups of women, but as part of a total development strategy that is directed towards creating a coherent national productive system that permits a more self-reliant and integrated development. Such strategies should, as far as possible, take into account all aspects of the wide range of economic roles currently played by women and their potential contribution to the economic development of society. The present study represents an initial attempt to examine the present situation and problems to be considered in relation to women and agro-industries and should serve to indicate some of the areas for national action, international co-operation and further research.

Background

In the Lima Declaration and Plan of Action on Industrial Development and Co-operation [1/] countries expressed their determination to work towards the goal of increasing the share of the developing countries in industrial production to 25 per cent by the year 2000. The achievement of this goal must involve the restructuring of world industry and the creation of additional industrial capacities in developing countries. Policies and programmes designed to promote these objectives must include as part of industrialization programmes and projects measures to promote the development of social and economic infrastructures. The Lima Declaration underlined the need for "the full integration of women in social and economic activities and in particular in the industrialization process on the basis of equal rights." [2/] The aim of increasing women's integration and participation in industry should be seen both in terms of accelerating their countries' economic development and as a means to improve their role and status in society.

The International Development Strategy (IDS) of the Third United Nations Development Decade emphasized the importance of ensuring effective participation by women, as equal partners with men, in all aspects of development if the goals and objectives of the Strategy are to be achieved.[3/] The demands of the developing countries for the restructuring of economies and societies expressed in the IDS, which had already been made in the Declaration on the Establishment of the New Economic Order and Programme of Action [4/] and in the Lima Declaration quoted above, were echoed

1/ Lima Declaration and Plan of Action on Industrial Development and Co-operation, 1975, PI/34.

2/ Ibid., para. 30.

3/ A/35/464, Annex, 23 October 1980.

4/ General Assembly resolutions 3201 (S-VI) and 3202 (S-VI) of 1 May 1974.

in the demands of women in the Declaration of Mexico on the Equality of Women and their Contribution to Development and Peace. 5/ These declarations emphasized the urgent need to create new and more equitable kinds of relationships between the industrialized and developing countries in their international economic relations on the one hand and between men and women in their internal economic, social and power relations on the other. 6/ The major conclusions of these conferences outlined the means of achieving the goals of equal access to all resources by all countries and of strengthening the economies of the developing countries. It must be emphasized that in order for national economic development to simultaneously promote the creation of equitable conditions for women, it is essential for economic growth to take place within the framework of more equal distribution of economic resources and the returns to labour and resulting improvements in the means of satisfying material and non-material needs.

The economic and social development of individual developing countries cannot be separated from the international context. A large number of studies have demonstrated the ways in which, for most developing countries, their integration into the international economic system has brought about a series of internal processes that have had a negative impact on women, both in absolute terms and in relation to men. 7/ This leads to the conclusion that "international monetary, trade, aid and technology policies will not themselves automatically have an undifferentiated or even beneficial impact

5/ Report of the World Conference of the International Women's Year, Mexico City, 19 June - 2 July 1975, (E/CONF.66/34).

6/ Cf. International Labour Organisation (ILO) Office for Women, "Women, technology and the development process", in: R. Dauber and M.L. Cain, eds., Women and Technological Change in Developing Countries (Boulder, Colorado, Westview Press, Inc., Frederick A. Praeger, 1981), (AAS Selected Symposia Series, No. 53), pp. 33 - 47.

7/ See, for example, B. Lindsay, ed., Comparative Perspectives of Third World Women (New York, Praeger Publishers, 1980); I. Tinker and M. Bo Bramsen, eds., Women and World Development (Washington, D.C., Overseas Development Council, 1976); "Effective mobilization and integration of women in development: Report of the Secretary-General" (A/35/82), 27 March 1980.

on women, but will do so only with careful incorporation of specific elements designed to have such an effect." 8/

It must be emphasized that development is a political process and that the choice of goals and means of development are political decisions. The way in which goods and services produced by a society are distributed, the use of indicators to measure development, the determination of access to the tools of production and the choice of technologies to be used, are all matters of a political and not predominantly technical matter. 9/ Therefore, in designing industrialization policies for developing countries, it is essential that the changing factors relating to the participation of women in the entire development process be continually assessed, both in terms of their effect on women and their effect on the development of the country.

UNIDO's mandate to promote the integration of women in industrial development was emphasized at the Third General Conference of UNIDO, held in New Delhi in 1980. 10/ This mandate was reiterated at the Fourth General Conference, held in Vienna in 1984, where the Executive Director of UNIDO was urged to take measures to ensure that the integration of women is taken into consideration in the design and implementation of all technical co-operation and study activities, with special emphasis on industrial sector and subsector

8/ A/35/82, op.cit., p. 33. See also: Report of the Consultative Meeting on the Role of Women in International Economic Relations, Santo Domingo, 17-22 September 1984 (INSTRAW/BT/1985/CRP.2, 29 November 1984).

9/ Cf. Developing Strategies for the Future: Feminist Perspectives, Report on the International Feminist Workshop held at Stony Point, New York, 20-25 April 1980; and D. Seers, "The meaning of development", in: N.T. Uphoff and W.F. Ilchman (eds), The Political Economy of Development: Theoretical and Empirical Contributions (Berkeley, University of California Press, 1972) pp. 123-128.

10/ Resolution on Women and Industrialization, adopted 9 February 1980, ID/CONF.4/22, p.57.

planning, human resource development, small-scale enterprises, particularly those serving rural areas. 11/

At the Asian Regional Workshop on the Integration of Women in the Industrial Planning and Development Process, UNIDO was requested to convene an expert group meeting on women and industrialization in relation to their participation both in the industrial work force and at policy and decision making levels, with particular attention to the effects of changes in industrial technology and industrial restructuring/redeployment on women's employment opportunities. 12/ In response to this request, the Expert Group meeting on Women in Agro-Industries is being convened with the goal of examining the development, current trends and future prospects of agro-industries, women's current participation in manufacturing, particularly in the agro-industrial subsector and the possibilities for enhancing women's participation in agro-industries in developing countries. By analysing what the effects of this greater participation would be, both in terms of economic and social benefits for the country and with regard to the impact on women, their families and communities, the meeting should be able to make recommendations on the points to be considered in developing strategies to improve the participation of women in agro-industries and to promote the development of these industries through the contribution of women.

The question of women and the growth of agro-industries

The agro-industries considered in this report include food products (ISIC 311/12) 13/, beverages (313), textiles (321), wearing apparel (322), leather and fur products (323), footwear (324), wood and cork products (331), and furniture and fixtures excluding metal (332).

11/ "Integration of women in Industrial Development" adopted 19 August 1984, Resolution 9 in: Report of the Fourth General Conference of the United Nations Industrial Development Organization (ID/CONF.5/46), pp.32-35.

12/ Asian Regional Workshop on the Integration of Women in the Industrial Planning and Development Process. Bangkok, Thailand, 5-12 July 1984, Report (ID/WG.424/4), 8 August 1984.

13/ The three-digit codes refer to the division of industrial branches according to the International Standard Industrial Classification of all Economic Activities, Statistical Papers Series M, No.4, Rev.2 (United Nations Publication, Sales No.E.68.XVII.8).

The significance of agro-industries in the economies of developing countries can be seen in the fact that, taken together, they accounted for 36.4 per cent of the total manufacturing value added (MVA) in developing countries in 1981. This represents a slight reduction in their share of MVA over 1973, when they accounted for 37.8 per cent, and a great reduction in their share of MVA since 1963, when they accounted for 49.3 per cent. 14/ This reduction in share is due to the fact that, although production in agro-industries has been growing in absolute terms, other industrial branches have been growing faster. 15/

The development of the agro-industrial subsector continues to be of major importance in most developing countries. In Africa, for example, in connection with the Industrial Decade for Africa (IDDA), particular emphasis is placed by ECA and UNIDO on projects aimed at increasing production and processing of food and agricultural products. Furthermore, development activities in other branches of the agro-industrial subsector are directed towards achieving the highest possible utilization of locally available resources; these activities include the leather, textile and forest-based industries. 16/

The importance of agro-industries for women derives from women's historical role in most societies of responsibility in providing for the fulfillment of fundamental consumption needs, which are mainly supplied by agricultural and agro-based products, such as food, clothing etc., as well as the strong linkages between agro-industries and the agricultural sector, where a large proportion of the female population in many developing countries is concentrated. The role played by women extends beyond production, preliminary, primary and secondary processing, to the storing, packaging and marketing of agro-based products in many countries.

14/ A Statistical Review of the World Industrial Situation 1984 (UNIDO/IS.506), 3 January 1985, Table 7, p.12.

15/ Ibid., Table 6, p. 11.

16/ See: Industrial Development Decade for Africa, Third Progress Report (ID/B/331), 23 February 1984, p. 7.

A major difficulty encountered in efforts to analyse the situation of women in agro-industries in developing countries derives from the fact that the data available on employment and related statistics for many of these countries are poor. Thus, an assessment of trends in the composition of the labour force, sectoral employment demand, unemployment and underemployment is difficult for the total labour force, and even more difficult for the female labour force owing to the lack of sex-segregated data for most years in most countries. The unavailability of specific types of data is a reflection of prevailing development models (growth maximization and anti-natalist) in the 1950s and 1960s which tended to neglect questions of distribution, poverty, unemployment and underemployment. 17/ Although the emergence in the 1970s of new development strategies and models incorporating basic-needs development ideas changed the focus of data collection slightly, the continuing lack of attention to and misconceptions about women's role in development are manifested in the scarcity of data covering women's employment and related variables.

Technical co-operation activities and the participation of women in agro-industries

Considering the importance of the development of the agro-industrial subsector in the industrialization process and the current and potential role of women in the production, processing, sale and consumption of agro-based products, it is essential for governments, women's organizations, trade unions, employees' associations, governmental bodies and non-governmental organizations concerned with the promotion of entrepreneurship, co-operatives and other forms of productive activity to direct their efforts toward the elaboration of policies to promote a more favourable participation of women in the various branches of agro industries.

17/ M. Hopkins, "Employment trends in developing countries, 1960-80 and beyond", International Labour Review, vol. 122, No.4 (July-August 1983) pp. 461-479.

It is furthermore essential to improve the technical co-operation activities of UNIDO, UNDP and other UN bodies in the agro-industrial subsector in terms of their impact on women. In order to achieve this, it is necessary for international organizations to engage in a continuous dialogue with Governments and national organizations in order to exchange information on modalities of co-operation directed toward enhancing the participation of women in agro-industries.

A variety of possibilities exist for ensuring that technical co-operation activities take full account of women's abilities to play a valuable economic role in industrial development. Four possible approaches to the design of programmes and projects are the following:

(a) In designing projects, even those that do not include any specific component for women, to bear in mind women's multiple roles as producers and consumers throughout the planning, implementation and evaluation phases;

(b) To design projects, paying deliberate attention to the inclusion of both women and men on equal basis;

(c) To include specific women's components as a general rule in programmes and projects;

(d) To design projects where women are the target group.

In this context it is important to consider ways and means of increasing the positive impact that UNIDO's technical co-operation activities can have on expanding women's role in agro-industries. In order for these technical co-operation activities to have lasting positive effects on the situation of women and on the industrial branches concerned, the programmes and projects designed to include women must be linked to the major development strategies

and priority sectors of conern to developing countries. It must be emphasized here that "because of women's long historical disadvantaged position in society, there is need for specific transitional strategies, policies, measures and actions if they are to participate actively in the industrialization process." 18/

18/ Vivian Mota, Coordinator, ECLA Women in Development, quoted in: Women and Development: Guidelines for Programme and Project Planning, (Santiago de Chile, ECLA, 1982).

I. THE IMPACT OF NATIONAL AND INTERNATIONAL ECONOMIC TRENDS ON THE ROLE OF WOMEN IN INDUSTRY, WITH PARTICULAR ATTENTION TO AGRO-INDUSTRIES

General trends

In order to achieve the aim of this study, which is to examine how women can be more meaningfully integrated into agro-industries, that is how their participation can be increased in ways that benefit them, their families and their societies, the role of women in agro-industries must be studied in the wider context of the national and international economy. It is therefore necessary to look at trends in variables such as employment, exports, growth and composition of Gross Domestic Product (GDP), etc.

Over the past two decades, the share of the industrial sector in the GDP of developing countries has grown rapidly for both low- and middle-income countries. Between 1960 and 1981 the industrial sector grew from 25 to 34 per cent of GDP in low-income developing countries and from 30 to 38 per cent of GDP in middle-income developing countries. 19/

An examination of the contribution of manufacturing to economic growth in developing countries shows that manufactured output grew between two and two and a half times as fast as agricultural output in low- and middle-income developing countries between 1960 and 1970. Between 1970 and 1981, the rate of growth of manufacturing production in middle-income countries was still twice as great as that of agriculture, while for low-income countries it sank to only about 25 per cent greater than the average annual rate of agricultural production. 20/

19/ World Bank, World Developent Report 1983, (New York, Oxford Univeristy Press, 1983), Table 3, pp. 152-153.

20/ Ibid. Table 2, pp. 150-151.

Comparing the growth rates of industrial production in manufacturing for developed and developing countries, it can be seen that while between 1963 and 1973 output grew by 5.5 per cent in developed market economy countries and by 8.0 per cent in developing countries, between 1973 and 1983 the growth rate was only 1.4 per cent for developed market economies and 4.9 per cent for developing countries. 21/

In considering the implications of these rates of growth for developing countries, it is important to remember that the impression given by overall growth rates can be deceptive, as much of this growth has been concentrated in a relatively small number of developing countries. Thus, the average annual growth rate of manufacturing value added between 1973 and 1982 was only 2.4 per cent for the least developed countries and 0.6 per cent for the least developed countries for Africa. 22/

The role of exports in the growth of manufacturing

The volume of exports of manufactured products of developing countries has grown very rapidly in the last two decades. In the 1970s, world trade in manufactures increased at an annual rate of 8.5 per cent (in constant 1978 prices). For the developing countries, however, the rate of growth was 12 per cent per year. As a result of this rapid growth rate, the share of developing countries in world exports of manufactured products has increased from 6 per cent in 1960 to 10 per cent in 1979 and will possibly rise to 14 per cent by 1990. 23/

The expectations of developing countries are that by increasing their exports of manufactures they will be able to generate economic growth, create employment, stabilize and diversify foreign exhange earnings, build up their technological base and improve the skill level of their labour force. The amount of employment generated by manufacturing in developing countries has

21/ UNIDO, A Statistical review of the World Industrial situation 1983 (UNIDO/IS.433), p.8.

22/ Ibid., p. 19.

23/ H. Hughes and I. Waelbrock, "Can developing country exports keep growing in the 1980s", The World Economy, Vol.4, No. 2 (June 1981).

increased in both absolute and relative terms. In the 1960s it grew by 3.8 per cent per year and from 1970 to 1976 it grew by 6.2 per cent per year. This compares to a growth rate of 1.8 and 2.2 per cent for overall employment in the 1960s and 1970s respectively. 24/

Many of the industries which produce manufactured products for export, such as textiles, garments, footwear, electronics and food-processing have a high proportion of female workers, both in nationally-owned industries and in foreign-owned enterprises, particularly in export processing zones (EPZs). With the exception of the electronics industry, most of these are agro-based industries. 25/ The importance of the female labour force for the development of the export capabilities of these countries and the importance of manufactured exports for female employment is illustrated by Table 1, which shows the high percentage of female workers employed in export-processing zones (EPZs) in several Asian developing countries.

Table 1. Share of Female Employment in Export Processing Zones (EPZs)

Country	Women as per cent of total EPZ Workforce
Sri Lanka	88
Malaysia	85
Republic of Korea	75
Philippines	74

Source: "Asian Women and New Jobs" - in ILO, Women at Work, No. 1, 1984.

24/ G. Renshaw, "An overview", in G. Renshaw (ed.), Employment, Trade and North-South Co-operation (Geneva, ILO, 1981).

25/ For an extensive analysis of this phenomenon see Linda Lim, Women in the Redeployment of Manufacturing Industry to developing Countries (UNIDO/ICIS.165) July 1980; and Otto Kreye, "World Market-Oriented Industrialization of Developing Countries: Free Production Zones and World Market Factories", Part III of F. Fröbel, J. Heinrichs, O. Kreye, The New International Division of Labour: Structural Unemployment in Industrialized Countries and Industrialization in Developing Countries (Hamburg, Rowohlt, 1977), (in German).

In analysing these growth trends, it is essential to keep in mind that a relatively small group of the newly industrialized countries (NICs) have been responsible for much of the expansion and diversification of manufactured exports. Eight NICs account for 80 per cent of the total and three of these countries - Hong Kong, the Republic of Korea, and the Taiwan Province of China - are responsible for half of the developing countries' manufactured exports.

Although the NICs are responsible for the largest part of exports in absolute terms, at least 16 other developing countries were able to achieve growth rates equal to or better than those of the NICs during the 1970s. While many of these countries started from a very small base and still do not export very large amounts of manufactured products in absolute terms, others, such as Malaysia, Thailand and the Philippines, have joined the ranks of significant exporters of manufactured goods. A second group of countries, including Tunisia and Colombia, are following close behind and several of the others have begun to export considerable quantities of a few products.26/

As they have increased their exports, developing countries have also been diversifying the types of products manufactured. Nevertheless, production of consumer goods, many of which fall in the category of agro-based manfactures, still accounts for the largest share of manufacturing in developing countries, even the most industrially advanced. The manufactured products exported by developing countries continue to be heavily concentrated in the traditional areas of labour-intensive products, even as they have expanded their range to include electronics and new types of consumer goods. The question arises as to what it will mean for employment, particularly for women, as they move into the manufacture of more capital-intensive goods, such as synthetic fibres, machines, tools and appliances.

One result of export-oriented industrialization policies is the growth of export processing zones (EPZs). Established with the objective of creating jobs and generating foreign exchange, these zones attract foreign and domestic investors with a variety of incentives, particularly duty-free importing, and

26/ World Bank, World Development Report 1979 (New York, Oxford University Press, 1979).

all output is exported. However, while these zones have generated considerable employment possibilities, particularly for women, questions have been raised about the quality and durability of jobs in the zones and the conditions of work. The overall economic and social benefits of the EPZs have also been questioned because their linkages with the local economy are often very limited and therefore they accomplish little in the way of increasing a country's development of skills and technological advances. 27/ Questions concerning the employment of women in EPZs are dealt with in Chapter II.

It should be pointed out that even though EPZs have been the subject of considerable discussion, their quantitative role in most developing countries' industrial development has been relatively minor. In a few of the smaller developing countries, EPZs account for a large share of manufacturing employment (for example, between 33 and 55 per cent in Haiti, Mauritius and Singapore). For other countries, however, the percentage is much lower: between 10 and 20 per cent in the Dominican Republic and Malaysia, less than 18 per cent in the Republic of Korea, Sri Lanka and Tunisia, and insignificant proportions in Brazil, Egypt, India and the Philippines. 28/

Although the major portion of manufacturing production and employment in the developing world, even in the NICs, is still accounted for by production for the domestic market, where the participation of women is high in the informal, but much lower in the formal sector, in most developing countries, depending upon the individual country and development model, production for export is seen as the more important area for expanding and developing their manufacturing industries.

While direct foreign investment by transnational corporations (TNCs) has played a significant role in increasing the total volume of exports of manufactured products by developing countries, the role of TNCs should not be

27/ See. L. Lim, 1980, op. cit.; and L. Lim, "Women's work in Multinational Electronics Factories" in: R. Dauber and M.L. Cain, eds., 1981, op.cit.

28/ International Labour Office (ILO), Rural Development and Women in Asia, (Geneva, 1981), p.90; International Confederation of Free Trade Unions (ICFTU), Trade Unions and the Transnationals: Export Processing Zones, Special Issue No.3, March 1983, p.15.

overestimated. By far the majority of manufacturing production and exports in the developing countries has been the result of indigenous investment and expertise. 29/ In the traditional export industries of the developing countries, such as textiles, clothing and footwear, TNCs have been responsible for less than 10 per cent of total developing country exports.

Investment by TNCs has played a dynamic, but to some extent unpredictable, role in developing countries. With the increasing automation of traditionally labour-intensive industries in industrialized countries, the low-cost labour of developing countries may no longer provide sufficient incentive for location of export-oriented foreign-owned manufacturing industries in these countries. This would mean that any foreign-owned manufacturing enterprises located in developing countries would concentrate on production for markets in developing countries, which could result in local producers being faced by stronger competition for domestic markets, with possibly very negative effects for women producers.

