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PARTICIPATION OF WOMEN IN MANUFACTURING: PATTERNS, DETERMINANTS AND FUTURE TRENDS REGIONAL ANALYSIS, ESCAP REGION

TF/RAS/91/E10

REPORT*

prepared by

Integration of Women in Industrial
Development Unit

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* The opinions expressed in this document are those of the author and do not necessarily reflect those of the UNIDO Secretariat. This document has not been edited.

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Table of Contents

Tables and Figures

Introduction

Chapter I

Chapter II

PREFACE

This study is part of UNIDO's efforts to establish a more systematic approach to data collection and analysis to provide a sound base for identifying and designing activities which will improve the integration of women in industrial development. In a wider context, the study represents UNIDO's contribution to regional preparations for the Fourth World Conference on Women to be held in Beijing in 1995. Integrated programmes proposed in this study will provide an input to the formulation of a regional plan of action to be discussed at the Second Asia and Pacific Preparatory Conference in Jakarta, Indonesia (7 to 14 June 1994).

The frame of reference for the study was provided by global analysis of patterns of women's economic/industrial participation contained in 1992/93 UNIDO study on "Women in Manufacturing: Participation Patterns, Determinants and Trends" (UNIDO, October 1993). The present study on women in the Asia and the Pacific region benefited from the methodology developed for the global analysis but the conceptual model has been adapted to reflect women's concerns specific to this region. The methodology represents a valid contribution to the analysis of women's economic participation and together with the proposed programmes constitute the main output of this project. In addition, a separate report has been prepared to address in more detail problems associated with the collection of gender sensitive indicators in the region.

The study, which was generously supported by the Government of Japan, has been implemented by the Integration of Women in Industrial Development Unit with the assistance and cooperation of the United Nations Economic Commission for Asia and the Pacific (ESCAP). The work involved in the study was shared between an international consultant (Pavla Jezkova), a regional consultant (Lorraine Corner) and a UNIDO data processing team (Lyla Mehta, Claudia Barberis and Stefan Bosnjakovic). A two day workshop was jointly organized by UNIDO and ESCAP in Bangkok, Thailand, 18-19 April 1994. Selected experts/observers from the region (Farida Akther from Bangladesh, Tae-hong Kim from Korea, Swarna Jayaweera from Sri Lanka and Swasti Mitter, UNIFEM consultant) were invited to the workshop to review the preliminary findings of the study and to provide substantive inputs for the formulation of strategies and plans of action for more efficient and equitable use of human resources in economic and industrial development in the region.

INTRODUCTION

The role of women in development has been the focus of international and national agencies' programmes since the Mexico City Conference in 1975. This trend has been reinforced by the need to examine issues of women's economic contribution in the wider context of human resources development. The lack of information and understanding about the economic activities and conditions of women has been one of the major stumbling blocks in formulating policies and monitoring progress towards efficient use of human resources. Women count - but are not counted.

> *"Economic activity encompasses a wide range of work and renumeration possibilities which have important implications for the economic and social well being of a nation, and data depicting the dimensions of these undertakings provide indications of individuals' contribution to national development through participation in these activities." (Methods of Measuring Women's Economic Activity, United Nations, N.Y. 1993. p.6).*

Revision of definitions to capture the diversity of women's involvement in development has helped a great deal to make women's contribution more visible. Also, adoption of a "gender-based" perspective has increased the understanding of the different social and economic factors which shape the roles of women and men and are primarily responsible for the differences between women's and men's achievements and participation in development.

The purpose of social and economic development, as defined in the 1990 Human Development Report, is to offer people more options. One of the most important options is access to income through employment. The evidence so far available shows that industrial development is a necessary condition for economic development and employment growth. From the economic point of view, industry related activities have proved to have a higher income-generating capacity than agriculture related activities. If employment is used as a measure of economic contribution, women's participation in industry related activities is an important aspect of women's role in development.

Access to income through employment is of a particular interest to women. Wage employment does not only enhance women's economic status, but also their social status. On the other hand, formalized employment may create a conflict between the different functions performed by women. Thus women's economic role should be analyzed in the following context:

> *Enhancing women's participation in the economy is beneficial to women, the family and society as a whole but benefits derived from increased participation of women in wage employment should not be at the expense of women's quality of life. Any additional burden on women resulting from the increased participation should be minimized and shared equally among men and women.*

In most developing countries, a strong representation of women in the industrial labour force is still rare. This is why their role in industrial development attracted less attention than their

role in agriculture or the social domain. This neglect has obscured two important relationships. The first is the relationship between industrial development and women's participation in the manufacturing sector. The second is the relationship between women's wage employment and social development. Countries where industrialization has been rapid and successful show high participation rates of women in manufacturing employment. At the same time, women's access to wage employment has been accompanied by an improvement in social, educational and demographic indicators. Countries with the highest proportion of women in the modern sector (of which manufacturing has been an important employer of female labour) have the lowest illiteracy rates, the longest life expectancies and the lowest fertility rates.

The 1985 Nairobi Forward Looking Strategies for the Advancement of Women to the Year 2000 has presented major challenges to the role and status of women in social and economic development of their nations. The persistence of female-male gaps in human resources development poses an important challenge and offers an opportunity to accelerate economic and social progress by investing in women. Making economic structures and policies more responsive to women's needs will lead to a more efficient use of the presently underutilized large part of human capital.

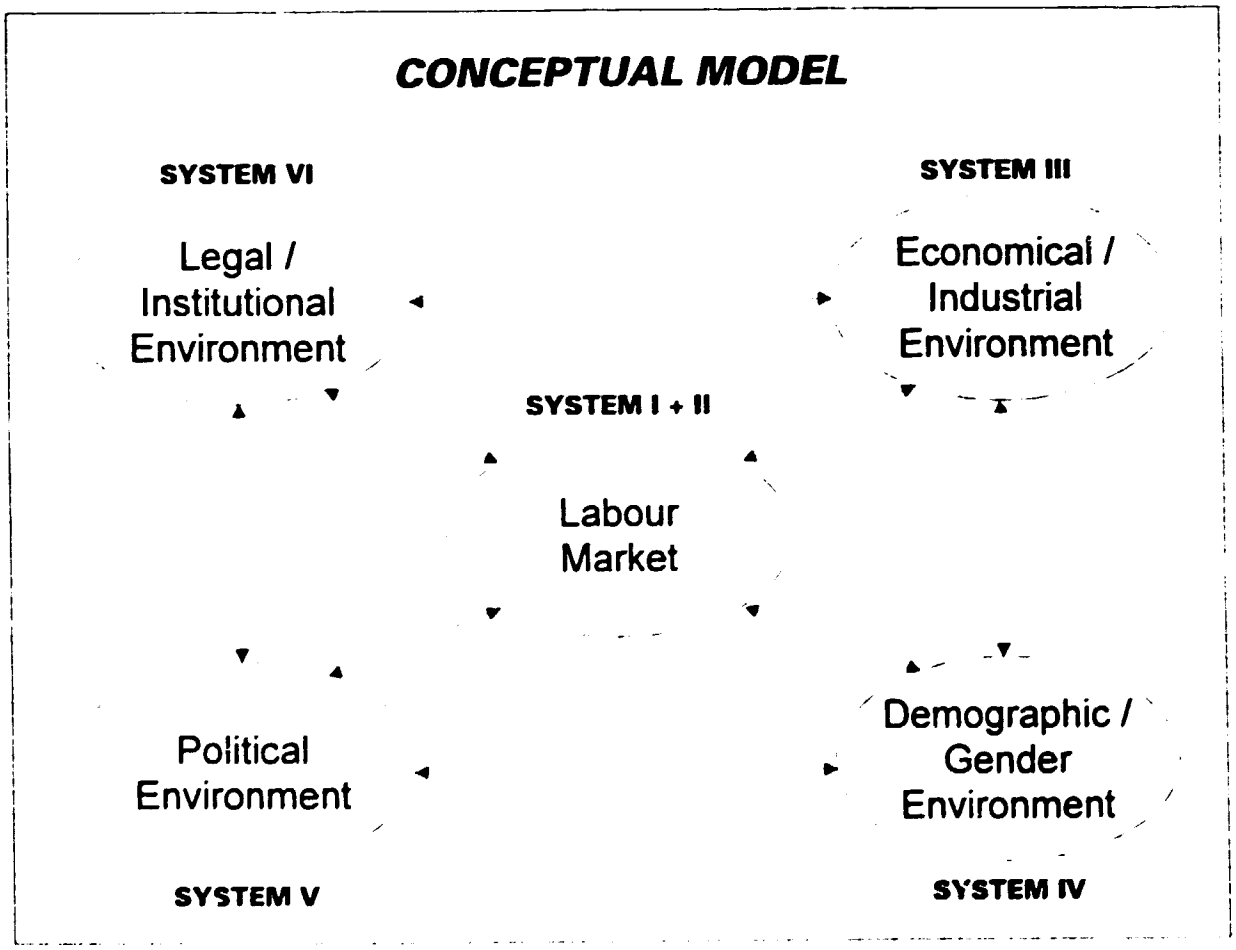
The main objective of this study is to arrive at a more integrated programme of action which will have a greater impact than fragmented individual activities. For this purpose, a systematic approach was adopted for data collection and analysis to provide a base for decision making about areas which need to be addressed if the participation of women in economic/industrial development is to be enhanced and put on equal footing with that of men. The study is a follow up of UNIDO's previous work done in this field which analyzed emerging global patterns of women's economic/industrial participation. The approach adopted in the global and regional analysis (see Box 1 and Annex A) is based on a conceptual system model which reflects the interplay of social, economic, political and institutional factors affecting male and female participation in the economy and the manufacturing sector in particular (see Figure 1). Table 1 gives an overview of the original set of indicators and variables representing these sub-systems.