A major question facing developing countries today is what strategies would enable them to expand and diversify their industrial production and exports in the recessionary economic climate of the 1980s. Those developing countries that are most integrated in the world market have been especially hard hit by the prolonged global recession and the consequent slump in world trade. The aggregate growth rate of developing countries has been reduced by over 50 per cent, and many of them have experienced negative growth. 30/

A contributing factor to slower growth has been the increases in the protectionist policies of the developed countries, which have seriously aggravated the economic situation of many developing countries, particularly in the labour-intensive industries that employ large numbers of women. Although trade among developing countries has been growing rapidly in recent years, almost 70 per cent of the developing countries' trade is still with the developed countries. The high degree of dependence on the markets of developed countries continue to be of critical importance for the developing countries following export-oriented industrialization strategies.

29/ See: L. Turner, The Newly Industrializing Countries (London, The Royal Institute of International Affairs, 1981).

30/ World Bank, 1983, op. cit., p.7.

Developing countries have therefore been seriously affected by the Multi-Fibre Arrangement (MFA), the international agreement regulating world trade in textiles. The MFA, by almost freezing quota allocations, has effectively hindered countries such as Sri Lanka, Bangladesh, Mauritius and Indonesia in further developing export-oriented manufacturing of clothing and textiles.31/

The MFA is just one example of the new forms of protectionism with which the industrialized countries have responded to the world economic recession and their own problems of rising unemployment and idle industrial capacities. These new ways of curbing imports have been extended to cover a wide range of products. The uncertainty created in the world trading system by these forms of protectionism has had very negative effects on the developing countries because governments and firms in these countries are particularly ill-equipped to deal with the new non-tariff barriers.

Although until now the majority of developing countries have been able to increase the volume of their manufactured exports, it is clear that the rates of growth would have been much higher if their access to the industrialized countries' markets had not continued to deteriorate. The new forms of protectionism have considerably diminished both the growth prospects of the developing countries and the creation of new employment that usually accompanies such growth. Furthermore, barriers to trade among developing countries continue to be a limiting factor on growth. Lower employment growth rates in these sectors have meant a reduction in the opportunities for increased employment participation by women.

These problems make clear the weakness of development models primarily based on growth of export-oriented industries which increase the vulnerability of developing countries to external economic influences and fluctuations in the economies of the industrialized countries. Possible solutions can be sought in more self-reliant development strategies that concentrate on the creation of coherent national productive systems, efforts toward increasing sub-regional and regional integration thus reducing trade barriers and expanding trade among developing countries.

31/ Commonwealth Secretariat, Protectionism: Threat to International Order (London, Marlbourough House, 1982) p. 74.

The potential for increased South-South co-operation can include almost all branches of industry. It has been estimated that the share of total Southern imports of manufactured goods supplied from within the South could increase from approximately 18 per cent in 1979 to between 20 and 26 per cent by 1990. 32/ Among the branches with the largest potential for expansion of South-South trade and increasing Southern self-sufficiency are the agro-industries, specifically textiles, wearing apparel, leather and fur products and wood and cork products, where the share of the South in 1990 could range from 50 per cent upwards. 33/

Industrialization strategies and their impact on women

Further analysis of the effects of national and international economic trends on the participation of women in industry in developing countries, particularly in agro-industries, would be facilitated by a categorization of developing countries according to the development model adopted and industrialization strategies followed and an attempt to relate these to the participation of women in industry. A first approximation of such a typology could use the four major types below. 34/ This grouping is not exact, as the categorization does not remain stable, and the categories are not entirely mutually exclusive. There are also strong tendencies for countries to move from one type to another. For example, many of the countries of Type I, with mainly domestically-oriented production, are rapidly accepting export-oriented policies.

Type I: Countries with a relatively complex industrial base built upon long experience of both crafts and modern industries. Although these countries are not closed economies, they are mainly oriented towards production for the domestic market. They have generally followed

32/ UNIDO, Industry and Development. Global Report 1985 (New York, United Nations 1985) p. 49.

33/ Ibid., p. 50.

34/ Typlogy based on N. Banerjee, Women and Industrialization in Developing Countries (mimeo), (Calcutta, Centre for Studies in Social Science, 1985) p.5.

import-substitution policies and provided considerable protection for domestic industries. Some examples of Type I include India, Sri Lanka, Egypt and Morocco.

Type II: These are also countries with a complex multi-product industry similar to Type I, which differ in that they follow more export-oriented policies and have considerable amounts industry owned by TNCs. Examples of this type include Colombia, Mexico, Philippines and Thailand.

Type III: These countries have a much smaller industrial base, usually consisting of 1 or 2 industries, built upon specific mineral or agricultural resources, which are primarily oriented towards production for the world market. Several Central American as well as most non-Mediterranean African countries belong to this type.

Type IV: These are countries with a rapidly expanding industrial sector, primarily oriented towards production for export, initially competing on the basis of cheap and competent labour and then moving into very advanced technologies. Examples of this type include Singapore, Hong Kong, and the Republic of Korea.

It is difficult to make valid generalizations about the impact of any particular industrialization strategy on women. Many other factors, both economic and socio-cultural, also play important roles in determining the extent and conditions of women's participation in industry and the agro-industrial subsector. It was not possible within the framework of the present study to examine systematically women's role in manufacturing in the four types of countries outlined above.

The purpose of attempting to establish this typology of countries is to draw attention to the likelihood that there are significant connections between factors such as the development model adopted by a country, the industrialization strategy followed, policies with respect to domestic and foreign investment, the state and private sectors, geographic concentration or dispersal of industry within the country and the organization of production units in large-, medium- and small-scale industries, co-operatives etc., and the impact of industrialization on women in terms of employment, income

distribution, fulfillment of consumption needs, participation in decision-making processes etc.

These connections should be borne in mind in discussions about planning the development of agro-industries. Specifically, measures designed to improve the participation of women in agro-industries must be planned in light of the larger context of industrialization strategies, particularly considering the probability that individual measures will have different effects depending upon the chosen industrialization strategy which determines the background conditions under which such measures will be undertaken.

This tentative categorization of countries according to their industrialization strategy should stimulate further research into this question and encourage the collection of information on national experience in various countries in order to examine the different roles played by women and to facilitate the development of modalities by which women's participation in agro-industries can best be promoted.

II. THE PRESENT ROLE OF WOMEN IN MANUFACTURING, WITH PARTICULAR ATTENTION TO AGRO-INDUSTRIES

The unrecorded work of women

Conventional definitions of the labour force raise problems in the measurement of women's work. There is a growing awareness that the activities typically performed by women are systematically exluded from labour force and national income statistics. Social perceptions in many economies tend to disregard women's work and this bias tends to influence the ways in which statistical data on the activities of women is collected. 35/ Therefore, in order to examine some of the current patterns and trends of women's work in manufacturing in developing countries, particularly in agro-industries, it is necessary to go beyond the usual definitions of work and the usual methods of collecting statistics on the "economically active" population. 36/ An examination of women's employment in a broader picture makes it possible to trace a number of trends related to women's role in manufacturing.

A large part of the work done by women is performed within the family and household; therefore, it has usually been invisible. The definition of "economically active" persons as those producing significant amounts of economic (i.e. marketable) goods or visible income often excluded many women and men who work on their own account. The fact that women's contribution to the economy is frequently either not counted or considered as secondary to other economic activities means that in economic planning and industrial programming women are often automatically excluded at the outset from consideration in all plans and programmes.

35/ R. Anker, "Female labour force participation in developing countries: a critique of current definitions and data collection methods", in: International Labour Review, November-December 1983.

36/ For discussions of some of the issues and problems involved see: Improving Concepts and Methods for Statistics and Indicators of the Situation of Women (New York, United Nations, 1984, Sales No. E.84.XVII.3) pp.26-33, and Compiling Social Indicators on the Situation of Women (New York, United Nations, 1984, Sales No. E.84.XVII.2) pp.42-45.

The fact that women's work remains "invisible" because it is uncounted has often been noted and deplored; [37/] however, this fact must be recalled here, because it faces researchers, policy makers, project planners, etc. anew each time women's economic participation is examined. Although much of women's work is invisible in terms of official statistics or when looked at from the macro point of view, this work makes a significant contribution to the national economy, and particularly to the local economy, where the lack of women's contribution is felt severely whenever changing conditions deprive them of the possibility to continue working.

The participation of women in the labour force

Despite the fact that official statistics seriously undercount women's economic contribution, the available international statistics on women's work still demonstrate the very large and rapidly changing contribution of women. The total of officially economically active women in developing countries rose from 214 million to 395 million between 1950 and 1975. (See Table 2). According to ILO projections, the percentage of the female population 15 years of age and older that is economically active in 1985 ranges from 25.0 per cent in Latin America, 38.4 per cent in Africa to 42.6 per cent in Asia. The extent to which these figures underrepresent the true contribution of women is demonstrated by recent household surveys carried out in several Latin American cities which reported that there were between 14 and 30 per cent more women working than the rates reported in the national censuses. [38/]

Between 1950 and 1975, the number of women in the labour force in Latin America increased by nearly 100 per cent; in South Asia and Africa it grew by more than 50 per cent; and in China it increased by 134 per cent [39/]. It is estimated that by the year 2000, 70 per cent of the world's female labour

37/ See, for example, E. Boulding, Women: The Fifth World, op. cit., Chapter 5, pp. 34-42; and "The role of women in development", OECD Observer, No.109, (March 1981) p.15.

38/ Z. Recchini de Lattes and C.H. Weinermann, "Informacion de Censos y Encuestas de Hogares Para el Analisis de la Mano de Obra Feminina en America Latina y el Caribe: Evaluacion de Deficiencias y Recomendaciones Para Superarlas", E/Cepal 37.206, ESCOSOC, ECLA, 1979.

39/ International Labour Office (ILO), Womanpower: the World's Female Labour Force in 1975 and the Outlook for 2000.

Table 2. EVALUATION OF LABOUR FORCE PARTICIPATION OF WOMEN IN DEVELOPING COUNTRIES BY REGION, 1950, 1975, 1980 and 1985

Region	Total female population	Female labour force			
		Number (in thousands)	As percentage of female population 15 years of age and older	As percentage of total labour force	As percentage of world total
			Total		
Africa					
1950	111 254	31 165	28.0	44.3	32.9	9.1
1975	202 374	49 366	24.4	40.2	32.4	8.6
1980	232 472	54 883	23.6	39.3	32.2	8.8
1985	268 127	61 321	22.9	38.4	32.0	9.1
Asia					
1950	665 196	172 894	26.0	37.7	29.0	50.2
1975	1 106 094	322 466	29.2	44.8	34.3	56.0
1980	1 233 556	350 085	28.4	43.6	34.0	56.1
1985	1 369 350	382 144	27.9	42.6	33.8	56.5
Latin America					
1950	81 393	10 334	12.7	20.0	18.0	3.0
1975	161 872	22 753	14.0	23.2	22.3	4.0
1980	185	27 108	14.6	23.9	23.2	4.3
1985	212 558	32 639	15.4	25.0	24.2	4.8

Source: International Labour Organisation, Labour Force Estimates and Projections, 1950-2000, 2nd ed., vol. V, World Summary (Geneva, 1977). Also recent information compiled by the International Labour Organisation, Bureau of Statistics, 1984. Table from A/CONF.116/5/Add.2, op.cit., p.12.

force will be in developing countries, where currently their share of the female labour force is already 64 per cent. 40/ In terms of absolute numbers, the projected increase in the female labour force in developing countries between 1975 and the year 2000 will be 230 million, which means an increase of over 9 million per year 41/.

As can be seen in Tables 3 and 4, there is a trend in female employment in developing countries away from agriculture and towards manufacturing and services, which is consistent with the pattern already experienced by developed countries. Nevertheless, in 1980, 247 million, or 64 per cent of female workers in developing countries were still employed in the agricultural sector, 70 million, or 18 per cent in services and only 66 million, or 17 per cent in industry. The percentage of women in developing countries employed in industry and services is still much smaller than the percentage of men.

It should be noted here that a large proportion of all female workers in developing countries are unpaid family workers, many are own-account workers and only approximately one-fifth of them are wage earners or salaried employees.

Unemployment and underemployment of women in developing countries

A disturbing trend in developing countries is shown by the fact that the nunber of women seeking employment has been increasing much faster than the number of jobs, so that unemployment rates for women have increased considerably over the past two decades. Unemployment rates for women in some developing countries are currently two or three times those for men and the hardest hit are girls and older women. 42/

Table 5 shows trends in employment and unemployment for women in 12 developing countries. As can be seen in the table, between 1976 and 1981 the share of unemployed women in total unemployment increased in 10 of the 12 countries. Furthermore, for 6 countries in 1976 and 7 countries in 1981, women's share in unemployment was higher than their share in employment.

40/ Ibid., p.36.

41/ Ibid., p.37.

42/ Economic Commission for Latin America (CEPAL), Latin American women in economic and social development, 1980, p. 17.

Table 3. Changes in the Percentage of Women and Men Employed in Major Economic Sectors by Region - 1970 to 1980

Region	year	Sector Agriculture		Industry		Services	
		Women	Men	Women	Men	Women	Men
Latin America and Caribbean (middle income)	1970	12.7	45.9	17.4	23.7	70.0	30.4
	1980	11.4	37.8	17.3	28.3	71.2	33.9
		-1.3	-8.1	- .1	+4.6	+1.2	+3.5
Latin America and Caribbean (low income)	1970	34.6	63.5	14.8	16.8	50.5	19.7
	1980	28.6	56.1	16.5	20.9	54.8	23.0
		-6.0	-7.4	+1.7	+4.1	+4.3	+3.3
Asia (middle income)	1970	63.5	57.5	13.0	17.8	23.4	24.6
	1980	55.7	50.4	16.1	21.4	28.3	28.1
		-7.8	-7.1	+3.1	+3.6	+4.9	+3.5
Asia (other low income)	1970	72.3	71.2	9.4	9.4	18.3	19.4
	1980	66.2	65.2	11.8	11.8	22.0	22.9
		-6.1	-6.0	+2.4	+2.4	+3.7	+3.5
Asia (China)	1970	78.1	61.4	15.4	23.4	6.4	15.2
	1980	70.5	53.8	21.0	28.7	8.4	17.4
		-7.6	-7.6	+5.6	+5.3	+2.0	+2.2
Asia (India)	1970	80.7	63.8	10.8	14.8	8.5	21.4
	1980	74.0	56.7	14.7	18.4	11.3	24.9
		-6.7	-7.1	+3.9	+3.6	+2.8	+3.5
Africa & Middle East (Capital-surplus oil)	1970	58.5	60.6	10.8	16.7	30.7	22.6
	1980	49.3	53.0	13.4	20.7	37.2	26.3
		-9.2	-7.6	+2.6	+4.0	+6.5	+3.7
Africa and Middle East (middle income)	1970	72.9	59.9	9.2	17.3	17.9	22.8
	1980	66.3	52.2	11.4	21.4	22.3	26.3
		-6.6	-7.7	+2.2	+4.0	+4.4	+3.5
Africa and Mi le East (low income)	1970	89.2	80.5	3.8	8.4	6.9	11.0
	1980	86.6	76.4	5.1	10.5	8.3	13.0
		-2.6	-4.1	+1.3	+2.1	+1.4	+2.0
Developing country Average	1970	73.6	62.8	12.4	17.7	13.9	19.5
	1980	66.3	55.7	16.2	21.6	17.4	22.7
		-7.3	-7.1	+3.8	+3.9	+3.5	+3.2

Source: Derived from ILO, Bureau of Statistics, cit. from Michael Hopkins "Trends in employment in developing countries, 1960-80," in International Labour Review, Geneva, June 1983.

Table 4 : CHANGE IN THE PERCENTAGE OF WOMEN EMPLOYED IN MAJOR ECONOMIC SECTORS [a/] - DEVELOPING COUNTRIES - 1960 TO 1980

Country	Year	Agriculture Forestry, Hunting and Fishing	Manufacturing	Commercial Services (incl.trade, banking, social insurance, restaurants, hotels, real estate and business services)	Community, Social and Personal Services
Colombia	1964	11.2	17.4	10.5	53.5
	1970	8.9	21.1	21.6	45.7
		-2.3	+3.7	+11.1	-7.8
Salvador	1961	10.1	2.4	17.5	46.8
	1980	20.9	18.7	33.0	23.3
		+10.8	+16.3	+15.5	-23.5
Guyana	1960	23.7	12.6	14.4	39.8
	1965	13.7	12.2	17.7	41.2
	1977	13.8	14.2	21.0	46.8
		-9.9	+1.6	+6.9	+7.0
Haiti	1950 [b/]	79.7	5.6	6.3	5.2
	1980	46.7	6.8	27.0	7.1
		-33.0	+1.2	+20.7	+1.9
Iran	1966	20.3	50.9	0.9	16.9
	1980	41.5	32.5	1.1	14.5
		+21.2	-18.4	+0.2	-2.4
Indonesia	1961	64.2	7.3	7.1	11.0
	1971	59.2	10.7	13.6	8.1
	1978	56.7	10.0	20.9	10.3
		-7.5	+2.7	+13.8	-0.7
Jamaica	1960	15.4	17.3	13.6	38.0
	1973	12.9	8.4	18.7	45.6
	1980	22.9	7.7	20.6	45.1
		-7.5	-9.6	+7.0	+7.1
Korea,	1966	58.2	12.0	9.9	13.7
	1970	58.9	14.3	14.0	9.7
Republ.of	1981	38.5	20.4	27.0	9.5
		-19.7	+8.4	+17.1	-4.2
Mexico	1960	32.6	12.2	14.2	37.7
	1975	12.0	22.0	15.0	50.2
		-20.6	+ 9.8	+ 0.8	+12.5
Panama	1960	6.8	8.9	13.4	57.1
	1970	7.1	9.6	18.5	49.9
	1979	0.4	10.3	21.6	51.8
		-6.4	+1.4	+10.8	-5.3
Paraguay	1961	31.7	17.1	11.6	34.5
	1972	14.8	16.6	17.5	37.5
		-16.9	-5.5	+5.9	+3.0

Table 4 : (continued)

Country	Year	Agriculture, Foresting, Hunting and Fishing	Manufacturing	Commercial Services	Community, Social and Personal Services
Philippines	1960	35.0	20.6	11.1	21.3
	1970	31.3	19.4	12.0	27.5
	1975	22.0	15.0	13.3	30.5
		-13.0	-5.6	+2.2	+9.2
Singapore	1957	16.0	14.2	14.0	49.3
	1970	2.5	25.7	18.3	31.4
	1975	0.8	39.0	28.9	20.9
		-15.2	+24.8	+14.9	-28.4
Sri Lanka	1963	57.8	8.8	2.8	17.7
	1971	43.3	8.6	2.1	11.5
	1980	40.4	11.9	6.0	13.3
		-17.4	+3.1	+3.2	-4.4
Thailand	1960	86.0	2.6	6.2	2.9
	1970	82.7	3.7	5.9	5.4
	1980	73.5	7.0	9.6	8.0
		-12.5	+4.4	+3.4	+5.1
Trinidad and Tobago	1960	23.9	12.9	15.4	45.2
	1973	11.7	13.7	25.0	33.9
	1980	7.6	13.9	31.8	38.9
		-16.3	+1.0	+16.4	-14.3
Tunisia	1966	12.0	36.4	3.1	33.0
	1980	31.1	40.2	2.4	15.7
		+19.1	+3.8	-0.7	-17.3
Venezuela	1961	6.3	17.6	8.8	59.3
	1971	2.7	11.8	9.8	55.5
	1981	1.9	15.3	27.8	49.0
		-4.4	-2.3	+19.0	-10.3

a/ Countries were selected according to the data available for this time period. Consequently, there is little analysis of the changes that have taken place in Africa.

b/ 1960 data not available.

Sources: ILO, Yearbook of Labour Statistics, 1970, 1975, 1980, Geneva.

TABLE 5. Trends in Employment and Unemployment of Women in Selected Developing Countries, 1976-81

Country	1976		1981	
	Women workers as % of total economically active population	Unemployed women as % of total unemployed	Women workers as % of total economically active population	Unemployed women as % of total unemployed
Colombia	37.5	43.6	38.2	49.3[a]
Costa Rica	21.5	38.0	24.3[a]	33.2[a]
Cyprus	36.8	23.6	37.7	38.7
India	11.9	12.4	12.3	14.9
Jamaica	38.2	67.1	40.1[a]	67.6[a]
Republic of Korea	38.4	19.2	38.2	20.4
Mauritius	23.5	22.1	26.6	29.4
Panama	26.9	43.5	29.0[b]	46.9[b]
Puerto Rico	34.5	23.7	36.3	24.8
Syrian Arab Republic	9.2	10.3	15.8[b]	15.7[b]
Tunisia	19.2	12.7	22.6	15.3
Venezuela	28.0	22.1	26.7	21.7

[a] 1980 [b] 1979

Source: ILO, Year Book of Labour Statistics, 1982 (Geneva, 1983), Chapter II, pp.251ff. and Chapter III, pp.363ff. Table taken from ILO, World Labour Report, Vol.2, p.217.

Table 6. REGIONAL ESTIMATES OF ABSOLUTE POVERTY AND UNDEREMPLOYMENT, 1974 AND 1982

Region	Population (millions)		Numbers (millions and %) in basic needs poverty				Underemployed (millions)		% Population growth, 1974-82 (per annum)	% GNP per capita growth, 1974-82 (per annum)	
	1974	1982	1974		1982		1974	1982			
Latin America (middle income)	210	256	65	(31)	69.9	(27.3)	21.0	22.6	2.5	1.8	(3.7)
Latin America (low income)	97	121	29	(30)	35.3	(29.2)	9.2	11.2	2.8	0.4	(2.5)
Middle East and and Africa (oil)	154	201	40	(26)	49.0	(24.4)	14.0	17.2	3.4	1.1	(4.7)
Asia (excl. China)	1,095	1,313	759	(69)	753.6	(57.4)	296.0	293.9	2.3	2.6	(2.1)
Africa (arid)	142	177	73	(51)	77.0	(43.5)	25.5	27.0	2.8	1.8	(1.5)
Africa (tropical)	161	199	132	(82)	181.4	(91.2)	55.4	76.2	2.7	-0.8	(1.6)
Total	1,859	2,267	1,103	(56)	1,166	(51)	421.1	448.1	2.5	1.8	(2.6)

Source: M. Hopkins, op.cit.

The official unemployment figures do not adequately reflect the true magnitude of unemployment, since much female unemployment remains unregistered because the work done by many women is seasonal or because the women are not considered part of the labour force. Those registered as unemployed are usually workers in the modern urban sector who constitute a relatively small proportion of the labour force. 43/.

The question of unemployment in developing countries is complicated by the fact that a large proportion of the workers in the developing countries are underemployed, i.e. they work only part of the year or of the day, with the consequence that they have a very low income. Table 6 provides estimates of underemployment in the regions of the developing world, as well as estimates of absolute poverty in these regions, as the two phenomena are intimately linked. Research has shown that the problems of poverty and underemployment overlap and that women are among the most seriously affected: there is a greater relative concentration of underemployment among poor groups, households with unemployed heads or non-active heads (housewives, disabled persons, persons living on transfers, etc.) and households with female heads. 44/

A phenomenon that can be observed in connection with the trend away from employment in agriculture to industry and services is that women, who are mainly engaged in processing on a very small, or "micro" scale (in home production, in the informal sector), are negatively affected by a possible reduction in access to inputs resulting from the commercialization of agriculture, the emphasis placed on cash crops and production for the urban centres and the concomitant monetization of the rural economy. 45/

As has been frequently pointed out, women also often lose their traditional access to land in the process of modernization, which further reduces their access to agricultural products both for direct consumption and

43/ ILO, World Labour Review, Vol. 2, (Geneva, International Labour Office, 1984) p. 203.

44/ M. Hopkins, 1983, op.cit. pp. 472-473.

45/ ILO, World Labour Review, Vol.2, op.cit., pp. 205-208.

for further processing in agro-industrial activities. Furthermore, the fact that women then have no title to the land often prevents them from obtaining credit, as land ownership would be the only collateral for obtaining the loans needed to set up or expand small manufacturing activities. This applies both to rural women and those who migrate to urban areas. 46/

A further way in which increasing industrialization affects women's agro-industrial activities can be seen in the introduction of new techniques in both the production and processing of agricultural products. Since for women the distinction between agricultural production and manufacturing is not a clear one - they are often engaged in growing and processing agricultural products both for family consumption and sale - if they are disadvantaged, whether intentionally or unintentionally, by technological changes this can have serious negative effects on the well-being of the family and community.

A well-documented example was the introduction of new rice husking mills in Java, Indonesia. 47/ The decision to replace the traditional labour-intensive, decentralized, low-cost method of rice husking, an income-generating activity usually performed by women, by a more capital-intensive technology, the electric rice-husking mill, displaced an estimated 7.7 million women in Indonesia alone, thus reducing paid employment substantially, and did not providing any compensating benefits. Those employed in operating the new mills are men rather than women, which is attributed to the higher level of mechanical skills required. 48/

46/ See, for example, J. Bukh, The Village Woman in Ghana, Centre for Development Research Publications, No.1 (Uppsala, Scandinavian Institute of African Studies, 1979); and C. Riseeuw, et al., A Woman's Mind is Longer than a Kitchen Spoon, (Leiden, University of Leiden, 1980).

47/ See: M. L. Cain, "Java, Indonesia: the introduction of rice processing technology" in: R. Dauber and M.L. Cain, eds., Women and Technological Change in Developing Countries, op.cit., pp. 127-137; M. Ahmad and A. Jenkins, "Traditional paddy husking - an appropriate technology under pressure", Appropriate Technology (London), Vol.7, No.2 (Sept. 1980), pp.28-30.

48/ It has frequently been observed that when tasks usually performed by women are mechanized they are often taken over by men. Therefore, the introduction of technological innovations can lead to a double displacement of female labour.

The negative impact on women seen in this example demonstrates the effects of the unequal power relations between women and men and the imposition of an arbitrarily limited occupational role on women. This situation is perpetuated by the general assumption on the part of those introducing new technologies that women are basically less interested or less capable than men of adopting new technologies, by the generally higher rates of illiteracy among women in most developing countries, and by the very low representation of women in technological and scientific professions in most of these countries.

The roles of technology and training in women's participation in the manufacture of agro-based products in developing countries

Any discussion of planned industrialization as a force for development must take into consideration the modalities of acquiring and developing technology, that is, the type of technology, how it is acquired, how it is applied, who has access to it and who benefits from its use.

Changes made in available technology and the introduction of new technologies tend to have an impact on women's opportunities to participate in industrial production, specifically on the pattern and content of their work. The introduction of new technolgies can create both problems and beneficial effects for both female and male workers. However, women's already disadvantaged position in the labour market, their concentration in certain areas of employment, the discrimination which has limited their opportunities in education and training and their family responsibilities can often mean that technological changes have different impacts on the pattern and nature of men's and women's participation in the labour force. 49/

The way in which technological changes are implemented has often had the paradoxical effect of rendering most skilled occupations (for example, in connection with agro-industries, work in manufacturing wood and leather products) fully suitable for women, through the elimination of heavy physical

49/ Cf. "Review and Appraisal of Progress Achieved and Obstacles Encountered at the National Level in the Realization of the Goals and Objectives of the United Nations Decade for Women: Equality, Development and Peace", (A/CONF.116/5/Add.2), para. 18.

work, but at the same time reducing women's chances in the formal labour market and forcing them into lower-skilled and lower-paid employment, or into unemployment or work in the informal sector. This pattern has been observed in several agro-industrial branches, such as textiles, beverages, etc. 50/

Women's access to technology is greatly influenced by their access to the necessary industrial infrastructure and work-relevant training. In this connection it is instructive to consider the findings on women and industry in the compilation of replies to the United Nations questionaire to Governments prepared for the World Conference to Review and Appraise the Achievements of the UN Decade for Women. 51/ The following analysis of industrial policy in relation to technology and training in the various regions of the developing world is based on these replies.

Africa

The participation of women in industry in Africa is mainly confined to areas in which women have traditionally been active, almost all in the processing of agricultural and agro-based products. Their participation in formal sector manufacturing is very low. They work mainly in small-scale and cottage industries, predominantly food-processing, textiles, handicrafts, and the household production of goods for family consumption and sale. In general, very simple production technologies are used. It was apparent from the replies that these informal sector manufacturing activities of women are generally still not considered to be economic activities and are thus not included as part of industrial production.

Some important linkages in women's work in agro-industries and other economic sectors can be seen in those countries where women are engaged in producing and maintaining implements and equipment used in agriculture and light industry. A further linkage can be seen in women's heavy representation in marketing agro-based products, perishable and non-perishable, in many countries of this region.

50/ See, for example, M. Petritsch, The impact of industrialization on womens' traditional fields of economic activities in developing countries (UNIDO/ID/WG.351/7), Vienna 1981.

51/ Cf. A/CONF.116/5/Add.2, op.cit.

Training for women in the region is for the most part designed to upgrade the existing skills of women already in employment and to improve the provision of subsistence needs. Much less emphasis is placed on training to enable women to participate to a greater extent in management and planning of industrial activities, including agro-industries. A few countries are notable exceptions to that rule and reported deliberate efforts to provide training in management skills for women.

Asia and the Pacific

The participation of women in industry in the region can be found mainly in two categories. The first is intensification of women's work in traditional fields of activity, such as food production and food processing, and light industry (textiles, shoes etc.) in both the informal and formal sectors. The second is employment in the modern sector in redeployed manufacturing industries, for example garments, leather products, electronics etc., often in export-processing zones (EPZs).

With regard to employment in agro-industries, two apparently contradictory trends in the countries of the region can be observed: one is that increasing factory automation is putting many women out of work, forcing them to turn to agriculture etc. to earn a livelihood, and the other is that a small number of women are receiving more training and entering into non-traditional occupations, such as wood-working, making furniture and window frames, etc., usually as a result of government programmes designed for this purpose.

New technologies were reported to have had a positive effect on women inasmuch as women had become active agents of production, undertaking home-based industries (food-processing or handicrafts) by which they were able to earn supplementary income while at the same time meeting their household responsibilities.

In approximately half of the countries of this region, training was considered to be an important means of integrating women into changes in industry. It included technical training, retraining, and further training,

both in-plant and in training centres, directed towards target groups both inside and outside the employed female labour force. In many Asian countries a relatively high percentage of women (up to approximately 30 per cent) are trained in supervisory and management skills. There seem to be serious, and to some extent successful, attempts by some Governments of these countries to promote the integration of women in non-traditional occupations and at all levels, in the agro-industries for example, as designers of shoes, furniture and other products. In other countries, however, it was reported that many training programmes for women tended to do little to alter women's traditional status and, in some cases, might actually reinforce it. Training for women in these countries was usually directed towards promoting women's responsibility in family matters or at improving skills in traditionally female activities. The same thing might be said of female employment programmes involving the manufacture of handicrafts and garments or food preservation. The programmes also limited women to the role of supplementary-income-earners.

Latin America

In the countries of this region, there is a continued strong participation by women in all of women's traditional fields of activity, primarily production of agro-based products, which extends to the integration of women into the modern sector especially in the larger countries of the region. However, the impact of the current world-wide recession on the region, causing high rates of formal sector unemployment, leads to greater participation by women in the informal sector, particularly in self-employment, where their manufacturing activities are again concentrated in processing and producing agro-based products.

Some positive effects of technological change for women as producers in these countries were seen in greater employment opportunities and higher family income as a result of women's entry into the labour force. The situation of those women who are employed seems to be improving, including greater access to training and social services provided by enterprises, for example medical care, meals etc. While the range of activities and technical qualifications of women has been expanded, there still has not been sufficient

progress towards equal representation of women and men in management and decision-making positions, particularly at the middle and higher levels. It should be pointed out, however, that the percentage of women in administration and management is higher in Latin America than in other developing regions (see Table 7).

Training facilities for women in this region include in-plant training, retraining, training in training centres or institutes, mobile training units in rural areas, and fellowships in other countries and in centres for management training. The content and methods of the training programmes are largely adapted to the requirements of industry, including agro-industries, particularly carpentry and cabinet-making, shoe-making, tailoring, etc.

Western Asia

In general, women's participation in industry in the Western Asia region is confined largely to labour-intensive manufacturing industries, primarily agro-industries, requiring little capital investment, where skills acquired informally by women in domestic work are used without being appropriately remunerated.

Only some of the training programmes in this region include women. In general, there is little in the way of training facilities for upgrading women's skills to meet the requirements of new production processes, neither in the area of production, nor in design or management.

Trends in training and education

The country replies summarized above confirm the findings of other research with regard to occupational training which show that training for women relevant to the agro-industrial subsector is generally confined to a limited number of occupations, a limited range of activities and hierarachical levels and only two or three industrial branches. 52/

52/ ILO, World Labour Report, Vol.2, op.cit., p.290.

Table 7. Women as a percentage of administrators, managers and manual workers in manufacturing, in selected developing countries.

Country	Year	Administrators and Managerial Workers	of which: Women	Proportion of Women among	
				Managers	All Manual Workers
		Numbers	Numbers	Percentages	
AFRICA					
Egypt	1980	12400	600	4.8	5.2
Ghana	1970	1519	51	3.4	56.0
Malawi	1977	377	12	3.2	17.8
Mali	1976	10	0	0	61.5
AMERICA					
Barbados	1982	400	100	25.0	54.3
Chile	1981	19200	2000	10.4	23.0
El Salvador	1980	2910	781	26.8	41.8
Guatemala	1981	3397	489	14.4	23.9
Panama	1980	3360	560	16.7	21.8
Peru	1981	15700	1315	8.4	24.0
Venezuela	1981	48152	2867	6.0	26.1
ASIA					
Bahrain	1981	125	1	(1)	2.4
Bangladesh	1974	5740	39	0.7	3.8
Indonesia	1978	15449	0	0	49.8
Korea, Republic of	1982	89000	3000	3.4	38.6
Kuwait	1980	787	2	(0.3)	1.7
Singapore	1982	17455	1766	10.1	43.5
Sri Lanka	1981	7867	895	11.4	32.7
United Arab Emirates	1975	417	2	(0.5)	0.6

Source: ILO Year Book of Labour Statistics, 1983, Geneva, 1984

Furthermore, while women are to some extent included in training programmes as trainees, they are not involved as active participants in the process of building up and strengthening the industrial training infrastructure, which would be necessary in order to bring about positive changes with regard to vocational and professional training for women.

An examination of data regarding formal education indicates that in the coming years women will be better prepared to take part in the changes taking place in the industrial sector, particularly in manufacturing. In this connection, attention should be drawn to the importance of literacy as a necessary tool for full participation in social and economic relations and for providing access to modern technology as well as the possibility of changing one's perceptions of the world, both in terms of technological change as well as changes in social organization. This does not mean that it is necessary to implement change at any price, but that the possibilities of choosing among alternatives are expanded.

Between 1970 and 1980 the numbers of literate women in developing countries increased by 55.2 per cent, an annual rate of 4.5 per cent. It is estimated that by 1990 the rates of female illiteracy will have decreased substantially in all developing regions: in Africa from 82.4 per cent in 1970 to 60.4 per cent in 1990, in Asia from 52.8 per cent to 41.5 per cent and in Latin America and the Caribbean from 34.3 per cent to 15.7 per cent.[53/]

Another aspect of formal education that will strongly influence the possiblities for changes in women's participation in agro-industry is university education. Table 8 shows the percentage of female students in each field of study in selected developing countries, which gives an indication of the potential for women in these fields, either as practitioners or as planners in the field who have the possibility of influencing the direction of its development. It appears from the available data that in all countries higher education, as well as secondary technical/vocational education, is still strongly sex-stereotyped. Progress can be observed, however, in some Latin American countries, where, with high secondary level female enrolments

53/ "Review and Appraisal....", op.cit., Part II, Section C, "Education" (A/CONF.116/5/Add.4) pp. 6-7.

TABLE 8. Percentage of females in each field of study in selected developing countries, latest year available (M+F=100%)

Country	Year	All Fields	Education	Social Sciences	Natural Sciences	Medical Sciences	Agriculture	Others and not specified
AFRICA								
Algeria (a)	1981	30.2	.	32.5	23.8	40.1	24.5	.
Botswana	1981	37.9	42.6	39.5	24.7	.	.	.
Egypt(b)	1982	33.5	44.3	34.3	19.0	38.3	29.7	36.4
Ghana (c)	1981	17.4	25.6	21.4	9.7	22.1	10.4	.
Kenya (c)	1980	25.1	35.4	33.7	5.2	28.9	16.0	.
United Republic of Tanzania (c)	1981	21.0	32.7	19.1	5.2	21.6	15.4	17.6
Tunisia	1982	32.9	26.1	38.0	21.1	45.9	16.5	.
Zimbabwe (d)	1983	34.2	39.2	24.2	11.4	27.4	22.6	.
ASIA								
Bangladesh	1982	21.3	22.3	21.9	20.7	17.0	5.4	23.3
Hong Kong	1982	33.2	60.9	53.0	9.0	28.8	.	45.3
India (e)	1979	26.1	49.0	27.3	20.4	28.9	3.1	20.9
Korea, Republic of	1983	27.6	61.2	33.7	8.9	46.7	9.0	25.8
Philippines	1981	53.5	79.7	58.4	36.0	86.0	49.1	32.7
Singapore	1982	40.3	76.2	65.6	23.6	35.6	.	12.4
Sri Lanka (f)	1980	45.9	63.6	44.3	25.3	46.5	29.1	.
Thailand (g)	1975	39.8	53.3	37.6	21.1	43.3	25.7	.

TABLE 8 (Cont'd). Percentage of females in each field of study in selected developing countries, latest year available (M+F=100%)

Country	Year	All Fields	Education	Social Sciences	Natural Sciences	Medical Sciences	Agriculture	Others and not specified
LATIN AMERICA AND CARIBBEAN								
Argentina (h)	1981	53.3	86.2	49.2	33.4	52.2	27.5	85.4
Chile	1982	39.3	82.7	45.4	21.9	57.5	37.3	46.2
Colombia	1982	45.8	64.3	50.9	24.3	53.5	19.8	.
El Salvador (i)	1982	38.4	60.7	42.5	24.9	53.4	11.3	26.2
Haiti	1979	28.6	9.1	33.6	13.0	37.4	9.9	.
Mexico	1982	35.6	52.6	43.8	14.2	46.8	22.6	24.6
Nicaragua	1983	45.3	68.8	48.8	27.6	58.3	27.8	50.6
Peru (c)	1982	3..7	64.6	35.2	16.2	54.8	17.0	64.5

(a) Data refer to institutions attached to the Ministry of Education.
(b) Not including non-university institutions and Al Azhar University.
(c) Data refer to universities and equivalent institutions only.
(d) Data refer to universities and teacher-training colleges only.
(e) Data for "Social Sciences" include some students of mathematics and computer science.
(f) Not including technical or polytechnical institutes which are not of university level.
(g) Data refer to universities and equivalent universities only, including Open University.
(h) Data on "Others and not specified" refer to non-university institutions (mainly in the field of education).
(i) Data on "Others and not specified" include students of pre-university courses.

Source: Female Participation in Higher Education, Enrolment-Trends 1975-1982 (CSR-E-50), (Paris, UNESCO, 1985), pp.64-78.

and a high proportion of technical/vocational education of young women at this level, the differentiation by sex is less apparent than is generally the case in many developed countries.

Women's weak representation as practitioners in science and technology mirrors their status in society in general. The overall tendency at the academic level is that women are located in the humanities and social sciences and men in the natural sciences and technology, thus forming a horizontal differentiation.[54/] This is then reflected in the vertical diffentiation of men and women in the industrial hierarachy, as shown in Table 7. It should be noted that in Latin America, where the sex-stereotyping of women's education is less strong, women have also achieved a somewhat higher representation in administration and management. This points out the importance of breaking through the existing horizontal differentiation in the pattern of education for women as part of a programme to increase the participation of women at higher levels in industry.

Scale of production

In connection with questions relating to technology in agro-processing and the implications for women, the element of scale plays a central role. Women in developing countries are engaged in the processing and production of agro-products on the smallest scale, working in household production for consumption and sale, as own-account workers and as unpaid or paid family labour in the informal sector; but they are also employed in large- scale agro-industry, working in nationally and foreign-owned production units maufacturing agro-based products, mainly for export, but to a lesser degree for domestic consumption. There are some indications that while they are heavily represented both in small- and large-scale industry, they are much less present in the medium-scale, mostly domestically-owned, enterprises.