This integrated approach allows a more comprehensive assessment of the characteristics of female participation. Use of a systematized and standardized country data sets facilitates comparative analysis of a wide range of countries at different stages of development and to some extent compensates for the lack of time series data in the model. The methodology is similar to an approach adopted in an ESCAP study on Women's Economic Participation in Asia and the Pacific (*Khoo in ESCAP 1987*) but takes the analysis one step further. By using multivariate analysis, country groups with similar patterns across the relevant systems are identified and projected against expected economic and industrial trends. In this context, constraints for the identified groups of countries are identified and programmes of action proposed to sustain and enhance the contribution of women to the economic development foreseen in the region up to year 2000.

The main sources of data used in the study were: the UNIDO Global Econometric Database; the database for the ILO Year Book of Labour Statistics; the database for the ILO Year Book of Labour Statistics; the data base for the UNESCO Statistical Yearbook; the UN Micro computer Data base on Women's Indicators and Statistics (WISTAT) (Refer to Annex B).

Nevertheless, the lack of data availability, most notably gender disaggregated data, have caused limitations in the use of the conceptual model. The lack of data availability and reliability cause limitation in the use of the conceptual model. To compensate for this limitation statistical analysis is supplemented by qualitative information from relevant literature. Nonetheless, a number of indicators and countries had to be excluded from the analysis. Some countries were also excluded because of the limited relevance of this type of analysis to their situation at this point in time. This does not mean that policy makers in those countries cannot learn from the experience of countries covered in this report. Issues related to the availability of gender sensitive indicators at regional and national level are addressed in a separate report.

FIGURE 1



Box 1

METHODOLOGICAL FRAMEWORK

The methodological framework consists of three parts: a conceptual model, identification of variables and indicators, and statistical analysis. The framework is an adapted approach developed by UNIDO for the analysis of industrial systems and sectoral typologies.

A. Conceptual model of women's economic/industrial participation

The underlying premises for the analysis are as follows:

1. Women's economic participation is determined by inter-dependent relationships between a number of systems: economic, social, demographic, traditional culture/religion, political, and legal/institutional.
2. Each system may be represented by a number of variables. The interactions of these variables have a different impact on economic participation of men and women in different age groups, income groups, social groups and household units.
3. Variables within one system may strengthen/weaken/ neutralize The impact of variables in other systems.

B. Identification of variables and indicators

Empirical research, surveys and studies have identified issues relevant to the examination of women's role in economic/industrial development. These issues were expressed as variables and classified under the relevant systems. Statistical indicators were chosen to quantify and systematize information pertaining to the variables. Selection of these indicators relied heavily on conceptual work undertaken by the UN system with regard to gender sensitive statistics characterizing women's economic role. Table 1 shows the list of variables and indicators grouped under the relevant systems. An assessment of the indicators at a country and regional level helped to delineate different patterns of male and female labour force participation in a given time.