54/ J. Harding, Report on Science and Technology and Women, Report to the World Conference to Review and Appraise the Achievements of the UN Decade for Women,(Paris, UNESCO, 1985), p.12.

In planning for increased industrial production, what is important is not to insist on either large- or small-scale at all costs and in all situations, but to arrive at an optimal scale for each specific situation, both from thepoint of view of the individual industry, as well as in terms of total social benefit for the entire country, bearing in mind the far-reaching economic and social implications of the ways in which the scale and technology chosen are implemented.

The choice of scale and the choice of technology are closey related to each other, but in a different manner than is generally thought. It is often assumed, for example, that to be profitable, modern capital-intensive technologies can only be applied in large-scale production. This reflects the fact that modern technologies have for the most part been developed in and for conditions of production prevailing in industrialized countries. More recently, however, successful attempts have already been made in many industries to adapt modern production techniques for efficient use on a smaller scale. 55/ It can be observed that production in facilities built on a comprehensible scale and employing technologies that are comprehensible to the workers can be more readily adapted to changing market and resource conditions. At the same time employment in such facilities can be an effective means of raising the level of vocational skills among the members of the work force.

It is important in the implementation of new technologies to consider the possibilities for better adapting the organisation of work to people, rather than necessarily adapting people to the organization of work. The options available for the social organization of a particular enterprise as well as opportunities for greater involvement of women are strongly influenced by the scale and technology chosen. For example, smaller or medium scale enterprises provide more opportunity for joint ownership and participation by workers in management and decision-making, thus spreading knowledge of enterpreneurial and management skills among the population and increasing the country's potential for industrial expansion.

55/ See, for example, Optimum Scale Production in Developing Countries: a Preliminary Review of Prospects and Potentialities in Industrial

Trends in women's participation in manufacturing agro-based products

Household production

In most developing countries women have traditionally been responsible for production in the household of a large proportion of the goods for family consumption, often selling surplus production. In this way women generally make a significant contribution to household income. 56/

In the "Review and Appraisal of Progress Achieved and Cbstacles Ecountered at the National Level in the Realization of the Goals and Objectives of the United Nations Decade for Women: Equality, Development and Peace" 57/ prepared for the World Conference to Review and Appraise the Achievements of the UN Decade for Women, the economic importance of unpaid family labour and household work is emphasized. In many developing countries the proportion of women working who are classified as unpaid family labour lies between 30 and 50 per cent. A large part of those who are working in manufacturing as unpaid family labour are engaged in processing and producing agro-based products. It is further pointed out that household production plays an important role in all societies:

> "The nature of household work and the difficulties of quantifying and giving weight to its various dimensions have made this subject controversial. Household work combines various aspects - the production aspect, the income aspect, the social integration aspect, the human investment aspect and the time-use aspect. An ILO study 58/ estimated that in industrialized societies household production accounts for 25-40 per cent of the gross national product (GNP)."

56/ Cf. M.F. Loutfi, Rural Women, Unequal Partners in Development (Geneva, ILO, 1980).

57/ A. CONF.116/5/Add.2, op.cit., p.6.

58/ L. Goldschmidt-Clermont, Unpaid Work in the Household, (Women, Work and Development Series, No. 1), (Geneva, ILO, 1983), p.4.

"The economic character of household activity becomes especially evident when it has to be replaced by market goods and services. The post-war growth of the service sector could be partly explained by the fact that many activities that were previously an integral part of household production were transferred outside to the market." 59/

Women in developing countries continue to bear most of the responsibility for production for the household. A closer examination of the role of women in the household must take into account the multiple functions of a household, as a unit of production, reproduction, etc., as well as the wide variations in types of household, depending on factors such as property ownership, etc.

In most developing countries, some of the traditional processing, manufacturing, service or repair operations necessary to sustain the broadly self-sufficient village economy are still in operation. Many of these subsistence crafts are involved in the production of agro-based products such as grain processing, oil making, basket weaving, making ropes, brooms, leaf plates, fishing nets etc. The operations are not particularly artistic or skilled. Their distinction lies in the fact that each locality has devised ways of fulfilling basic wants by utilising locally available materials and energy sources. The production processes usually involve little capital: the tools as well as skills are passed down from generation to generation within the family. Women continue to play the major role in these often unremunerated productive activities. 60/

As indicated above, there is generally no clear distinction between production for the household and informal sector production for sale. Often a relatively simple technological innovation can enable women to increase output sufficiently to produce a surplus for sale. On the other hand, as has been seen in the example of rice mills in Java and multiple other cases, the introduction of more modern processing and production technology in the agro-based sector can have the effect of depriving large numbers of women of a livelihood. 61/. The observed vulnerability of household production to any

59/ A/CONF.115/5/Add.2, op.cit., p. 6.

60/ N. Banerjee, op.cit., p.18.

61/ I.Tinker, "New technologies for food-related activities", in: M.L. Cain and R. Dauber, eds., op.cit.

changes leads to the conclusion that measures designed to support women working in the household must be very carefully examined to try to determine all possible consequences of their implementation before they are put into effect.

The informal sector

There is no single agreed definition of exactly what constitutes the informal sector. It may generally be defined as self-employment in a small business activity which usually functions outside the framework of official regulations at the periphery, both social and geographic, of the modern urban economy. In many developing countries the informal sector is growing faster than the formal sector and a large proportion, often the majority, of the working population must find work there as the formal or modern sector cannot provide sufficient employment. 62/ An examination of the list of criteria suggested to define informal sector enterprises shows that a large part of the agro-industrial manufacturing carried out by women falls within this category.63/

The current rapid growth of the informal sector can be explained by several factors, most of which are linked to modernization and industrialization. These factors include the following:

62/ I. Ahmed, "Technology and Rural Women in the Third World", International Labour Review, Vol.122, No.4, (July-August 1983).

63/ "Suggested criteria for identifying informal sector enterprises:
1. Manufacturing. A manufacturing enterprise may be included in the informal sector if it satisfies one or more of the following conditions:
(a) It employs 10 persons or less (including part-time and casual workers)
(b) It operates on an illegal basis, contrary to government regulations
(c) Members of the household of the head of the enterprise work in it
(d) It does not observe fixed hours/days of operation
(e) It operates in semi-permanent or temporary premises, or in a shifting location
(f) It does not use any electricity in the manufacturing process
(g) It does not depend on formal financial institutions for its credit needs
(h) Its output is normally distributed direct to the final consumer
(i) Almost all those working in it have fewer than six years of formal schooling."
from: C.O. Moser and J. Marsie-Hazen, A Survey of Empirical Studies in Industries and Manufacturing Activities in the Informal Sector in the Developing Countries, (UNIDO/IS.470), 23 May 1984, p.203.

(a) The effects of changes in the organization of agricultural production in rural areas which lead to the displacement of paid agricultural labour, landlessness, increased rural poverty, rural-urban migration etc.;

(b) The effects of changes in the organization of industrial production which lead to the displacement of cottage and handicraft industries that cannot compete with large-scale production;

(c) The inability of formal sector enterprises to provide sufficient employment for rural migrants and other new entrants in the urban labour force;

(d) Employment policies of many formal sector enterprises that do not provide secure long-term jobs, particularly for women.

The size of the informal sector varies between countries, but in many African cities it employs between 50 and 60 per cent of the labour force.64/ A disproportionate number of those working in the informal sector world-wide are women: in most developing countries the percentage of the female labour force engaged in the informal sector is significantly higher than that of men. For example, in India, 41 to 49 per cent of the female labour force is in the informal sector, compared to 15 to 17 per cent of the male labour force; in Peru 46 per cent of those working in the informal sector are female, while only 18 per cent of employed women work in formal enterprises. In Latin America in general, 46 to 70 per cent of the informal se tor is made up of women. 65/

The kinds of work performed by women in the informal sector are often extensions of their traditional tasks. Their work in manufacturing is generally in small-scale handicrafts production, food processing, weaving, garment making and other activities which either have flexible hours or can be

64/ K. Newland, Women, Men and the Division of Labour, World Watch Paper No. 37, May 1980, p. 14.

65/ International Council for Research on Women (ICRW), "Keeping Women Out: A Structural Analysis of Women's Employment in Developing Countries", (Washington, D.C., USAID, April 1980), p.37.

carried out whithin or near their home. This makes it possible for women to combine child care and other household duties with paid work. It has been observed that the hours worked in informal sector manufacturing are often very long and are combined with a full load of household work, which consequently has negative effects on women's health and life expectancy. 66/ Women also turn to self-employment in the informal sector: "in response to the very low incomes of men as well as inflationary pressures on urban earnings which tend to react very slowly to overall changes in the cost of living". 67/

For women who are restricted in their possibilities to leave the home because of religious or cultural traditions, employment in the informal sector often provides their only opportunity to earn an income. Sometimes the goods produced, which are often sold with the assistance of young children, can generate a significant proportion of household income. 68/

Women working in the informal sector usually find it more difficult than men to move into the formal sector or even to move to the more secure and better paid informal sector jobs. 69/ Women's position in the informal sector is generally in the less productive areas of production or in auxiliary activities. Although in the small, family-based concerns that account for the majority of all small-scale enterprises women are often responsible for bookkeeping, ordering, control of supplies and other important management functions, the nature of these activities in the informal sector and continued discriminatory hiring patterns in most countries effectively prevent women from transferring acquired skills to similar activities in the formal sector. 70/

66/ I. Ahmed, op. cit.

67/ H. Paparek, "Women in Cities: Problems and Perspectives", in: I. Tinker and M.B. Bramsen (eds.), Women and World Development, (Washington, D.C., ODC, 1976), p.60.

68/ Z. Ahmad and M.F. Loutfi, "Women Workers in Rural Development", ILO Rural Employment Policies Branch (Geneva, May 1982); see also: ILO, Advisory Committee on Rural Development, 10th Session, Geneva, 22 November-1 December 1983, Promotion of Employment of the Rural Poor, including Rural Women, through Non-farm Activities, (Geneva, 1983).

69/ ICRW, op.cit., p.68.

70/ See: ILO 1983, op.cit.; and L. Paukert, op.cit., p. 15.

Productive units in the informal sector are, at least at the outset, small in scale and limited by simple technologies, little capital and lack of links with the formal sector. The informal sector seems to be characterized by ease of entry and reliance on indigenous resources; it utilizes skills acquired outside the formal school or training systems, and faces unregulated and competitive markets. The question arises as to how the vagaries and insecurity faced by those working in this sector could be lessened. It would be important to develop means of linking the informal with the formal sector, upgrading the technologies used, improving quality and quality control and establishing an adequate infrastructure. 71/

The importance of the informal sector production of agro-based products has been underlined as follows:

> "Although this sector's contribution to national output may appear small, its significance to women can be crucial as it may be the only, or main source of income - e.g. cash income, directly under their control. Its elimination by larger-scale mechanized processes in other locations can constitute a dramatic change in women's lives and status in the family". 72/

The significance of informal sector production and distribution is not limited to women, however, as it plays an essential role in providing for the needs of large parts of the population.

The situation of women working in agro-industrial manufacturing in the informal sector, both in rural and urban areas, has generated a great deal of concern during the last ten years. Women engaged in the production of agro-based products such as prepared foods, ground spices, soap, etc. need means of upgrading these activities so as to raise output and income and help them compete with formal sector enterprises producing similar products. 73/

71/ I. Palmer and U. von Buchwald, Monitoring Changes in the conditions of Women - a Critical Review of Possible approaches (Geneva, United Nations Research Institute for Social Development, 1980).

72/ Ibid.

73/ M. Carr, Blacksmith, Baker, Roofing-sheetmaker... Employment for Rural Women in Developing Countries, (London, Intermediate Technology Publications, 1984), pp.9-14.

As has been pointed out, however, there are problems associated with such efforts:

"In many instances, the demand for those products traditionally made by village women is declining as incomes rise. Foods and drinks processed from cereals, homespun cloth and earthenware goods, all have a low income elasticity of demand and are facing competition from "modern" products, often produced in urban-based factories. Here the challenge is to take existing skills and to adapt them (along with the help of upgraded equipment or scaled-down modern technology) to the manufacture of new products (e.g. bread, whiteware china) which have a high income elasticity of demand. Many of the products, which are currently imported into villages from urban-based factories or from overseas, could be made in the neighbourhood if the appropriate technology, training and other support services were available." 74/

Two types of measures for supporting women working in the informal sector that have been suggested are: 75/

(a) Government policy measures to promote the geographical dispersion and diversification of industrial activities, including the development of appropriate technologies. These measures should be carefully balanced between urban and rural areas.

(b) Grass roots measures to organize employment projects and schemes in various types of production of agro-industrial products for local markets, including support measures to ensure access to secure sources of supply of inputs and necessary infrastructure for storage, transport and marketing of output.

While these two types of measures could be equally applied to creating employment opportunities for women or men, the following four strategies were derived from an analysis of a large number of projects specifically aimed at increasing employment for women: 76/

74/ Ibid. p.9, see also I. Ahmed, 1983, op.cit.

75/ M. Carr, op.cit., p. 10.

76/ Ibid., pp.18-24.

(a) Increasing the productivity of existing work through the introduction of improved technologies and the provision of support services in order to enable women to increase output or improve the quality of traditional products and thus become or remain competitive in relation to similar products produced in factories;

(b) Increasing access to income-generating activities that were previously inaccessible by establishing co-operatives, providing credit, and, where necessary, introducing new technologies to alter the nature of work that had been taboo for women because of socio-cultural reasons, so as to make it acceptable for them and the community;

(c) Using existing skills to produce new products or modified traditional products for which there is a demand in cases when the products traditionally produced by women are no longer wanted by consumers who prefer more modern imported or factory-produced products;

(d) Introducing new skills to produce new products or modified traditional products in those cases where it is advisable to introduce entirely new types of work, together with the needed training, so that women can earn income by producing agro-based products for which there is a demand.

Peripheral forms of employment between the informal and formal sector

Subcontracted work - the "putting out" system

Another form of agro-industrial work usually performed by women that can be observed in both the formal and informal sectors is the "putting out system" or homeworking , which is a feature of both export-oriented manufacturing and production for the domestic market. 77/

77/ See, for example Chapkis and Enloe (eds.), Women in the Global Textile Industry, (London, Pluto Press, 1983); and F. Fröbel, et al., op. cit.

Under this system, which is most common in the garment industry and other light industries such as handicrafts, toys, artificial flowers, hats, etc., women are employed either in their own houses or small local workshops. They are provided with inputs and tools either by the owner of the enterprise or by middle-men or sub-contractors. They are paid piece-rate wages, which means that minimum wage laws cannot be enforced. All labour laws affecting the home workers are difficult to enforce because the work which is done at home is often unrecorded and even illegal. Because of their isolation the home workers are also seldom organized in trade unions.

The fact that homeworking often remains undeclared in order to evade taxes and labour regulations means that information on this type of work is often difficult to collect. Its exact magnitude is difficult to judge, but it is known to be a widespread phenomenon. For employers, aside from the financial incentive, subcontracting to home workers provides wider flexibility for meeting periods of heavy demand and for manufacturing small series. 78/

This type of work is likely to remain a significant feature of female employment in agro-industries in developing countries as long as it provides the only opportunity for paid employment to women who have no alternative. The vulnerability of those engaged in putting-out work tends to increase with more rapid urbanization, exacerbated by the lack of income earning possibilities in rural areas. 79/ Therefore, two kinds of measures are necessary: in the short term, measures to alleviate the working conditions of homeworkers; and in the longer term, alternative forms of work organization, such as co-operatives, providing women in rural and urban areas with access to the capital, inputs, equipment needed to produce semi-finished or finished products as well as secure long-term arrangements for the sale of these products, thus allowing women to work independently of the sub-contracting middle-men. 80/

78/ ILO, Contract Labour in the Clothing Industry, Second Tripartitite Technical Meeting for the Clothing Industry (Geneva, 1980).

79/ N. Banerjee, op.cit., p.22.

80/ For an in-depth study of successful projects establishing such alternative forms of work organization for women working in the coir-processing industry in Sri Lanka, see: C. Risseeuw et al., op. cit.

Seasonal employment

Some types of work processing agricultural products, such as fruit and vegetable canning, are highly seasonal in nature, and many other agro-industries generally employing a high proportion of female workers, such as processing fish and seafood, canning and preserving meat, and even garment making, are also subject to seasonal fluctuations. 81/ Some of the features characteristic of this kind of work are the long hours during production peaks, when perishable raw materials must be quickly processed, alternating with long periods of unemployment, and the arduous, repetitive nature of the jobs.

Seasonal fluctuations in some branches of the food processing industry have been decreasing. This is mostly due to technological innovations: refrigeration techniques and the availability and control of chemical additives allow a longer conservation of raw materials. However, seasonal fluctuations remain high in two particular branches that are important in developing countries: in the sugar industry and in fruit and vegetable processing. As fruit and vegetable processing everywhere is a branch that employs a high proportion of women, it is more particularly female labour that is affected. Therefore, strategies designed to improve the role of women in agro-industries should include ways to compensate those employed in these industries for the seasonal nature of the work. 82/

The formal sector

In most developing countries, the formal sector is presently able to absorb only a small proportion of the available labour force and an even smaller share of the total female labour force.

81/ UNIDO/IS.391, op.cit.

82/ The case study in chapter III of the present report provides an example of a project which attempts to overcome, among other problems, that of the seasonal nature of food-processing activities, both from the point of view of the producers and of the consumers.

Even though the statistics on women officially registered as economically active usually understate the true number of women working in the informal sector, only one third of the women recorded as working in developing countries are reported as being employed in the formal sector. 83/ Women's formal sector employment opportunities are limited by the fact that they generally tend to be unskilled or semi-skilled, and lack formal schooling. Those seeking work are usually young, unmarried, often rural migrants and hardly ever members of a trade union. 84/ While the overall figures for developing countries show employed women equally distributed between industry and services, this is not the case for many individual developing countries, as can be seen in Tables 3 and 4. An analysis of the activities of employed women shows that within the service sector, a large proportion of women are employed in commercial, clerical and auxiliary activities, and in the industrial sector, an overwhelming majority of women work in agro-industries, such as textiles and clothing, footwear and food processing, all of which are seen as extensions of women's traditional work in the home. The high participation of women in individual branches of agro-industry in many developing countries and the young age of these workers is illustrated by example of the Taiwan Province of China as shown in Table 9.

There has been considerable of discussion about whether women's formal sector employment opportunities in industry are increasing or decreasing at the global level. The findings of the study on the role of women in industry prepared for the World Conference to Review and Appraise the Achievements of the UN Decade for Women indicate that they are increasing in industry overall and in most developing countries. 85/ An earlier study had shown that in many developing countries women's industrial employment was on the decline, giving Brazil, Colombia, Guatemala and India as examples, where between 1950 and 1970 women's share of manufacturing employment decreased while men's increased, 86/ but the most recent ILO statistics indicate that this is no

83/ M. Boesveld, "Women and Industrial Development", Discussion Paper, University of Leiden, Faculty of Social Sciences, Institute of Cultural and Social Studies, 1979, p.2.

84/ ILO, "The Role of Women in Contributing to Family Income. Proceedings of the Regional Workshop, July 19-23, 1976, (Bangkok, Friedrich Ebert Stiftung, 1976), p.16.

85/ L. Paukert, The Role of Women in Industry, (Vienna, UNIDO, 1984).

86/ ICRW, op. cit.

longer the trend and that women's employment in manufacturing in these as well as in many other developing countries is actually increasing. (See Tables 3 and 4).

Table 9. Female Employment in the Manufacture of Agro-industrial Products in the Taiwan Province of China, 1973

ISIC	Industrial Branch	Share of women in the total employment in the branch	Share of total work force under 25 years of age
		(in per cent)	(in per cent)
311-312	Food Products	43	24
313-314	Beverages and Tobacco	47	15
321	Textiles	71	55
322	Clothing	81	59
323-324	Leather Products	74	50
331-332	Wood Products, Furniture and Fixtures	37	32
341-342	Paper and Printing	23	21
355	Rubber Products	54	41
3909	Toys	71	n.a.

Source: Calculated from Republic of China, Monthly Bulletin of Labour Statistics.