C. Statistical tools and analysis

Statistical tools facilitated cross-country comparative analysis of large sets of data which gave a more complete picture of factors affecting the economic role of women. Means, correlations and regressions were calculated to determine the strength/weakness of indicators as well as their relationships. Multivariate statistical techniques were used to approximate groupings of countries sharing similar characteristics of women's economic participation. Results of statistical analysis were verified by qualitative information.

Table 1 **LIST OF VARIABLES AND INDICATORS**

I. LABOUR FORCE CHARACTERISTICS	
Variable 1.1 Size and distribution of Economically Active Population (EAP)	
1.1.1	Women's economic activity rate
1.1.2	Index male/female disparity in economic activity rate
1.1.5	Women's participation rate in the agricultural sector
1.1.6	Index male/female disparity in EAP participation rate in agriculture
1.1.7	Women's participation rate in the tertiary sector (commerce and services)
1.1.8	Index male/female disparity in EAP participation rate in the tertiary sector
Variable 1.2 Size and distribution of employment	
1.2.1	Women's share in total employment
1.2.2	Index of male/female disparity in employment rate
1.2.3	Women's employment rate in non-agricultural activity
1.2.9	Women's employment rate
Variable 1.5 Occupational Status	
1.5.1	Women's participation rate in professional and technical positions (category 01/1)
1.5.2	Index of male/female disparity in category 01/1
1.5.4	Index of male/female disparity in category 2
1.5.8	Index of male/female disparity in category 8
II. INDUSTRIAL LABOUR FORCE CHARACTERISTICS	
Variable 2.1 Size and distribution	
2.1.1	Participation rate of women in manufacturing (EAP)
2.1.2	Index of male/female disparity in EAP participation rate in manufacturing
2.1.3	Women's share in total manufacturing employment
2.1.4	Index of male/female disparity in manufacturing employment
2.1.5	Rate of women's manufacturing employment in the food, beverages and tobacco sub-sector (31)
2.1.6	Index of male/female disparity in manufactuirng employment rate in sub-sector 31
2.1.7	Rate of women's manufacturing employment in the textile, garments and leather sub-sector (32)
2.1.8	Index of male/female disparity in manufacturing employment rate in sub-sector 32
2.1.9	Rate of women's manufacturing employment in metal, machinery and equipment production (38)
2.1.10	Index of male/female disparity in manufacturing employment rate in sub-sector 38
2.1.11	Participation rate of women in manufacturing employment
III. ECONOMIC AND INDUSTRIAL ENVIRONMENT	
Variable 3.1 Level of economic development	
3.1.1.	Logarithm of GDP/capita [GDP / national population; indicator for the statistical analysis calculated as follows: [(minX - X (=GDP/capita;log)) / (minX - maxX)]
3.1.2	Share of the agricultural sector in GDP
3.1.3	Share of the tertiary sector in GDP
3.1.4	Share of MVA in GDP
3.1.5	Share of exports in GDP
3.1.8	Share of government expenditure in GDP
3.1.9	GDP / capita

* Using the loganthmic values of GDP and MVA per capita leads to a more balanced distribution between countries, whereas otherwise results would be distorted by the considerable differences between rich and poor countries.

Table 1 **LIST OF VARIABLES AND INDICATORS**

Variable 3.2 Level of industrial development	
3.2.1	Logarithm of MVA/capita
3.2.2	Share of manufactured goods in total exports
3.2.3	Share of the food and textile sub-sectors (31 and 32) in total MVA
3.2.4	Share of metal, machinery and equipment products (38) in total MVA
3.2.5	MVA / capita
Variable 3.3 Infrastructure	
3.3.2	Length of road per 1000 square kilomentres
3.3.3.	Number of radio receivers per 1000 inhabitants
3.3.4	Government expenditure on basic human needs (%)
3.3.5	Government expenditure on education (%)
IV. SOCIAL AND DEMOGRAPHIC CONDITIONS	
Variable 4.1 Size and distribution of population	
4.1.1	Urbanization population (%)
4.1.3	Index of male/female disparity in life expectancy at birth
4.1.4	Total fertility (births per woman)
4.1.5	Mean age at first marriage for women
4.1.8	Female headed households (%)
Variable 4.2 Access to education	
4.2.1	Index of male/female disparity in literacy rates
4.2.2	Female primary enrolement rate
4.2.3	Index of male/female disparity in primary school enrolment rate
4.2.4	Female secondary enrolment rate
4.2.5	Index of male/female disparity in secondary school enrolment rate
4.2.6	Female tertiary enrolment rate
4.2.7	Index of male/female disparity in tertiary school enrolment rate
V. POLITICAL ENVIRONMENT	
Variable 5.1 Distribution of power	
5.1.1	Wome's share in parliamentary representation (%)
5.1.2	Women's share in cabinet representation (%)
VI. LEGAL AND INSTITUTIONAL FRAMEWORK (qualitative = dummy variables)	
Variable 6.1 Legal protection *	
6.1.1.1	Ratification of ILO Conv. 100 - Equal renumeration, 1951
6.1.1.2	Ratification of ILO Conv. 111 - Discrimination (Employment and Occupation),1958
6.1.1.4	Ratification of the International Convention on elimination of all discrimination against women (CEDAW)

* The sources for this variable are Ratifications of ILO Conventions based on the following scale:

0 - not ratified / not indicated

2 - ratified shortly after

1 - ratified within the next 10 years

CHAPTER I. PATTERNS AND DETERMINANTS OF WOMEN'S ROLE IN MANUFACTURING

The following sections interpret the main characteristics of the six systems through the selected gender sensitive indicators. In order to include as many ESCAP countries as possible in the system analysis, the original set of desirable indicators presented in Table 1 was reduced to 13 (see Table 2). Even this reduced set of indicators has large data gaps and excludes countries for which no data on neither of the 13 indicators were available. Examples from countries with wider data coverage are included as well as findings from relevant research and surveys conducted in the region to enlarge the scope and time perspective of the analysis. The last section in this chapter summarizes the main findings from this and other studies regarding determinants of women's participation in economic and industrial activities.

1.1. WOMEN'S PARTICIPATION IN THE ECONOMY AND MANUFACTURING

a) Labour force characteristics

Approximately 551 million women are estimated to be economically active in the region, representing about one third of the total labour force[1]. There are conspicuous differences between labour force participation rates of men and women for the region as a whole and for groups of countries in particular. Women's labour force participation rates are much lower than those of men for all countries in the region. The degree of disparity is highest in South Asian countries with the exception of Sri-Lanka (see Figure 2). China, Mongolia, Thailand, and Vietnam are countries with the lowest degree of disparity. These are also countries where female participation rate exceeds 50 per cent. In the Newly Industrialized Economies (NIEs), Southeast Asia and Sri Lanka, the participation rate is near or above 30 per cent. In Bangladesh and Pakistan, on the other hand, women's participation rate is only 7 per cent. Although the variations are distorted by problems related to the estimation of women's economic activities, they reflect the nature of women's work and its social evaluation in these countries.

Women's labour force participation varies by age (*Asian Development Bank, 1993. p.90-93*). On the whole, women in the age category 15-24 have the highest participation rates. The variation between age groups is less pronounced in countries with either high or low overall participation rates. Over the last twenty years, the participation pattern by age has changed, especially in the industrialized countries and the NIEs. More women in the child bearing age have entered the labour force since the 1970s. This has contributed to the increase in female economically active population in most of the countries during the last twenty years. Some of these increases are also attributed to improved statistical definitions and methods in data collection.