The difference in findings of these studies may be explained by the different time periods covered, as there are marked differences in women's participation in manufacturing between the initial, intermediate and later phases of industrialization. One pattern that has often been observed is that in the initial phases of industrialization large numbers of women are employed in the light manufacturing industries such as textiles, garments, shoes, food-processing, tobacco, etc. In the following phases, with the shift to increasingly complex production technologies, larger-sized enterprises and increased capital investment, as well as to heavier, metal and chemical industries, women tend to be excluded in favour of men. It is interesting to note that in Africa, however, the above pattern was not followed. There, women's participation in industrial manufacturing has been low from the outset, which can be partially explained by the fact that in some African countries women were barred from participation in industrial activities by colonial laws. 87/

During later phases of industrialization, employment opportunities for women may again increase in response to an increased demand for low-cost un- or semi-skilled labour. This trend can be observed in many Asian countries, particularly the newly industrialized countries (see Table 4). In the Republic of Korea, for example, the percentage of working women employed in manufacturing increased from 12.0 per cent in 1966 to 20.4 per cent in 1981. In Singapore there was a very large increase, with the percentage of women employed by manufacturing rising from 14.2 per cent in 1957 to 39.0 per cent in 1980.

In the Philippines, by contrast, despite its efforts to expand export manufacturing, there was a decline in the percentage of women employed in manufacturing, from 20.6 per cent in 1960 to 15.0 per cent in 1975. It thus appears that a development strategy primarily oriented towards manufacturing for export cannot be relied upon to provide a secure basis for expanding employment opportunities for women.

As for Latin America and the Caribbean, one study showed that between 1970 and 1980 there was no change in the share of women employed in manufacturing in the low income countries of this region and an increase of 1.7 per cent in the middle income countries. Although no comparable data

87/ N. Banerjee, op.cit., p. 24.

is available for Africa, tabulations based on the same study indicate that the proportion of African women employed in manufacturing, which, as has been noted, is much lower than in other regions, increased by approximately 2.0 per cent between 1970 and 1980. 88/

Although there is a lack of sufficient labour statistics disaggregated by sex that would permit exact comparisons between different developing countries and regions, it appears that while in many developing countries there is a growing trend towards employing women in export-oriented industies, in most of these countries women form a much smaller part of the industrial workforce than men in the medium- and large-scale enterprises producing manufactu goods for domestic consumption. This is true despite the fact already mentioned that in many countries women worked as wage earners in manufacturing in the beginning years of industrialization. One striking exception is Thailand, where women form almost half of the workforce in industrial manufacturing. 89/

Where women are employed in domestic industrial production they tend to be highly concentrated in a few branches of agro-industries; however, the branches in which they work within the agro-industrial subsector vary between countries. This apparently reflects differences in the model of industrialization followed. For example, in a country that followed a more domestically-oriented import-substitution strategy, such as India, a very high proportion of the women employed in manufacturing work in the three branches food-processing, tobacco and textiles. In contrast to this, women employed in manufacturing in Mauritius, a country following a policy of export-oriented industrialization, are concentrated to a great extent in the manufacture of wearing apparel (see Table 10).

Although the specific branches of agro-industrial manufacturing in which women are employed vary between countries, the nature of the work they perform generally exhibits several common characteristics. Women tend to be employed in production and auxiliary activities with lower productivity, lower job

88/ M. Hopkins, op. cit.

89/ S. Malee and T. Oratip, "The Role of Women in Industrialization of Thailand", paper presented at the UNIDO meeting on Women and Industrialization, Vienna, November 1978.

Table 10. Female employment in branches of agro-industry as share of total female employment in manufacturing
(in per cent)

AFRICA

	Food (311-312)	Beverages (313)	Tobacco (314)	Textiles (321)	Apparel (322)	Leather (323)	Footwear (331)	Wood Prod. (331)	Furniture (332)	Total
Botswana										
1978	14.8	10.2	-	51.0	-	4.8	-	0.5	-	81.3
1982	15.9	6.6	-	46.4	-	3.3	-		-	72.2
Egypt										
1974	14.3	-	2.0	42.9	4.1	-	2.0	-	-	65.3
1978	15.4	-	1.5	41.5	4.6	-	-	-	-	63.0
Kenya										
1979	45.7	3.4[a/]		10.3	6.0	0.9	-	5.2	0.9	72.4
1982	30.8	3.1[a/]		16.9	12.3	0.8	-	5.4	-	69.3
Malawi										
1979	8.4	1.1	54.6	4.8	6.4	-	0.3	1.6	0.7	68.3
1981	21.3	1.2	34.6	6.1	6.2	-	0.5	0.9	1.0	71.8
Mauritius										
1974	5.4	5.1[a/]		3.0	56.7	1.5[b/]	1.3	1.0[c/]		73.0
1978	3.5	2.8[a/]		5.5	68.0	1.9[b/]	1.0	0.6[c/]		83.3
1982	3.2	1.6[a/]		5.2	78.7	0.9[b/]	0.6	0.6[c/]		90.8

a/ ISICs 313 and 314 combined
b/ includes ISIC 355 (rubber products)
c/ ISICs 331 and 322 combined

Source: ILO, Yearbook of Labour Statistics 1983, 1984, as well as other ILO labour statistics available in the UNIDO data base.

Table 10. (Cont'd). Female employment in branches of agro-industry as share of total female employment in manufacturing
(in per cent)

ASIA AND THE PACIFIC

Country Year	Food (311-312)	Beverages (313)	Tobacco (314)	Textiles (321)	Apparel (322)	Leather (323)	Footwear (331)	Wood Prod. (331)	Furniture (332)	Total
Cyprus										
1981	11.7	2.8	1.4	8.4	44.0	3.9	9.9	1.1	1.1	84.3
Hong Kong										
1974	1.0	0.1	0.1	19.5	39.0	0.2	0.4	0.5	0.2	61.0
1978	0.9	0.1	0.1	14.3	42.0	0.2	0.4	0.3	0.1	58.4
1982	1.0	0.1	0.1	12.8	42.0	0.3	0.5	0.3	0.2	57.3
India										
1974	22.4	2.2	24.1	24.1	0.6	0.2	-	1.1	-	74.7
1978	28.8	0.2	22.7	24.8	1.4	0.2	-	0.9	-	79.0
1981	28.7	0.3	20.7	22.4	1.5	0.2	0.2	0.8	-	74.8
Phillippines										
1974	15.3	1.4	11.8	29.3	15.9	0.5	1.8	2.1	0.8	78.1
1977	14.4	1.3	4.8	20.9	25.8	0.5	1.5	2.2	1.2	72.6
Rep. of Korea										
1976	5.7	0.5	0.8	31.0	18.2	1.6	1.1	1.8	0.2	60.9
1978	5.7	0.6	0.6	30.8	16.0	1.4	1.5	1.9	0.5	59
1982	5.7	0.6	0.5	28.4	18.3	1.1	2.2	1.1	0.5	58.4
Sri Lanka										
1978	14.3	0.3	0.8	55.8	10.0	0.5	1.1	0.4	0.1	83.3
Tonga										
1975	76.6[a]			- [b]				1.5[c]		78.1
1978	59.4[a]			12.3[b]				0.9[c]		72.6
1980	46.1[a]			29.0[b]				0.8[c]		75.9

[a] ISIC 31 includes ISICs 311-312, 313 and 314. [b] ISIC 32 includes ISICs 321, 322, 323 and 324.

[c] ISIC 33 includes ISICs 331 and 332.

security and lower pay, ones which are physically arduous and do not provide them with transferable skills. Until now, labour legislation designed to provide protection to women has often been used as a pretext to exclude them from employment. 90/

Two new trends in employment opportunities for women can be observed in some developing countries. Many employers are beginning to show a preference for hiring women, particularly in those agro-industries where the strict observance of health regulations in the production process is essential and where importance is attached to regular work attendance. 91/ In these cases, women's greater willingness to maintain high standards of hygiene, more regular attendance and greater dependability have been seen to outweigh the disincentives to hiring women posed by protective labour legislation, particularly maternity benefits. This trend correlates with the rising levels of literacy and increasing average number of years of schooling of women in many developing countries.

The second trend that can be seen is that, in contrast to earlier observations that factory employment made use of existing skills acquired by women working in the informal sector, employers tend to prefer to hire unemployed women without experience working independently and train them on the job. This trend correlates with the increasing divergence that has been observed between the formal and the informal sectors, which has the result that the experience gained by women working in the informal sector is seen by employers as irrelevant or even detrimental to training them for formal sector employment, and that their experience working in the formal sector, where a very stringent division of labour prevails, reduces their capacity for independent work in the informal sector. 92/

As has already been noted, in many developing countries female employment has increased in certain export-oriented industries, a large proportion of which are agro-industries and many of which are located in the special export

90/ See, for example L. Paukert, op.cit.

91/ Interviews conducted by a researcher on women's employment in Colombia in 1984 (M. Kopeinig, Vienna); and information provided by M. Savarain, UNIDO Senior Industrial Development Field Adviser in Central America.

92/ Information provided by UNIDO staff members in various branches of the organization.

processing zones (EPZs) established by developing country Governments to attract domestic and foreign investment. It has been estimated that between 80 and 90 per cent of the low-skilled assembly work in the zones is performed by women. 93/ While women's employment in the EPZs has been the subject of much discussion and the number of women employed there has increased dramatically, it is important to keep these numbers in perspective. The total employment of women in EPZs in Asia, for example, was approximately 500,000 at the beginning of the 1980s, which represents approximately 1 per cent of the total female industrial labour force in Asia. 94/

The very large savings in wage costs which industries can achieve by employing women rather than men can be seen by comparing the average wages for men and women which show that, world-wide, women are paid much less than men in all sectors, including manufacturing. In some countries the difference is more than 50 per cent. In the Republic of Korea, female earnings in manufacturing are 45.3 per cent of male levels (see Table 11). Even within the same industry, women are generally paid less than men. In Hong Kong in the textile industry, women's wages were reported as being 30 per cent less than those paid to men in the late 1970s for performing comparable work. In Colombia, as well, women working in the textile industries earn considerably lower wages than men do. 95/

Women as members of the labour force have thus become the crucial factor of production which permits the further lowering of production costs. Their employment both in export-oriented industries and in services and commerce under depressed working conditions has allowed employers to reduce costs and continue producing and competing in export markets and simultaneously increasing their profit margins (as in situations of devaluation). 96/

93/ See L. Lim, op.cit.; F. Fröbel et al., op.cit.

94/ ILO, Women at Work No. 1, 1979.

95/ See G. Rauch, Frauenarbeit in den Städten Kolumbiens, (Münster, Verlag Frauenpolitik, 1978), p. 16.

96/ M. Da Gama Santos, Macro Economic Processes and Women's Role in Development (Implications of monetary and fiscal processes and policies for women's sectors and effective participation in societal change and development), (Preliminary draft), November 1981, p.31.

Table 11. Average earnings of women workers in non-agricultural activities and in manufacturing industries as a percentage of men's earnings in selected developing countries

Country	Year	Period	All non-agricultural activities %	Manufacturing industries %
Cyprus [a]	1982	w	58.2	56.3
Egypt	1977	w	62.8	63.1
Jordan [a][b]	1981	d	87.9	63.6
Kenya [b]	1982	m	83.7	75.8
Korea, Republic of [b][c]	1982	m	45.3	45.1
Singapore	1982	h	63.6 [d]	63.2
Sri Lanka	1982	h	80.1 [e]	81.9
Tanzania [b]	1980	m	85.1	78.5

[a] Adults
[b] Including employees
[c] Including family allowances, bonuses, etc.
[d] Including agriculture, fishing and sea transport
[e] Excluding ISIC major divisions 4, 8 and 9

Source: ILO, Year Book of Labour Statistics, Geneva, 1984, Table from L. Paukert, op.cit., Table B.5.

While it appears that developing countries will try to continue to promote export-oriented processing in the agro-industries as well as in other branches of manufacturing, it is likely that, as has already been pointed out, the increasing automation in industrialized countries will seriously reduce the incentives for foreign firms to locate manufacturing industries that produce for developed countries' markets in developing countries. Furthermore, the overall benefits of export-oriented industrialization strategies for the economies of the developing countries have been the subject of serious debate. It has been observed out that the export promotion policy of many developing countries stimulates export industries which are dissociated from domestic market expansion. With regard to the exploitation of female labour in the agro-industries, it has been suggested that "the cheap labour export promotion in fact only enhances the depression of the domestic market, the technological immobility, the traditional management (or mismanagement) and therefore prevents any structural change in LDCs." 97/

It has further been concluded in this connection that:

"The policy of international trade promotion based on low salaries ... in the medium and long run will be reflected in the impoverishment of the domestic market. Resources will be shifted to abroad at the expense of LDCs' labour forces.

"For entrepreneurs (industrialists) producing export goods, wages and salaries are a cost that has to be compressed as much as possible since their enterprises will not expect any benefit from the purchasing power of these wages and salaries. When production is geared to the domestic market, wages and salaries are both a cost and a guaranty of the purchasing power of the country necessary to increase enterprises' sales and industrialists' profits."98/

It can be thus seen that in planning measures to increase the contribution of women to the formal sector of agro-industry and to increase the contribution of agro-industry to national development, solutions should not be sought in merely replacing male labour with female labour or in maximizing production production for export, but in expanding the

97/ Ibid., p.31.

98/ Ibid., p.32.

agro-industrial sub-sector in an integrated manner with the agricultural sector so as to contribute to the satisfaction of the consumption needs of the population and in involving women in this process from the outset, at all levels and in both rural and urban areas

The Participation of Women in Individual Branches of Agro-Industry

An examination of the data on women's employment in manufacturing for those developing countries where data disaggregated by sex and industrial branch are available (7 Asian, 7 African, but no Latin American countries) reveals a high concentration of women in agro-industries, generally ranging between 60 and 90 per cent of total female employment in manufacturing (see Table 11). Furthermore, in most of these countries women are seen to be concentrated in only 1 to 3 branches, although, as already noted, the specific branches are different in different countries. 99/

One factor contributing to this concentration is the already-mentioned fact that women are strongly represented in the export-oriented manufacturing industries. For example, in Mauritius, 78.7 per cent of women employed in manufacturing in 1982 were in the production of wearing apparel, an increase of 22 percentage points over 1974. In Cyprus, 44.0 per cent of women employed in manufacturing in 1981 were in the wearing apparel industry; in Hong Kong in 1982 it was 42.0 per cent. By contrast, in India, a country more strongly oriented toward production for domestic consumption, as has been noted, female employment is more evenly distributed among three branches: food-processing, tobacco and textiles.

Two contrasting tendencies can be observed. On the one hand, the concentration of female employment in individual agro-industrial branches is subject to wide and apparently arbitrary fluctuations, and on the other hand the overall concentration of employed women in the agro-industries decreased

99/ Tables 12 - 20, pp. 66 - 94, give available data on women's employment in individual branches of agro-industry in developing countries. "Total employment" refers to total employment (men and women) in the branch; the "Index of total employment" was calculated using a base year 1981 = 100 for each branch and country for which the employment data for 1981 were available, in order to provide a basis to compare changes in the employment of women in a branch with changes in total employment in the branch.

in 8 of the 12 countries over the time period covered. In only one country, Mauritius, did the concentration of employed women in agro-industries increase significantly, due to the already mentioned increase in employment in wearing apparel (in absolute figures, from 3,401 in 1973 to 17,111 in 1983 - see Table 16).

It is evident that the existing data is inadequate to permit a thorough analysis of women's employment in specific branches of agro-industries. Not only is the selection of countries with data disaggregated by sex not at all representative for the regions of Africa and Asia, but also not a single country of Latin America and the Caribbean is represented. The picture is distorted, for example, by the fact that most of the countries with some years of relevant data tend to be more export-oriented than many others in the regions.

In light of the above, the following discussion of women's employment in these branches should be considered as tentative and preliminary, but at the same time should serve to stimulate further research and, above all, to emphasize the necessity of compiling relevant national data that goes beyond mere numbers of persons employed and covers type and level of activities performed, hierarchical and functional positions, sex-specific productivity figures, wage levels, training received, forms of organization of production units, as well as data disaggregated by domestic or foreign ownership of enterprise and by production for domestic consumption or export.

Food-Processing (see Table 12)

Taking the example of food-processing, it can be seen that in Africa in general the percentage of female employment is relatively low in the enterprises covered by these statistics, apparently only the formal sector. This contrasts sharply with the very large role played by women in food-processing in the informal sector. In most of these countries the tendency seems to be towards gradually increasing the share of women, even where total employment in the branch is decreasing. Mauritius presents a marked contrast to the general pattern: women form 25 per cent of the labour force in food-processing, increasing constantly in absolute numbers between 1973 and 1983. Most of these women are engaged in processing food for export.

The Asian countries represented here present a very different pattern. The female share of total employment in food processing ranges between

28 per cent and 48 per cent, even though for most of these countries employment in food processing does not represent a large share of total female employment in manufacturing. The one major exception is India, where, as was already seen, about three-quarters of the women employed in manufacturing are approximately equally distributed among food, tobacco and textiles.

It appears significant that, similar to Mauritius, most of these Asian countries are producing food products for export. The activities involved in food-processing for export consist largely of cleaning, canning or freezing and packaging fruit, vegetables, fish and seafood. Usually the skills and even the inputs required in these industries are not specific to any particular country in a region, which means that no country has a special advantage, either natural or historical, in the production process, so that the industry can be relatively easily moved from one country to another. The fact that women are heavily engaged in these industries that are not firmly rooted in one country and can be relocated in response to changing tastes or cost advantages helps to explain why statistically recorded female employment in a branch, which is usually that in the formal sector, can be subject to large and sudden fluctuations.

Tobacco Products (see Table 14)

The share of women in total employees in the manufacturing of tobacco products in the countries covered exhibits considerable differences between regions. While in Africa the share ranges between 7.4 and 16.7 per cent for the years covered, in Asia the share lies much higher, between 33.3 and 64.5 per cent, which is even higher than the share of women in total employees in textiles, for example, in most countries. The pattern of female employment in tobacco manufacturing in Asia has historical roots, as can be seen in the example of the women in India who work in the preparation of tobacco for rolling of bidis (local hand-rolled cigarettes). The vulnerability of workers engaged in this type of manual work to technological unemployment is demonstrated by reports that plans to mechanize these operations could reduce the number of women's work days in this branch from 200 million to 70 thousand with a relatively small capital investment of approximately 4 million rupees. 100/

100/ Economic Times (India), "Perils of Modernization", April 1984, quoted in N. Banerjee, op.cit., p.26.

To date, however, the employment fluctuations observed in the Asian countries represented over the time period covered appear to be related to fluctuations in total employment in the branch and not sex-specific in their effects.

Footwear (see Table 18)

In contrast to the pattern of female employment in the manufacture of tobacco products, which derives from their traditional activity in the branch in countries like India, women's employment in the manufacture of footwear appears to be a new phenomenon. In the traditional national industry, for example, in most of the African countries covered, a relatively low percentage of those engaged in this branch are women. In Mauritius, however, with its rapidly grown export-oriented industry, 34.2 per cent of employees in the branch in 1983 were women.

Similarly contrasting patterns of employment between the traditional national industry and recently introduced production structures in export-oriented industry can be observed in Asia. In Cyprus in 1981, women accounted for 60.7 per cent of the labour force in the branch, in Korea 53.1 per cent, in Hong Kong 31.8 per cent. In India, by contrast, women comprised only 3.7 per cent of those employed in the branch.

Women's work in the manufacture of shoes for export is another field which appears to be susceptible to reduction through the introduction of technological innovations. The increasing use of automation in the production of high quality footwear in the industrialized countries is expected to reduce considerably the amount of production of footwear in developing countries for export to developed countries. Future employment in the manufacture of footwear in developing countries is thus likely to be limited to production for the domestic market or perhaps for export to other developing countries. Specific policy measures would thus be necessary if women are to be integrated into this industry in the future. These should be part of an overall strategy for a more integrated and self-reliant approach to the development of the industry. 101/

101/ Cf. Third Consultation on the Leather and Leather Products Industry, Innsbruck, Austria, 16-19 April 1984. Report, (ID/318) (Vienna, UNIDO, 1984).