The sectoral participation differs by gender, but the difference is less pronounced at the regional than country level (see Figure 3). Almost 40 per cent of the economically active female population in the region is engaged in agriculture and about the same percentage in services. Less than 20 per cent is in industry related activities. Men are more likely than women to be active in industry, although the regional average of their participation is not

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[1] Excluding Central Asian Republics and some islands

Table 2 System Characteristics of Selected Indicators for all Countries

Country	System I		System II	System III					System IV			System V	System VI
	1X1X1	1X2X3	2X1X1	3X1X4	3X1X5	3X1X9*	3X2X3	3X3X5	4X1X4	4X2X2	4X2X4	5X1X1	6X1X1X4
Regional Means	36%	71%	18%	17%	51%	6	37%	14%	396%	99%	29%	6%	42%
Industrialised Economies													
Australia	52%	96%	10%	16%	23%	12	24%	7%	1.9	125%	49%	7%	1
Japan	41%	92%	22%	34%	16%	13	11%	17%	1.7	126%	61%	2%	1
New Zealand	40%	90%	10%	20%	36%	8	46%	13%	2	124%	59%	16%	1
Newly Industrialised Economies													
Hong Kong	37%	99%	31%	19%	166%	9	39%	15%	1.4	131%	54%	6%	0
Korea, Republic of	31%	80%	27%	38%	39%	4	21%	20%	1.7	130%	52%	2%	1
Singapore	38%	109%	33%	29%	328%	9	7%	19%	1.7	123%	46%	5%	0
Taiwan	40%	96%	25%	35%	67%	4	20%	15%	2	124%	54%	6%	
Transitional Economies													
Cambodia	45%								4.6		12%	9%	0
China	73%	62%	13%	22%	46%		42%	15%	2.4	113%	20%	21%	1
Lao, PDR	59%								6.7	81%	12%	9%	1
Korea, Democratic									2.5	78%		20%	0
Mongolia							63%		5	57%		2%	1
Viet Nam	74%		14%	23%	47%		40%	14%	4.3	98%	12%	9%	1
Southeast Asia													
Indonesia	34%	44%	11%	23%	22%	7	30%	10%	3.5	135%	24%	9%	1
Malaysia	27%	75%	21%	28%	91%	2	21%	15%	4	103%	40%	5%	0
Philippines	47%	69%	11%	25%	28%	6	51%	17%	4.3	121%	29%	9%	1
Thailand	51%	35%	11%	24%	42%	1	40%	19%	2.6	105%	19%	4%	1
South Asia													
Afghanistan									6.9	23%		3%	0
Bangladesh	40%	10%	33%	9%	13%	2	54%	11%	5.1	70%	9%	10%	1
Bhutan				8%	12%	1		12%	5.9	19%	1%	1%	1
India	23%	87%	22%	18%	8%	3	28%	3%	4.2	82%	18%	7%	0
Maldives	11%		37%					18%	6.5			4%	0
Myanmar	44%	53%	14%	10%	14%	2	51%	14%	4.5	98%	24%	7%	0
Nepal	23%	87%	22%	3%	14%	2	28%	11%	5.9	47%	8%	3%	1
Pakistan	7%	28%	11%	18%	14%	4	46%	3%	6.7	37%	9%	1%	0
SriLanka	32%	51%	15%	19%	37%	4	68%	9.00%	2.7	105%	27%	5%	1
Pacific Islands													
BruneiDarussalam	24%			10%	159%	15			3.4	136%	35%		0
CookIslands	29%		5%										
Fiji	15%	99%	9%	10%	55%	2	42%	21%	3.2	136%	29%	9%	0
FrenchPolynesia	31%			8%	6%	11			3.6	123%	54%		0
Guam	40%	100%	3%						2.9	136%	39%		0
Kiribati						2			3.8			0%	0
Macau	41%	92%	46%						1.5	106%	31%		0
Nauru													
NewCaledonia	31%		4%	5%	42%	1			2.9	129%	59%		0
Niue	23%		2%										
PapuaNewGuinea				8%	51%	7		15%	5.2	72%	6%		0
Samoa				18%	29%	7			4.7				1
Solomonislands				3%	67%	6		22%	5.8	75%	7%	0%	0
Tonga	22%		37%	4%	27%	1		16%	5.2			0%	0
Tuvalu													
Vanuatu	45%	53%	14%	7%	27%	1	42%	13%	5.3	108%	11%	0%	0
West Asia													
Iran	5%	19%	16%	8%	18%	2	29%	19%	6.5	100%	32%	1%	0

Indicators used	
1.1.1	Women's economic activity rate
1.2.3	Women's employment rate in non-agricultural activity
2.1.1	Participation rate of women in manufacturing (EAP)
3.1.4	Share of MVA in GDP
3.1.5	Share of Exports in GDP
3.1.9	GDP/Capita
3.2.3	Share of the food and textile sub-sectors in total MVA
3.3.5	Government expenditure on education (%)
4.1.4	Total fertility (births per woman)
4.2.2	Female primary enrolment rate
4.2.4	Female secondary enrolment rate
5.1.1	Women's share in parliamentary representation
6.1.1.4	Ratification of CEDAW

* 1000 U S $ /Capita

Figure 2 M/F Disparity index of economic activity rate for selected ESCAP countries

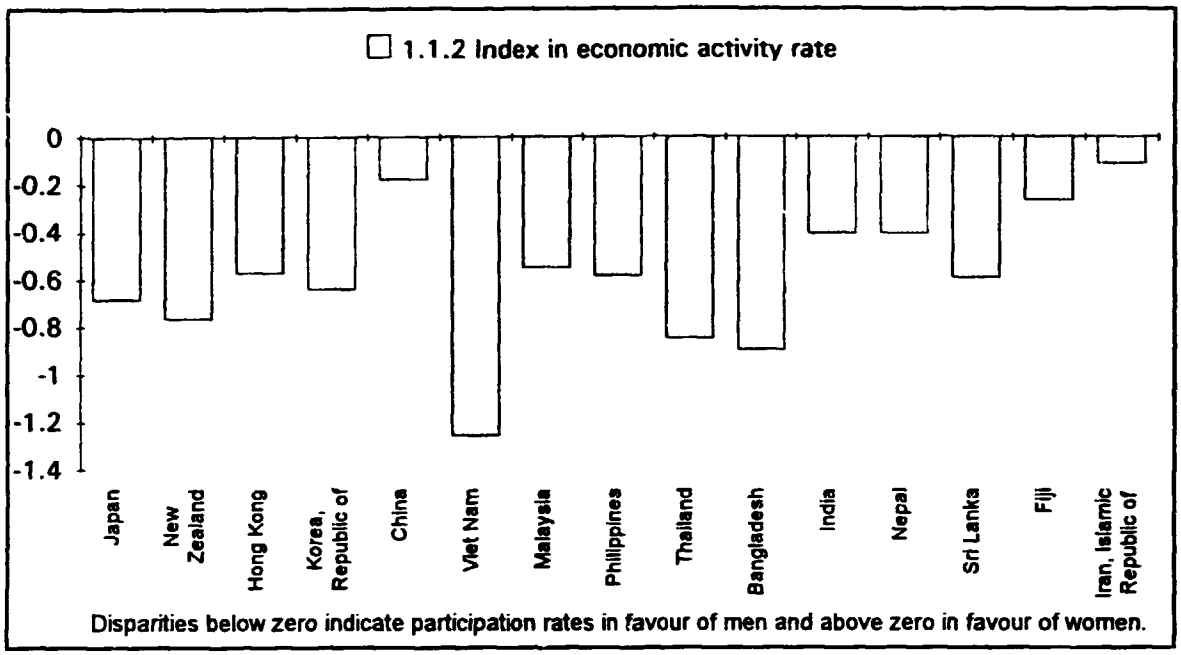
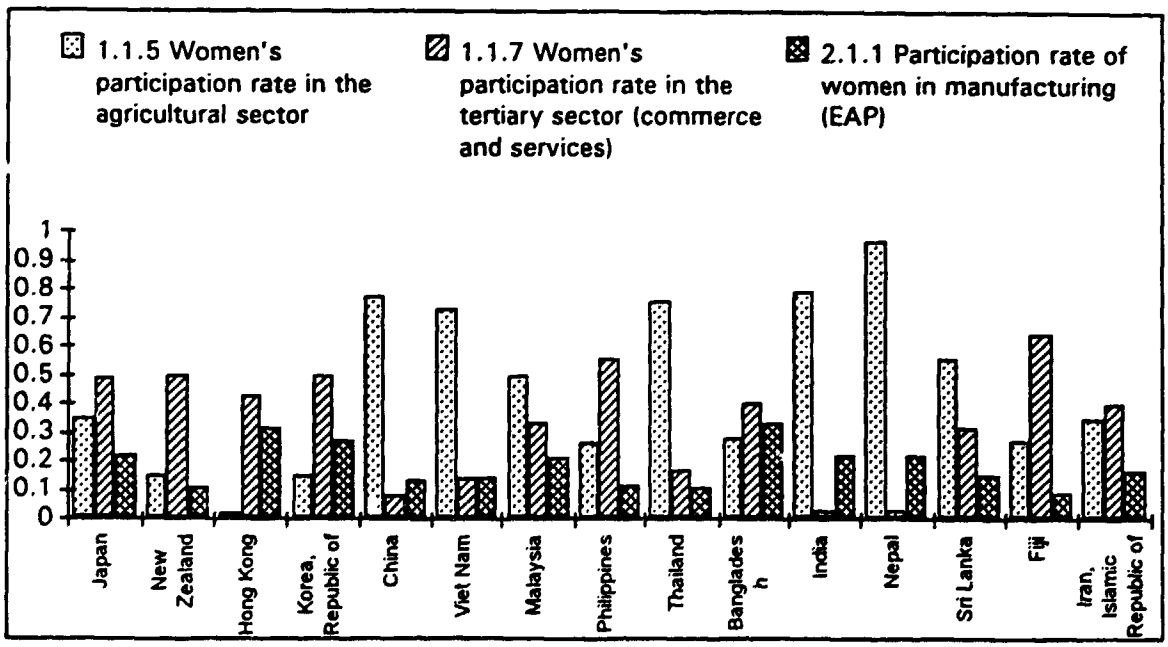