TABLE 12. EMPLOYMENT IN MANUFACTURING OF FOOD PRODUCTS (ISIC 311-312) - AFRICA
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Botswana											
Total employment						1.889	2.231	2.143	2.436	2.201	
Female employment						0.087	0.175	0.150	0.204	0.206	
% Female employment						4.6	7.8	7.0	8.4	9.4	
Index of total emp.						77.5	91.6	88.0	100	90.4	
Egypt											
Total employment		104	105	100	111	123					
Female employmnt		7	9	8	8	10					
% Female employment		6.7	8.6	8.0	7.2	8.1					
Index of total emp.		-	-	-	-	-					
Ghana											
Total employment	7.411	5.899									
Female employment	0.989	0.721									
% Female employment	13.3	12.2									
Index of total emp.	-	-									
Kenya											
Total employment							33.58	34.16	34.74	33.47	35.98
Female employment							5.30	5.40	6.40	4.00	4.70
% Female employment							15.8	15.8	18.4	12.0	13.1
Index of total emp.							96.7	98.3	100	96.3	103.6
Malawi											
Total employment							9.544	12.196	11.548		
Female employment							-	-	-		
% Female employment							1.6	0.3	2.4		
Index of total emp.							82.5	103.1	100		

TABLE 12 (Cont'd)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Mauritius											
Total employment	1.571	1.881	1.955	1.969	2.438	2.417	2.460	2.631	2.680	2.761	2.854
Female employment	0.419	0.542	0.540	0.598	0.686	0.639	0.635	0.709	0.709	0.678	0.721
% Female employment	26.7	28.8	27.6	30.4	28.1	26.4	25.8	26.9	26.5	24.8	25.3
Index of total emp.	58.6	70.2	72.9	73.5	91.0	90.2	91.8	98.2	100	101.9	106.5
Zimbabwe											
Total employment								24.0	24.8		
Female employment								1.7	1.8		
% Female employment								7.1	7.3		
Index of total emp.								96.8	100		

TABLE 12 (Cont'd). EMPLOYMENT IN MANUFACTURING OF FOOD PRODUCTS (ISIC 311-312) - ASIA AND THE PACIFIC
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Cyprus											
Total employment								3.851	4.375		
Female employment								1.760	2.120		
% Female employment								45.7	48.5		
Index of total emp.								88.0	100.0		
Hong Kong											
Total employment	14.35	14.22	14.35	15.21	15.27	16.45	16.51	17.97	17.26	18.39	16.73
Female employment	3.26	3.12	3.15	3.42	3.54	3.84	3.50	3.85	3.76	4.13	3.94
% Female employment	22.7	21.9	22.0	22.5	23.2	23.3	21.2	21.4	21.8	22.5	23.6
Index of total emp.	83.1	82.4	83.1	88.1	88.5	95.3	95.7	104.1	100.0	106.5	96.9
India											
Total employment	447	453	513	543	556	630	620	571	606		
Female employment	114	104	117	154	154	165	166	159	171		
% Female employment	25.5	23.0	22.8	28.4	26.7	26.2	26.8	27.8	28.2		
Index of total emp.	73.8	74.8	84.7	89.6	91.7	104	102.3	94.2	100.0		
Philippines											
Total employment		105.0		129.7	164.8		179.0	215.6	207.5		
Female employment		19.7		25.0	31.7						
% Female employment		18.8		19.3	19.2						
Index of total emp.		50.6		62.5	79.4		86.3	103.9	100		
Korea, Rep.											
Total employment				107.7	123.7	126.9	129.7	124.4	121.5	121.8	
Female employment				48.0	56.2	55.6	53.9	51.7	50.1	51.6	
% Female employment				44.6	45.4	43.8	41.6	41.6	41.2	42.4	
Index of total emp.				88.6	101.8	104.4	106.7	102.4	100.0	100.2	

Table 12 (Cont'd)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Sri Lanka											
Total employment						37.717	37.958				
Female employment						8.940	8.905				
% Female employment						23.7	23.5				
Index of total emp.						-	-				
Tonga [a/]											
Total employment			0.334	0.343	0.387	0.406	0.553	0.504			
Female employment			0.105	0.107	0.109	0.1130	0.184	0.170			
% Female employment			31.4	31.2	28.2	32.0	33.3	33.7			
Index of total emp.			-	-	-	-	-	-			

[a/] ISIC 31 includes ISICs 311-312, 313, and 314.

Source: International Labour Office (ILO), Yearbook of Labour Statistics 1983, 1984 and additional statistics from the ILO data base, Table 5B "Paid employment in manufacturing. By major groups of industry". Percent of female employment in total in branch and Index of total employment in branch calculated from these statistics.

TABLE 13. EMPLOYMENT IN MANUFACTURING OF BEVERAGES (ISIC 313) - AFRICA
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Botswana											
Total employment						0.263	0.284	0.288	0.262	0.398	
Female employment						0.060	0.070	0.071	0.057	0.085	
% Female employment						22.8	24.6	24.7	21.8	21.4	
Index of total emp.						100.4	108.4	109.9	100.0	151.9	
Egypt											
Ghana											
Total employment	2.758	3.197									
Female employment	0.275	0.341									
% Female employment	10.0	10.7									
Index of total emp.	-	-									
Kenya											
Malawi											
Total employment							1.465	1.436	1.412		
Female employment							0.021	0.020	0.016		
% Female employment							1.4	1.4	1.1		
Index of total emp.							103.8	101.7	100.0		
Mauritius											
Zimbabwe											
Total employment								6.500	6.600		
Female employment								0.300	0.100		
% Female employment								4.6	11.5		
Index of total emp.								98.5	100.0		

TABLE 13 (Cont'd). EMPLOYMENT IN MANUFACTURING OF BEVERAGES (ISIC 313) - ASIA AND THE PACIFIC
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Cyprus											
Total employment								1.718	1.639		
Female employment								0.473	0.513		
% Female employment								27.5	31.3		
Index of total emp.								104.8	100.0		
Hong Kong											
Total employment	3.210	2.890	2.680	2.960	3.260	3.540	3.440	3.970	4.190	4.340	4.460
Female employment	0.310	0.280	0.270	0.290	0.320	0.340	0.29C	0.310	0.360	0.330	0.390
% Female employment	9.7	9.7	10.1	9.8	9.8	9.6	8.4	7.8	8.6	7.6	8.7
Index of total emp.	76.6	69.0	64.0	70.6	77.8	84.7	82.1	95.0	100.0	103.3	106.4
India											
Total employment	78	81	48	54	55	56	65	55	58		
Female employment	9	10	1	2	1	1	1	2	2		
% Female employment	11.5	12.?	6.1	3.7	1.8	1.8	1.5	3.6	3.4		
Index of total emp.	134.5	139.7	82.8	93.1	94.8	96.6	112.1	94.8	100.0		
Philippines											
Total employment		18.80		21.10	27.70		28.8	32.3	28.1		
Female employment		1.80		2.00	2.90		-	-	-		
% Female employment		9.60		9.5	10.5		-	-	-		
Index of total emp.		66.9		75.1	98.6		102.5	114.9	100.0		
Korea, Rep. of											
Total employment				25.1	26.4	28.4	30.1	29.0	27.7	28.7	
Female employment				4.2	4.9	5.9	6.7	5.9	5.9	5.9	
% Female employment				16.7	18.6	20.8	22.3	20.3	21.3	20.6	
Index of total emp.				90.6	95.3	102.5	108.7	104.7	100.0	103.6	

Table 13 (Cont'd)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Sri Lanka											
Total employment						5.840	6.549				
Female employment						0.175	0.201				
% Female employment						2.3	3.1				
Index of total emp.						-	-				
Tonga a/											

a/ included in ISIC 31, for figures see Table 12.

Source: See Table 12

TABLE 14. EMPLOYMENT IN MANUFACTURING OF TOBACCO PRODUCTS (ISIC 314) - AFRICA
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Botswana											
Egypt											
Total employment		12	12	12	11	11					
Female employment		1	1	1	1	1					
% Female employment		8.3	8.3	8.3	9.1	9.1					
Index of total emp.		-	-	-	-	-					
Ghana											
Total employment	1.754	3.020									
Female employment	12. 9	37.9									
% Female employment	7.4	12.5									
Index of total emp.	-	-									
Kenya											
Malawi											
Total employment							8.1	7.333	4.921		
Female employment							1.015	0.831	0.456		
% Female employment							12.5	11.3	9.3		
Index of total emp.							64.6	49.0	100.0		
Mauritius											
Zimbabwe											
Total employment								6	4.6		
Female employment								1	0.4		
% Female employment								16.7	8.7		
Index of total emp.								30.4	100.0		

TABLE 14 (Cont'd). EMPLOYMENT IN MANUFACTURING OF TOBACCO PRODUCTS (ISIC 314) - ASIA AND THE PACIFIC
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Cyprus											
Total employment								0.461	0.442		
Female employment								0.287	0.252		
% Female employment								62.3	57.0		
Index of total emp.								104.3	100.0		
Hong Kong											
Total employment	0.83	0.82	0.79	0.78	0.78	0.76	0.81	0.85	0.9	0.89	0.91
Female employment	0.32	0.3	0.28	0.28	0.28	0.28	0.29	0.31	0.31	0.3	33.0
% Female employment	38.6	36.6	35.4	35.9	35.9	36.8	35.8	36.5	34.4	33.7	33.30
Index of total emp.	92.2	91.1	87.8	86.7	86.7	84.4	90.0	94.4	100.0	98.9	101.1
India											
Total employment	189	196	184	205	231	237	245	231	231		
Female employment	108	112	100	114	122	125	130	119	123		
% Female employment	57.1	57.1	54.3	55.6	52.8	52.7	53.1	51.5	53.2		
Index of total emp.	81.8	84.8	79.7	88.7	100.0	102.6	106.1	100.0	100.0		
Korea, Rep. of											
Total employment				13.6	16.3	14.2	13.0	14.2	14.7	12.3	
Female employment				6.8	6.8	6.4	5.0	5.7	6.4	4.7	
% Female employment				50.0	41.7	45.1	38.5	40.1	43.5	38.2	
Index of total emp.				92.5	110.9	96.6	88.4	96.6	100.0	83.7	
Philippines											
Total employment		22.0		18.8	22.3		20.10	20.50	60.20		
Female employment		14.20		8.30	10.70		-	-	-		
% Female employment		64.5		44.1	48.0		-	-	-		
Index of total emp.		36.5		31.2	37.0		33.4	34.1	100.0		
Sri Lanka											
Total employment						3.424	3.204				
Female employment						0.529	0.655				
% female employment						15.4	20.4				
Tonga a/											

a/ included in ISIC 31, for figures see table 12 (cont'd)

TABLE 15. EMPLOYMENT IN MANUFACTURING OF TEXTILES (ISIC 321) - AFRICA
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Botswana											
Total employment						0.8	1.0	0.7	1.1	1.6	
Female employment						0.3	0.5	0.4	0.6	0.6	
% Female employment						37.5	50.0	57.1	54.5	37.5	
Index of total emp.						72.7	90.9	63.6	100.0	145.5	
Egypt											
Total employment		274	293	279	303	290					
Female employment		21	27	26	30	27					
% Female employment		7.7	9.2	9.3	9.9	9.3					
Index of total emp.		-	-	-	-	-					
Ghana											
Total employment	8.702	7.053									
Female employment	0.395	0.103									
% Female employment	4.5	1.5									
Index of total emp.	-	-									
Kenya											
Total employment							20.08	19.66	21.85	22.73	21.51
Female employment							1.2	1.9	2.7	2.2	2.10
% Female employment							6.0	9.7	12.4	9.7	9.8
Index of total emp.							91.9	90.0	100.0	104.0	98.4
Malawi											
Total employment							4.155	5.396	4.561		
Female employment							0.091	0.114	0.079		
% Female employment							2.2	2.1	1.7		
Index of total emp							91.1	118.3	100.0		

Table 15 (Cont'd)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Mauritius											
Total employment	0.646	0.778	0.922	2.209	2.868	1.994	2.309	2.126	2.109	2.064	2.261
Female employment	0.255	0.302	0.468	0.865	1.404	1.009	1.215	1.149	1.089	1.106	1.123
% Female employment	39.5	38.8	47.2	39.2	50.0	50.6	52.6	53.8	51.6	53.6	49.7
Index of total emp.	30.6	36.9	47.0	104.7	136.0	94.5	109.5	101.3	100.0	97.9	107.2
Zimbabwe											
Total employment								16.9	18.8		
Female employment								1.5	1.7		
% Female employment								8.9	9.0		
Index of total emp.								89.9	100.0		

TABLE 15 (Cont'd). EMPLOYMENT IN MANUFACTURING OF TEXTILES (ISIC 321) - ASIA AND THE PACIFIC
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Cyprus											
Total employment								7.46	8.432		
Female employment								7.023	7.97		
% Female employment								94.1	94.5		
Index of total emp.								88.5	100.0		
Hong Kong											
Total employment	126.44	117.12	74.55	137.32	123.98	122.96	126.75	127.61	122.62	111.87	111.34
Female employment	62.62	59.58	7.34	66.88	60.43	59.01	59.81	62.15	60.57	54.44	52.07
% Female employment	49.5	50.9	9.8	48.7	48.7	48.0	47.2	48.7	49.4	48.7	46.8
Index of totale emp.	103.1	95.5	60.8	112.9	101.1	100.3	103.4	104.1	100.0	91.2	90.8
India											
Total employment	1616	1647	1667	1671	1653	1750	1764	1783	1831		
Female employment	120	114	115	116	114	142	122	123	133		
% Female employment	7.4	7.0	6.9	7.0	6.9	8.1	6.9	6.9	7.5		
Korea, Rep. of											
Total employment				365.7	405.3	419.3	336.5	384.5	394.6	386.8	
Female employment				259.7	279.5	291.1	212.6	264.2	268.5	258.0	
% Female employment				71.0	68.9	69.4	63.1	68.7	68.0	66.7	
Index of total emp.				92.7	102.7	106.2	85.3	97.4	100	98.0	
Philippines											
Total employment		86.40		88.00	108.90		133.90	136.20	106.70		
Female employment		37.80		38.60	46.20		-	-	-		
% Female employment		43.8		43.9	42.4		-	-	-		
Index of total emp.		81.0		82.5	102.1		125.5	127.6	100.0		

Table 15 (Cont'd)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Sri Lanka											
Total employment						65.759	64.098				
Female employment						34.774	33.817				
% Female employment						52.9	52.8				
Index of total emp.						-	-				
Tonga a/											
Total employment			0.001	0.003	0.004	0.032	0.040	0.133			
Female employment			0.0	0.003	0.004	0.027	0.034	0.107			
% Female employment			0.0	100.0	100.0	84.4	85.0	80.5			

a/ ISIC 32 includes ISICs 321, 322, 323 and 324.

Source: See Table 12

TABLE 16. EMPLOYMENT IN MANUFACTURING OF WEARING APPAREL (ISIC 322)- AFRICA
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Botswana											
Egypt											
Total employment		3	3	3	7	4					
Female employment		2	2	2	3	3					
% Female employment		66.7	66.7	66.7	42.9	75.0					
Index of total emp.		-	-	-	-	-					
Ghana											
Total employment	1.984	1.633									
Female employment	0.463	0.393									
% Female employment	23.3	24.1									
Index of total emp.	-	-									
Kenya											
Total employment							5.31	5.32	6.69	6.65	6.81
Female employment							0.7	1.0	1.6	1.6	1.50
% Female employment							13.2	18.8	23.9	24.1	22.0
Index of total emp.							79.4	79.5	100.0	99.4	101.9
Malawi											
Total employment							2.236	1.969	2		
Female employment							0.121	0.066	0.082		
% Female employment							5.4	3.3	4.1		
Index of total emp.							11.8	98.5	100.0		
Mauritius											
Total employment	4.007	6.625	7.574	11.484	13.675	14.28	15.879	16.991	19.353	18.998	19.538
Female employment	3.401	5.726	6.523	9.775	11.954	12.374	13.7	14.614	16.829	16.388	17.111
% Female employment	84.9	86.4	86.1	85.1	87.4	86.7	86.3	86.0	87.0	86.3	87.6
Index of total emp.	20.7	34.2	39.1	59.3	70.7	73.8	82.0	87.8	100.0	98.2	101.0

Table 14 (Cont'd)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Zimbabwe											
Total employment								14.5	16.8		
Female employment								2.8	3.4		
% Female employment								19.3	20.2		
Index of total emp.								86.3	100.0		

TABLE 16 (Cont'd). EMPLOYMENT IN MANUFACTURING OF WEARING APPAREL (ISIC 322)- ASIA AND THE PACIFIC
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Cyprus											
Total employment								1.823	2.107		
Female employment								0.57	0.701		
% Female employment								31.3	33.3		
Index of total emp.								86.5	100.0		
Hong Kong											
Total employment	161.95	169.65	217.32	244.51	229.75	246.96	251.34	263.68	259.71	257.26	253.31
Female employment	113.18	119.33	154.7	173.09	161.47	173.68	176.71	183.26	177.77	178.01	177.11
% Female employment	69.9	70.3	71.2	70.8	70.3	70.3	70.3	69.5	68.4	69.2	69.9
Index of total emp.	62.4	65.3	83.7	94.1	88.5	95.1	96.8	101.5	100.0	99.1	97.5
India											
Total employment	21	21	24	27	31	33	38	35	36		
Female employment	3	3	3	6	8	8	9	8	9		
% Female employment	14.3	14,3	12.5	22.2	25.8	24.2	23.7	22.9	25.0		
Index of total emp.	58.3	58.3	66.7	75.0	86.1	91.7	105.6	97.2	100.0		
Korea, Rep. of											
Total employment				258.2	279.1	283.5	264.9	266.8	293	216.9	
Female employment				152.2	153.3	155.3	141	146.5	166.9	166.0	
% Female employment				59.0	55.0	54.8	53.2	55.0	57.0		
Index of total emp.				88.1	95.3	96.8	90.4	91.0	100.0	74.0	
Philippines											
Total employment		30.30		85.40	84.60		112.70	150.80	142.90		
Female employment		20.50		57.60	57.0		-	-	-		
% Female employment		67.7		67.4	67.4		-	-	-		
Index of total emp.		21.2		59.8	59.2		78.9	105.5	100.0		

Table 16 (Cont'd)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Sri Lanka											
Total employment						7.551	6.389				
Female employment						6.253	4.622				
% Female employment						82.8	72.3				
Index of total emp.						-	-				
Tonga a/											

a/ Included in ISIC 32, for figures see Table 15.

Source: See Table 12

TABLE 17. EMPLOYMENT IN MANUFACTURING OF LEATHER PRODUCTS (ISIC 323)- AFRICA
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Botswana											
Total employment						0.182	0.160	0.353	0.269	0.162	
Female employment						0.028	0.051	0.184	0.136	0.043	
% Female employment						15.4	31.9	52.1	50.6	26.5	
Index of total emp.						67.7	59.5	131.2	100.0	60.2	
Egypt											
Total employment		4	4	4	4	5					
Female employment		0	0	0	0	0					
% Female employment		0.0	0.0	0.0	0.0	0.0					
Index of total emp.		-	-	-	-						
Ghana											
Total employment	1.708	1.982									
Female employment	0.315	0.352									
% Female employment	18.4	17.7									
Index of total emp.	-	-									
Kenya											
Total employment							1.66	1.48	1.39	1.22	0.96
Female employment							0.10	0.10	0.10	0.10	0.10
% Female employment							6.0	6.8	7.2	8.2	10.4
Index of total emp.							119.4	106.5	100.0	87.8	69.1
Malawi											
Total employment							0.071	0.071	0.073		
Female employment							0.00	0.00	0.00		
% Female employment							0.00	0.00	0.00		
Index of total emp.							97.3	97.3	100.0		

Table 17 (Cont'd)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Mauritius a/											
Total employment		0.385	0.341	0.590	0.556	0.681	0.601	0.563	0.271	0.322	0.347
Female employment		0.147	0.124	0.288	0.284	0.351	0.240	0.241	0.189	0.227	0.241
% Female employment		38.2	36.4	48.8	51.1	51.5	39.9	42.8	69.7	70.5	69.5
Index of total emp.		142.1	125.8	217.7	205.2	251.3	221.8	207.7	100.0	118.8	128.0
Zimbabwe											

a/ includes ISIC 355 (rubber products) for 1974 - 1980.

TABLE 17 (Cont'd). EMPLOYMENT IN MANUFACTURING OF LEATHER PRODUCTS (ISIC 323)- ASIA AND THE PACIFIC
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Cyprus											
Total employment								0.789	1.002		
Female employment								0.57	0.701		
% Female employment								72.2	67.0		
Index of total emp.								78.7	100.0		
Hong Kong											
Total employment	1.76	2.07	2.46	2.36	2.07	2.18	2.6	3.75	3.6	2.96	3.12
Female employment	0.63	0.71	0.8	0.85	0.61	0.65	0.89	1.4	1.25	1.07	1.10
% Female employment	35.8	34.3	32.5	36.0	29.5	29.8	34.2	37.3	34.7	36.1	35.3
Index of total emp.	48.9	57.5	68.3	65.6	57.5	60.6	72.2	104.2	100.0	82.2	86.7
India											
Total employment	23	22	23	16	17	17	21	21	20		
Female employment	1	1	1	1	1	1	1	1	1		
% Female employment	4.3	4.5	4.3	6.3	5.9	5.9	4.8	4.8	5.0		
Index of total emp.	115.0	110.0	115.0	80.0	85.0	85.0	105.0	105.0	100.0		
Korea, Rep. of											
Total employment				30.1	27.6	31.2	22.4	20.8	23.3	26.3	
Female employment				13.7	10.6	13.5	9.9	9.1	8.9	10.2	
% Female employment				45.5	38.4	43.3	44.2	43.6	38.2	38.8	
Index of total emp.				129.2	118.5	133.9	0.961	89.3	100.0	112.9	
Philippines											
Total employment		2.20		3.10	3.20		4.50	4.70	4.20		
Female employment		0.60		1.20	1.00		-	-	-		
% Female employment		27.3		38.7	31.3		-	-	-		
Index of total emp.		52.4		73.8	76.2		107.1	111.9	100.0		
Sri Lanka											
Total employment						1.13	1.037				
Female employment						0.289	0.261				
% Female employment						25.6	25.2				
Index of total emp.						-	-				
Tonga a/											

a/ Included in ISIC 32, for figures see Table 15.

TABLE 18. EMPLOYMENT IN MANUFACTURING OF FOOTWEAR (ISIC 324)- AFRICA
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Botswana											
Egypt											
Total employment		6	5	5	6	3					
Female employment		1	1	1	1	0					
% Female employment		17.7	20.0	20.0	16.7	0.0					
Index of total emp.		-	-	-	-	-					
Ghana											
Kenya											
Total employment							2.12	2.11	2.16	2.03	2.29
Female employment							0	0	0	0	0.2
% Female employment							0.0	0.0	0.0	0.0	8.7
Index of total emp.							98.1	97.7	100.0	94.0	106.0
Malawi											
Total employment							0.318	0.393	0.34		
Female employment							0.005	0.006	0.007		
% Female employment							1.6	1.5	2.1		
Index of total emp.							93.5	115.6	100.0		
Mauritius											
Total employment	0.465	0.454	0.430	0.399	0.491	0.479	0.458	0.443	0.425	0.455	0.486
Female employment	0.140	0.135	0.138	0.138	0.168	0.177	0.178	0.156	0.130	0.149	0.166
% Female employment	30.1	29.7	32.1	34.6	34.2	37.0	38.9	35.2	30.6	32.7	34.2
Index of total emp.	109.4	106.8	101.2	93.9	115.5	112.7	107.8	104.2	100.0	107.1	114.4
Zimbabwe											
Total employment								4.4	5.1		
Female employment								0.1	0.2		
% Female employment								2.3	3.9		
Index of total emp.								86.3	100.0		

TABLE 18 (Cont'd). EMPLOYMENT IN MANUFACTURING OF FOOTWEAR (ISIC 324)- ASIA AND THE PACIFIC
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Cyprus											
Total employment								2.434	2.954		
Female employment								1.466	1.794		
% Female employment								60.2	60.7		
Index of total emp.								82.4	100.0		
Hong Kong											
Total employment	4.74	4.21	4.33	4.98	5.0	5.1	6.12	6.89	8.05	7.42	7.30
Female employment	1.45	1.3	1.21	1.53	1.5	1.57	1.97	2.23	2.56	2.22	2.15
% Female employment	30.5	30.9	27.9	30.7	30.0	30.8	32.2	32.4	31.8	29.9	29.5
Index of total emp.	58.9	52.3	53.8	61.9	62.1	63.4	76.0	85.6	100.0	92.2	90.7
India											
Total employment	21	21	27	21	21	28	27	27	27		
Female employment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1		
% Female employment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7		
Index of total emp.	77.8	77.8	100.0	77.8	77.8	103.7	100.0	100.0	100.0		
Korea, Rep. of											
Total employment				16.1	21	27	22.5	22.8	27.1	37.7	
Female employment				9	9.7	15	12.1	12.2	14.4	20.1	
% Female employment				55.9	46.2	55.6	53.8	53.5	53.1	53.3	
Index of total emp.				59.4	77.5	99.6	83.0	84.1	100.0	139.1	
Philippines											
Total employment		5.8		8.9	8.6		10.10	9.70	11.30		
Female employment		2.30		3.00	3.30		-	-	-		
% Female employment		39.7		33.7	38.4		-	-	-		
Index of total emp.		51.3		78.8	76.1		89.4	85.8	100.0		
Sri Lanka											
Total employment						3.006	3.075				
Female employment						0.709	0.463				
% Female employment						23.6	15.1				
Tonga a/											

a/ Included in ISIC 32 for figures see Table 15 (cont'd)

TABLE 19. EMPLOYMENT IN MANUFACTURING OF WOOD AND CORK PRODUCTS (ISIC 331)- AFRICA
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Botswana											
Total employment						0.164	0.301	0.255	0.368	0.138	
Female employment						0.003	0.006	0.006	0.020	0.001	
% Female employment						1.8	2.0	2.4	5.4	0.7	
Index of total emp.						44.6	81.8	69.3	100.0	37.5	
Egypt											
Total employment		6	5	5	6	3					
Female employment		0	0	0	0	0					
% Female employment		0.0	0.0	0.0	0.0	0.0					
Index of total emp.		-	-	-	-						
Ghana											
Total employment	12.009	14.567									
Female employment	0.098	0.137									
% Female employment	0.8	0.9									
Index of total emp.	-	-									
Kenya											
Total employment							8.52	9.17	8.92	9.68	8.65
Female employment							0.69	0.69	0.70	0.70	0.60
% Female employment							7.0	6.5	7.8	7.2	6.9
Index of total emp.							95.5	102.8	100.0	108.5	97.0
Malawi											
Total employment							1.408	1.485	1.513		
Female employment							0.031	0.036	0.012		
% Female employment							2.2	2.4	0.8		
Index of total emp.							93.1	98.1	100.0		

Table 19 (cont'd)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Mauritius a/											
Total employment	0.835	0.913	0.904	0.866	1	0.969	1.132	1.111	1.000	1.136	1.138
Female employment	0.035	0.104	0.065	0.129	0.183	0.114	0.137	0.182	0.131	0.150	0.171
% Female employment	4.2	1.4	7.1	14.8	18.3	11.8	12.1	16.4	13.1	13.2	15.0
Index of total emp.	83.5	91.3	90.4	86.6	1	96.9	113.2	111.1	100.0	113.6	113.8
Zimbabwe											
Total employment								6.2	6.9		
Female employment								0.1	0.2		
% Female employment								0.1	0.2		
Index of total emp.								89.8	100.0		

a/ ISIC 33 includes ISIC 331 and 332.

TABLE 19 (Cont'd). EMPLOYMENT IN MANUFACTURING OF WOOD AND CORK PRODUCTS (ISIC 331)- ASIA AND THE PACIFIC
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Cyprus											
Total employment								1.939	2.669		
Female employment								0.197	0.203		
% Female employment								10.1	7.6		
Index of total emp.								72.6	100		
Hong Kong											
Total employment	7.56	7	7.6	7.69	7.86	8.12	8.31	7.39	6.97	6.34	5.74
Female employment	1.57	1.42	1.54	1.54	1.48	1.33	1.37	1.27	1.15	1.06	0.85
% Female employment	20.8	20.3	20.3	20.0	18.8	16.4	16.5	17.2	16.5	16.7	14.8
Index of total emp.	108.5	100.4	109.0	110.3	112.8	116.5	119.2	106.0	100.0	90.8	82.4
India											
Total employment	46	46	45	47	43	44	46	46	46		
Female employment	5	5	4	6	6	5	6	5	5		
% Female employment	10.9	10.9	8.9	12.8	14.0	11.4	13.0	10.9	10.9		
Index of total emp.	100.0	100.0	97.8	102.2	93.5	95.7	100.0	100.0	100.0		
Korea, Rep. of											
Total employment				51.9	56.6	62	54.8	43	43.9	41.8	
Female employment				15.3	18	18.6	15.6	11	12.1	10.1	
% Female employment				29.5	31.8	30.0	28.5	25.6	27.6		
Index of total emp.				18.2	128.9	.2	124.8	97.9	100.0	95.2	
Philippines											
Total employment		41.9		80.10	[illegible]		70.40	78.00	64.10		
Female employment		2.70		3.0	4.9		-	-	-		
% Female employment		6.4		3.7	6.9		-	-	-		
Index of total emp.		65.4		125.0	110.1		109.8	121.7	100.0		

Table 19 (cont'd)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Sri Lanka											
Total employment						5.649	5.873				
Female employment						0.22	0.232				
% Female employment						3.9	3.9				
Index of total emp.						-	-				
Tonga a/											
Total employment			0.102	0.111	0.119	0.127	0.166	0.188			
Female employment			2.0	1.8	1.7	1.6	1.2	1.6			
% Female employment			2.0	1.8	1.7	1.6	1.2	1.6			
Index of total emp.			-	-	-	-	-	-			

a/ ISIC 33 includes ISICs 331 and 332).

Source: See Table 12

TABLE 20. EMPLOYMENT IN MANUFACTURING OF FURNITURE AND FIXTURES (ISIC 332)- AFRICA
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Botswana											
Egypt											
Total employment		5	3	3	4	3					
Female employment		0	0	0	0	0					
% Female employment		0.0	0.0	0.0	0.0	0.0					
Index of total emp.		-	-	-	-	-					
Ghana											
Total employment	1.201	1.436									
Female employment	0.033	0.056									
% Female employment	2.7	3.9									
Index of total emp.	-	-									
Kenya											
Total employment							3.1	3	3.1	2.56	2.65
Female employment							0.1	0.1	0.1	0.0	0.0
% Female employment							3.2	3.3	3.20.0	0.0	0.0
Index of total emp.							100.0	96.8	100.0	82.6	85.48
Malawi											
Total employment							0.829	0.711	0.871		
Female employment							0.014	0.028	0.013		
% Female employment							1.7	3.9	1.5		
Index of total emp.							95.2	81.6	100.0		
Mauritius [a/]											
Zimbabwe											
Total employment								5.2	5.9		
Female employment								0.2	0.1		
% Female employment								3.8	1.7		
Index of total emp.								88.1	100.0		

[a/] included in ISIC 33, for figures see Table 19

Table 20. (Cont'd). EMPLOYMENT IN MANUFACTURING OF FURNITURE AND FIXTURES (ISIC 332)- ASIA AND THE PACIFIC
(in thousands and percentage)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Cyprus											
Total employment								1.993	2.392		
Female employment								0.158	0.197		
% Female employment								7.9	8.2		
Index of total emp.								83.3	100.0		
Hong Kong											
Total employment	7.86	7.54	7.53	8.49	8.74	9.38	9.42	11.36	10.74	9.37	8.11
Female employment	0.73	0.58	0.36	0.49	0.47	0.57	0.63	0.78	0.71	0.77	0.59
% Female employment	9.3	7.7	4.8	5.8	5.4	6.1	6.7	6.9	6.6	8.2	7.3
Index of total emp.	73.2	70.2	70.1	79.1	81.4	87.3	87.7	105.8	100.0	87.2	75.5
India											
Total employment		8	6	6	6	6	6	6	6		
Female employment		0	0	0	0	0	0	0	0		
% Female employment		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Index of total emp.		133.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
Korea, Rep. of											
Total employment				10.7	14.3	18.9	17.4	19.4	17.1	20.9	
Female employment				1.8	2.5	4.5	4.3	4.9	3.4	4.8	
% Female employment				16.8	17.5	23.8	24.7	25.3	19.9	22.9	
Index of total emp.				62.6	83.6	110.5	101.8	113.5	100.0	122.2	
Philippines											
Total employment		10.6		19.3	19.4		33.0	32.9	31.9		
Female employment		1.0		2.3	2.6		-	-	-		
% Female employment		9.4		11.9	13.4		-	-	-		
Index of total emp.		33.2		60.5	60.8		103.4	103.1	100.0		

Table 20 (cont'd)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Sri Lanka											
Total employment						1.432	0.799				
Female employment						0.41	0.038				
% Female employment						2.9	4.8				
Index of total emp.						-	-				
Tonga [a/]											

[a/] included in ISIC 33, for figures see Table 19

Source: See Table 12

III. THE PARTICIPATION OF WOMEN IN AGRO INDUSTRIES IN DEVELOPING COUNTRIES AS ILLUSTRATED BY THE EXAMPLE OF FOOD PROCESSING

Overall picture

The following section is based on two country studies, one for Sierra Leone and one for Thailand, some additional information for Colombia, and reports on several projects for women. The country studies for Thailand and Sierra Leone were commissioned by UNIDO and carried out in 1981-1982. The other information derives from consultants' reports etc. prepared for international organizations. 102/

Thailand and Sierra Leone present marked contrasts as far as women's participation in manufacturing is concerned. As pointed out before, Thailand is a country where women's participation in manufacturing is very high;

102/ M. Carr, 1984, op.cit.;
FAO, Women in Food Production and Food Security, presented at the Government Consultation on the Role of Women in Food Production and Food Security, 10-13 July 1984, Harare, Zimbabwe;
M. Petritsch, Integration of Women in Industrial Development, INSTRAW/UNIDO Study on the integration of women in small-scale rural industries, January 1984;
J.C. Simon, A Differentiated Approach to the Industrialization of the Agro-food Sector in the Developing Countries, (UNIDO/ID/WG.427/3) July 1984;
UNECA, Traditional Palm Oil Processing: Women's role and the Application of Appropriate Technology, (ST/ECA/ATRCW/82/02) 1983;
UNIDO, Women in the Development of Textile and Food Processing Industries, (UNIDO/IS.391) 16 June 1983;
UNIDO, Assistance to the Uplands Bacon Factory (SI/KEN/81/801), Kenya, Technical Report (DP/ID/SER.A/378), 7 September 1982;
R.B. Johnson, Effective Integration of Women in the Development of Food Processing Industries in Sierra Leone (UN/K-17621-045-0), 18 January 1982;
B. Phithakpol, et.al., An Exploration of Conditions and Constraints to the Effective Integration of Thai women, especially in the Development of the Food Processing Industries, May 1982;
S. Gopalan, Employment of Women in India: Critical Issues (ID/WG.351/1) September 1981;
M. Petritsch, ID/WG.351/7, 1981, op.cit.;
UNIDO, Women in the Redeployment of Manufacturing to Developing Countries, (UNIDO/ICIS.165) July 1980;
J. Belo, Development and Trends in Food Packaging, UNIDO, 1978.

44.5 per cent of paid employees in manufacturing in 1974 were women [103/], while in Sierra Leone only 20.7 per cent of total workers in manufacturing in that year were women. [104/]

The food-processing industry accounted for 13.5 per cent of industrial output in developing countries in 1979, the largest share of any individual branch of industry. [105/] However, in many developing countries, the food-processing sector has not been growing as fast as total industrial production. The consumption of processed foods is highly income-related, keeping pace with the per capita increase in Gross Domestic Product (GDP); thus it is to be expected that with further economic growth and wider income distribution, the demand for processed foods will grow in both developed and developing countries.

Looking at figures for trade in processed food for 1979, it can be seen that developing countries exported $25 billion worth of processed food products. Of this total, $ 19 billion worth were exported to developed countries and $ 6 billion to developing countries. Imports of processed food by developing countries totalled $ 20 billion in 1979, or 7.2 per cent of the total imports of manufactured goods by developing countries. The share of these imports originating in developing countries increased from 21 per cent in 1970 to 30 per cent in 1979. [106/]

The projections of UNIDO's 1985 Global Report indicate the considerable possibilities for increased trade among developing countries in this industrial branch. According to the scenarios developed, with intensified South-South co-operation the share of imports of processed food products originating in developing countries could increase from 30 per cent to 39 per cent by 1990. [107/]

103/ ILO, Yearbook of Labour Statistics 1984, op.cit., Table 5A, p.354.

104/ R.B. Johnson, op.cit., Table 3, p.5.

105/ UNIDO, Industry and Development: Global Report 1985, (New York, United Nations, 1985), p. 81.

106/ Ibid., pp. 81-84.

107/ Ibid., p. 84.

One source of problems of the food-processing industries in developing countries is that the industry is inadequately diversified. A major cause of this is that it tends to be highly concentrated, either in the hands of TNCs or State monopolies. 108/ There are very few cases of the simultaneous development of the co-operative sector, private small enterprises, foreign firms and national groups. It has been suggested that it would be essential to promote and strengthen the position of a wider diversity of actors in the food-processing industries, including the following: 109/

(a) Small-scale rural entrepreneurs engaged in primary processing (dairy farms, flour mills, etc.);
(b) Rural co-operatives with the capacity to extend their activities from primary to secondary processing;
(c) Small urban enterprises with the ability to respond effectively to changing market requirements in a variety of areas (industrial bakeries, carbonated beverages, ice creams, precooked dishes, etc.);
(d) Enterprises in other branches of activity capable of absorbing and adding value to the by-products of the food industries (chemical, chemical-related, cosmetic and pharmaceutical enterprises).

In order to promote such diversification, national investment activity and financial assistance from external sources should be redirected towards loans to small- and medium-scale enterprises, credit for co-operatives etc. Besides diversification of the food-processing industry, other necessary measures would be improvements in food-processing technology, increased productivity of the sector and the development of stronger urban-rural linkages. 110/

National efforts to strengthen the food-processing industry in developing countries by means of the measures outlined above would benefit greatly from a

108/ J.C. Simon, op.cit., p. 14.

109/ Ibid., p. 15.

110/ Ibid., pp. 3 and 13.

greater involvement of women at all levels and at all stages of planning and implementation. Women could make a substantial contribution to the development of the industry and at the same time this sector could provide them with new employment opportunities and needed income. In order to facilitate this, different means such as training of women at all levels and the provision of industrial infrastructure would be necessary to improve the conditions for women's participation in this sector.

Women's employment in food-processing industries

Employment of women in the formal sector in domestically-owned food processing industries varies greatly between regions and countries. In Latin American countries the proportion of women employed in food-processing industries is below the average for the manufacturing sector. This also applies in African countries in the modern sector of food processing and beverage industries, where the share of women in total employees is about 11 per cent. In Asia relatively more women are employed in these industries. For example the numbers of women and men employed in food-related industries in one Asian country, Thailand, in 1978 were 60,300 women (24,900 urban; 35,400 rural. and 75,100 men (24,300 urban; 50,300 rural). 111/ The high proportion of female employees may be the result of deliberate actions by the Thai Government, which decided to invest heavily in labour-intensive industries, with food-processing industries at the top of the list. 112/

The amount of employment available for women in different branches of food-processing depends, among other factors, on:

(a) the level of technology in these countries;
(b) the pace of development in the manufacturing sector that creates other jobs for men, thus leaving food processing jobs to women;
(c) the assumed "low physical productivity of women as compared with men" (Sierra Leone);
(d) the geographical location of the food processing industries in the country.

111/ Report of the Labour Force Survey, July-Sept. 1978, National Statistical Office of Thailand.

112/ B. Phithakpol, et.al., op.cit., p.22.

In addition to overall employment trends in the food-processing industry, there are different branch-specific employment patterns owing to the heterogeneous character of the industry, which exhibits considerable differences between branches in terms of economic, technological and organizational factors.

In the countries studied, women are well represented in fruit and vegetable canning, fish and seafood preservation and the manufacture of confectionery and biscuits, both in terms of numbers and of status. By contrast, vegetable oil production, sugar refining and the beverage industry employ mostly men.

Female- and male-dominated branches differ from each other in terms of the technical skills demanded, working conditions, stability of employment and income, industrial hazards and the degree of automation.

The group of industries with high levels of female employment still relies mainly on the informally acquired skills of women learned in their work in the household or home production. These industries are characterized by shorter training time and lower rates of pay (women are often hired as apprentices at very low wages). The work is declared to be not physically difficult but it is performed under extremely difficult working conditions, such as heat and high humidity, which leads to an above-average number of work-related accidents. In addition, the industries are subject to strong seasonal fluctuations of production resulting in frequent spells of unemployment. They thus do not guarantee stability of income, nor do they even guarantee recurring employment in the same firm. Recent changes in the fruit and vegetable preservation industry made possible by advances in freezing technology mean that this industry is less subject to seasonal fluctuations. However, this could also mean a shift towards employing greater numbers of men rather than women, in conformity to the often observed pattern whereby men tend to take over women's jobs as soon as technological innovations are introduced.

The group of food-processing industries that employ mainly men often demand special requirements such as strength (only if production is not fully or mostly mechanized), to some extent formal training, and greater mechanical skills. Automated production also imposes stricter requirements in terms of

regular work attendance by those employed. The above requirements lead to hiring practices that discriminate against women in these industries, based on such supposed characteristics of women as lower physical strength, lack of formal training and irregular work attendance.

Given the problems of inadquate diversification, extreme concentration and lack of adequate linkages with other economic sectors, national food-processing industries are not under present conditions expanding sufficiently to contribute significantly to the creation of new employment opportunities for women. In contrast to this, transnational corporations and foreign-owned firms producing mainly for export play an important role in the employment of women in these industries in all developing regions. 113/ The conditions of employment, however, are generally not very favourable. In most cases, women workers are not included in training schemes; in particular, they are not trained in transferable skills. They are hired at the lowest legally acceptable wage and cannot expect any promotion. The fringe benefits offered comprise mainly maternity leave (the length varies between 1 and 2 months paid leave). The relatively short duration and lack of security of this kind of employment depends not only on market changes, but is a result of prevailing employment policies.

So far, the modern industrial food processing sector, both nationally- and foreign-owned, has not succeeded in establishing positive linkages with the informal sector nor in providing adequate products for local consumption. Most of its output is destined for urban consumers or export. Furthermore, it has remained isolated from the rest of the economy. This is true for the majority of these kinds of industries in all of the countries studied. 114/

In spite of the currently not very promising general outlook for women's employment, the possibilities for recognizing women's present and potential contribution to the food and beverage industries are illustrated by the following quote from a country report from Asia:

113/ See, for example, UNIDO/IS.391 op.cit. and documents of the ESCAP Regional Seminar/Workshop on the Role of Young Women in Social Progress and Development, Especially in Industries, 10 to 20 May 1980.

114/ Cf. UNIDO/IS 39, op.cit.

"Women workers, although limited by physiological and physical constraints, are superior to men workers ... especially where steady work and consistent quality of end products is required. (Especially in mass production factories). With the food processing industries the consistent quality of end products is proven to be feasible with skilled women workers, foreladies and quality technicians." 115/

In the informal sector women play greater roles in food-processing than they do in the formal sector, particularly in rural areas, but also in semi- or peri-urban areas. The range of activities is based on typically female occuations such as oil pressing, fish processing, food preparation, rice-milling, baking, etc., although it should be noted that the activities which are considered typically female or male vary widely between cultures and according to economic conditions.

In developing countries the small, handicraft and traditional industrial units could constitute a strong basis for future industrialization. In some countries of Africa food-processing accounts for 58 per cent of the GDP in the manufacturing sector. It is estimated that approximately 90 per cent of these enterprises employ fewer than 10 workers. 116/ It has often been noted that:

"Every day, in millions of villages in Africa, Asia, Latin America and the Islands of the Caribbean and South Pacific, hundreds of tonnes of grains, grain legumes. starchy roots, seeds, fruit and vegetables are processed for sale into a variety of convenient food-stuffs or drinks." 117/

The following list of projects for women in the food processing sector 118/ gives some idea of the wide range of possibilities for expanding women's participation in this sector. They are grouped here by region to provide an overview of what is currently being done and as an indication of

116/ R. Johnson, op.cit., p. 60.

117/ M. Carr, op.cit.

118/ Projects cited in M. Carr, op.cit.; DP/ID/SER.A/378, op.cit.; M. Petritsch, 1984, op.cit.; ST/ECA/ATRCW/82/02, op.cit.

the kinds of skills that can be expanded upon in order to support, organize and upgrade informal sector activities and to promote formal sector enterprises as well:

(a) Africa: Bacon factory in Kenya; bakeries in Kenya and Botswana; factory for salting and drying fish in Senegal; fish and gari processing in Ghana; oil processing in the United Republic of Cameroon, Sierra Leone, Burkina Faso and Nigeria; palm wine making in Nigeria; sugar refining in Sudan.

(b) Asia and the Pacific: Pappad rolling and ready-to-eat infant food mix in India; puffed rice, solar-dried coconut, and spices and pickles in Bangladesh; banana chips in Papua-New Guinea.

(c) Latin America: Coconut sweet in Guyana; corn and cheese biscuits, fruit and vegetable preserving and mango pu ée in Honduras; vegetable processing cooperative in Panama.

A closer analysis of these projects and the experience gained in their planning and implementation, although this extends beyond the limits of the present study, could provide the basis for further action by national and international agencies.

Case study of a food-processing co-operative

This examination of the food-processing sector concludes with a case study of a small-scale industrial development project that was designed to promote increased production and better distribution of food products, thus raising the standard of living in the area, while at the same time promoting greater participation of women in this industry [119/].

The following summary is based on a project report prepared by the local UNDP Office in 1983, when the project was under way. The final report on the project has not yet been received. While some of the positive features of this project are primarily applicable to small-scale industry projects, others are equally relevant for medium- and large-scale indutrialization projects with components for women.

119/ See M. Petritsch, 1984, op.cit., pp.63-69

"Company for Food Production, Processing and Distribution in the Province of Colon (Panama)"

Project background

An essential feature of this project is that it is an integral part of the country's development programme, one component of which is the development of the Province of Colon, including the expansion of its infrastructure and the provision of training and creation of employment opportunities with particular attention to the female population.

This project, which was sponsored by the Government of Panama and jointly financed by the Government and the Voluntary Fund of the United Nations Decade for Women, was carried out under the auspices of an inter-ministerial committee. It comprised two inter-connected self-managed cooperative enterprises, one for the processing and distribution of food products and the other for raising the crops which provide the inputs for the food processing enterprise. A third - a consumer cooperative - was foreseen. The initial target groups of the project were two groups of 45 women each, one urban and one rural. The women were all unemployed heads of household.

This intersectoral project followed an integrated strategy, working towards the achievement of numerous developmental goals, both economic and socioeconomic.

Project objectives

The developmental objectives comprised:

- the inclusion of a female component in all development plans formulated at the national and provincial level;
- the integration of women in the developmenmt of the Province of Colon through participation in productive activities;
- the provision of opportunities for paid employment for unemployed women;
- the improvement of the quality of life of women and their families in the province.

119/ See K. Petritsch, 1984, op.cit., pp.63-69

The project objectives were:

- the strengthening of the Intersectoral Coordinating Committee for the Integration of Women in National Development;
- the organization and support of a group of women selected to form the two self-managed cooperative enterprises;
- the strengthening of women's groups engaged in productive activities in rural areas;
- the promotion of economic relations between urban and rural women by means of joint production activities.

Planning and implementation of the project so as to promote women's interests

The involvement of women at all levels from the project's inception in planning and implementation (including the hiring of a female expert to do the preparatory work) appears to have had a decidely positive effect on the design and the course of the project. It was supported by women from above and from below, guaranteeing the necessary political support as well as the active commitment of those directly affected.

The project was designed to expand upon existing skills among the poorer socioeconomic strata, in this case young unemployed female heads of household with some experience in food production and sale.

The establishment of the co-operatives within the larger framework of the national co-operative movement represents an integrated approach to development in so far as the various goals of the project complement and promote each other. These include the production and distribution of necessary commodities, which generates increased income and demand and has positive multiplier effects on the economy of the entire region, as well as a large number of components directed toward promoting institutional, social, legal and infrastructural change with particular attention to female-relevant factors favourable to the whole community.

The project plan considered a series of factors often neglected in planning for industrialization:

i. The training programme included, besides training in production technology, self-management and administration for small-scale industries, instruction about the legal framework of health and sanitation laws, training in maintenance and repair of semi-industrial machinery, relevant technical concepts, nutritional theory, etc. Besides the formal training programme, a system of informal training was organized, adaptable to the changing needs of the enterprise and its members. Explicit account was taken of the fact that the different levels of education and training of participants could be well utilized in organizing the co-operative for a high level of productivity and efficiency.

ii. Improvements in the physical and social infrastructure included:

- reduced daily workload through improved implements incorporated technological advances (e.g. grain mills, agricultural equipment);
- more efficient energy use through new stoves with lower wood consumption, and the plan for bio-gas production;
- raised nutritional levels in the rural area through distribution of nutritionally balance meals produced and prepared by the urban cooperative;
- improved nutrition and hygiene and reduced workload in the urban area through the establishment of a modern kitchen in the enterprise for use by the members in preparing family meals;
- expanded support services for employed women through the establishment of child-care facilities attached to the production unit;
- increased institutional support and organization to promote their interests through membership in IPACOOP (Panama's autonomous institute of cooperatives);
- expanded opportunities for social and economic contacts through establishment of urban-rural commercial contacts;
- creation of a legal basis for greater access to land through collective land ownership titles.

iii. The impact of industrialization on subsistence and women's access to food supplies for the household:

The often observed negative effects of commeracialized agriculture on the local availability of food through narrowing of the variety of crops grown, rise in prices, shipment of the entire production for marketing outside the area and loss of access to land for subsistence farming were intentionally avoided in this project through:

- increase in the area of land cultivated for food, thus no reduction in land available for subsistence agriculture;
- profit sharing between urban and rural enterprises;
- overcoming of seasonal food shortages through provision of processed foods to the rural area;
- supplying subsidized meals to the rural area.

The women in the rural cooperative have increased secure cash income without losing their traditional subsistence resources. Women in the urban cooperative have, in addition to the monetary income, access to inexpensive food supplies.

iv. Potential negative impact of the project on women:

An analysis of potential negative impact of the project in terms of loss of opportunities to earn income or loss of control over income showed that the possible reduction of women's engagement in the informal sector (selling lottery tickets, etc.) must be deemed a positive effect. The women's control over the returns to their labour was guaranteed by the organization of the enterprises in the form of co-operatives. As most of the women are themselves the head of their households, the often observed phenomenon of the expropriation of the wife's salary by the husband should not arise.

Data collection as a basis for project planning and assessment

The initiation of the project was preceded by a socioeconomic survey of the region which pointed up the extremely critical level of unemployment, the high female proportion (70 per cent) of the unemployed labour force and the fact that most were young and well-educated (75 per cent had secondary education or higher).

i. Sources of information:

Baseline data was collected on the women who form the two target groups of the project by a female expert. A wide variety of information sources were consulted. Those government reports available on economic conditions, employment, agricultural performance, etc. were taken into account by the expert who noted the lack of specific data on women's economic situation.

Other sources of information that were used include local government officials, NGOs, professionals who know the area, such as agricultural extension officers, etc., and women's organizations and other private groups working in the area.

The participatory approach of the project is again seen by the direct involvement of the target group from the project's inception in, among other things, the data collection process and provision of feed-back to them on information gained.

ii. Types of data used:

The data collected as a basis for planning and evaluation the project covered economic variables, both those necessary for general and for female-specific planning, as well as socioeconomic variables (demographic data, health conditions, education, ethnic structure, cultural patterns, legal institutions, etc.) which should be taken into consideration in planning industrial development so as to benefit the entire population but which are absolutely crucial in planning for women.

A striking feature of the report on this project was the attention paid to details important for women. For example, the expert responsible for data collection pointed out that it was unfortunate that objective data on nutritional levels (weight/age, height/age and weight/height) had not been obtained.

Evaluation of the project's effectiveness in terms of its observed impact on women

As the productive phase of the project had not yet begun at the time the report was submitted, most of the economic and some of the socioeconomic effects of the project could not be reported on. However, a number of positive effects could already be observed: growing motivation and initiative to undertake activities themselves among the members of the cooperatives; increased self-confidence in defending their project and in approaching local and national authorities to this end.

Operational aspects needing improvement

Several operational aspects of the project were critically commented upon by the expert as follows:

- too vaguely defined objectives;
- lack of an adequately detailed economic feasiblity study as to marked demand and production costs;
- necessity of changing the originally foreseen line of products, thus resulting in a delay of some months;
- difficulties at the national Governmental level preventing the formulation of firm guidelines and provision of promised financial support.

Wider applicability of this project approach to other projects

While there are evident limitations on the wider applicability of some elements of this project, which had a relatively small number of women as its target group; other aspects, such as the integrated approach to planning and the inclusion of the target group from the outset provide an example worth following in other projects.

IV. CONCLUSIONS AND RECOMMENDATIONS

On the basis of the foregoing study it can be seen that a great deal of further research is necessary on the subject of women in agro-industries in order to be able to formulate meaningful policies and appropriate industrial development strategies aimed at promoting the participation of women in agro-industries in ways that would benefit the overall development of developing countries and women's role in this development.

It is already apparent, however, that in order to be effective and, most importantly, to have a lasting effect, any measures designed to improve the participation of women in agro-industries must form an integral part of a longer-term overall development strategy. This has already been pointed out in the section on trends in women's participation in the manufacturing of agro-based products and recommendations arising directly from the analysis of these trends have been indicated at the end of each part of that section.

Women in many developing countries are presently caught between the breakdown of rural economies on the one hand and the stagnation of the modern sector on the other. Problems of landlessness and lack of employment in rural areas lead to increasing urban migration, but formal sector employment in urban and peri-urban areas is not available for most urban migrants, which forces many of them into marginal forms of employment in the informal sector. Of those women who do find employment, many are engaged in putting-out work and others are in redeployed industries, often in export processing zones, two groups of workers that are particularly subject to recurrent layoffs and unemployment.

Development strategies promoting a greater contribution of women to agro-industries

Possible solutions must be sought in the context of more self-reliant development strategies directed toward the creation of coherent national productive systems and efforts to increase regional and sub-regional integration and expand trade among developing countries. It is essential that

the growth and development of both the agricultural and industrial sectors be promoted so as to be mutually reinforcing, that the needs and contributions of both rural and urban populations be taken into consideration, that measures to promote economic growth and more equitable distribution go hand in hand rather than expecting the latter to follow necessarily from the former, that industrial development strategies balance small-scale informal sector development with the expansion of medium- and large-scale industry while strengthening the linkages within the industrial sector, and that the choice of products to be produced, while taking into consideration the present situation of the country in the world economic system, be oriented towards fulfilling the consumption needs of the population.

Policy design improving the involvement of women in agro-industries

The design of specific policies should take into account the analysis of the information presented here on women in agro-industries including the case studies of specific projects mentioned in section III, as well as the analysis of the agro-industrial sub-sector presented in the second paper prepared for the Expert Group Meeting on Women in Agro-Industries. The following questions should be asked in formulating and evaluating policies for improving the involvement of women in agro-industries:

(a) What is the growth potential of those sectors with a high share of participation by women?

(b) What is the share of women engaged in production in those agro-industrial sectors chosen for promotion?

(c) Does a proposed policy aim at changing prevailing patterns of production in small-, medium- and large-scale units? If so, what will be the direct and indirect effects on women's participation? What measures can be taken to involve women successfully in the new production patterns?

(d) If the proposed policy aims at promoting small-scale and informal sector production, what measures are envisaged to ensure adequate return on capital investment, continued supplies of inputs, availability of technological innovations to increase productivity and maintain competitiveness, infrastructural support and access to markets?

(e) If the proposed policy aims at promoting large-scale production, either based on national or foreign investment, what provisions are foreseen to ensure lasting beneficial effects for women in terms of regular wage employment? What measures can be taken to improve working conditions, including wages, hours worked, health conditions, safety measures, and to promote communication among workers, thus enabling them to assume greater control over their working environment?

(f) What vocational and technical skills will be needed for participation in the agro-industrial branches being promoted and what measures will be taken to improve women's possibilities for participation at all levels, for example, by eliminating sex discrimination in hiring and training programmes, by enabling women to learn transferable skills that increase their "employability"?

(g) What measures can be created to enable women to take a more active role in the development of agro-industries?

These questions must be considered in connection with general industrialization policy, so as to ensure that policies designed to promote women's participation in agro-industries are integrated in an overall development strategy.

Designing technical co-operation activities to promote the contribution of women to agro-industrial development

General recommendations

(a) All existing and proposed technical co-operation activities promoting agro-industries should be examined with a view towards ensuring that women and issues of concern to women are given full consideration in project planning, implementation and evalution.

(b) Women should be included as active participants in the design, planning and implementation of agro-industrial projects on all scales and in all branches so as to ensure that women's participation is not confined to

small projects in a few industrial branches but is integrated into the over-all development of countries and regions.

(c) UNIDO should co-operate in projects that involve women as equal participants promoting the use of new technologies in agro-industries so as to increase the productivity and efficiency of women's labour, both in those branches in which they are already heavily represented and in those where they are not.

(d) The capacity of headquarters and field staff of international organizations to assist Governments in the planning and implementation of agro-industrial programmes and projects so as to integrate women in a positive way should be strengthened by providing them with relevant information, e.g. by compiling and distributing detailed guidelines and organizing seminars and training courses on this subject.

(e) A clear statement of UNIDO's policies and procedures for technical co-operation in the area of the integration of women in agro-industry should be provided to Governments and non-governmental organizations in order to encourage further co-operation in this field.

(f) Adequate resources should be allocated for technical co-operation activities that promote women's participation in agro-industries in a positive way.

Recommendations on the Design, Planning and Implementation of Projects for Promoting Agro-Industry

(a) Project design considerations

i. agro-industries should be promoted in rural as well as urban areas. The involvement of women at all levels and in all areas of production, maintenance, administration and planning should also be extended to such non-traditional activities as repair of machinery, manufacturing of spare parts, etc.

ii. activities on the micro-level such as small projects or pilot schemes should be linked up with macro-level planning. Positive experience gained in pilot projects should be used in national planning to repeat successful projects in other areas.

iii. Individual projects should be incorporated into a larger framework of institutions, such as national bodies concerned with industry, trade unions, national organiztions of co-operatives, national small business associations etc., to provide mutual support and advice on legal, technical and commercial matters.

iv. Projects should be designed according to an integrated, inter-sectoral approach, taking into consideration both economic and socio-economic factors in planning, so as to be economically viable while at the same time making provisions to compensate for changes in methods of production and the use of resources so as to reduce potential negative impacts on nutrition, health, etc. and increase possibilities for positive effects on the well-being of the population in terms of increased income, improved infrastructure etc.

(b) <u>specific measures</u>

Specific measures to achieve the foregoing objectives include:

i. the identification of existing potential for further development through:
   - market research to determine unfulfilled demands,
   - surveys of resources and existing technical capabilities,
   - detection of existing production units that can be expanded upon;

ii. the compilation and distribution of manuals identifying project possibilities and containing guidelines for the establishment of agro-industries, particularly small- and medium-scale;

iii. provision of guidelines and advice for women's co-operatives and women entrepreneurs to assist them in obtaining favourable conditions for the transfer of technology etc.;

iv. training components favourable to women such as:
- on-the-job training
- mobile training units to extend continuing training programmes to women in rural and peri-urban areas,
- seminars promoting exchange of experiences and ideas between women at all levels and providing opportunities for exchange of information between planners and the affected population,
- identification of sources of technical expertise and dissemination of information regarding these sources,
- fellowships for training women at interregional technical centres;

v. emphasis on the provision of opportunities for secure regular wage employment, particularly within the framwework of co-operatives, rather than merely training for self-employment, which tends to be subject to fluctuations of market demand and supply as well as seasonal irregularities;

vi. the establishment of multi-purpose centres. preferably a network of them, which can funtion as production units, training centres, centres for communication and exchange of information, and as locations for supportive services for women such as health care, day-care centres, etc.;

vii. provision of supportive services for employed women connected to the place of employment so as to reduce absenteeism at work.

(c) Data collection as a basis for project planning and assessment

Greater attention must be paid to the inclusion of data relevant to women's economic and social role in project design. As the sources and methods used in collecting the data influence the type and content of data obtained, it is essential to consider both macro- and micro level data from a variety of sources in order to achieve an adequate basis for planning.