Figure 3 Sectoral distribution of female economical active population



much higher than that of women. Participation of both men and women in agriculture related activities has declined over the last two decades, but generally at a slower rate for women than men. The pace of change is related to industrial growth and rate of urbanization. Participation rate of women in agriculture is still high, over 50 per cent, in Indonesia, Thailand, Pakistan and Iran.

Problems with definitions of informal sector and measurements of its activities makes analysis of women's participation in this sector difficult. On the basis of evidence provided from other studies (*Boyle 1988, Mitter 1986, 1990, 1994, Standing 1989*) and information available on female economically active population and employment in ILO official statistical publications, some general remarks can be made. In the developing countries of the region, economically active women who do not find employment and most of those who are self employed are found in the informal sector. They outnumber men in this sector since a larger number and proportion of the male labour force is in formal wage employment (defined here as employees). Women also tend to constitute a larger proportion of the unpaid family labour. Most of these women are engaged in agricultural activities, cottage type of industries and handicrafts.

Women's involvement in the informal sector has increased during the 1980s as a result of economic recession and structural adjustment but also as a result of casualization of employment due to increased competition in production. Reduced job opportunities in the formal sector and the need for an additional source of family income has forced many women into informal sector activities. On the other hand, introduction of flexible manufacturing and growth in the service sector has lead to pressures for flexible labour force for which women seem to be the preferred choice. Many married women and mothers, especially in the industrialized countries, have found new job opportunities in this way, albeit under less favourable employment conditions. Feminization of labour is partly the result of these trends.

The tertiary sector is not only the largest employer of female labour in the region, but is also a typically female domain. Recent trends in the industrialized countries and the NIEs indicate that the tertiary sector is also becoming an important employer of the male labour force. This is a result of structural changes in the economy as a whole and the manufacturing sector in particular. Many of the high value added processes have been separated from manufacturing and moved into the service sector. Most of these processes are associated with skilled and highly skilled labour force, which consists mainly of men.

The high number and participation rate of women in the tertiary sector is reflected in the occupational division between men and women. Many service related occupations such as nurses and teachers are perceived as a typical female domain. This accounts for the relatively strong position of women in the category of professional and technical workers even in countries with low levels of female participation in the economy (see Figure 4a and 4b). Paradoxically, the existence of gender barriers in these countries creates an effective demand for female teachers, nurses and doctors to provide for the needs of women as a separate group. On the other hand, administrative and managerial positions are the male domain.

b) Industrial labour force characteristics

In Asia, particularly in Southeast and East Asia, women have entered the industrial labour force on much larger scale and much faster than in any other developing region in the world.

Figure 4a Participation rate of female labour force in occupational categories 0/1 and 2

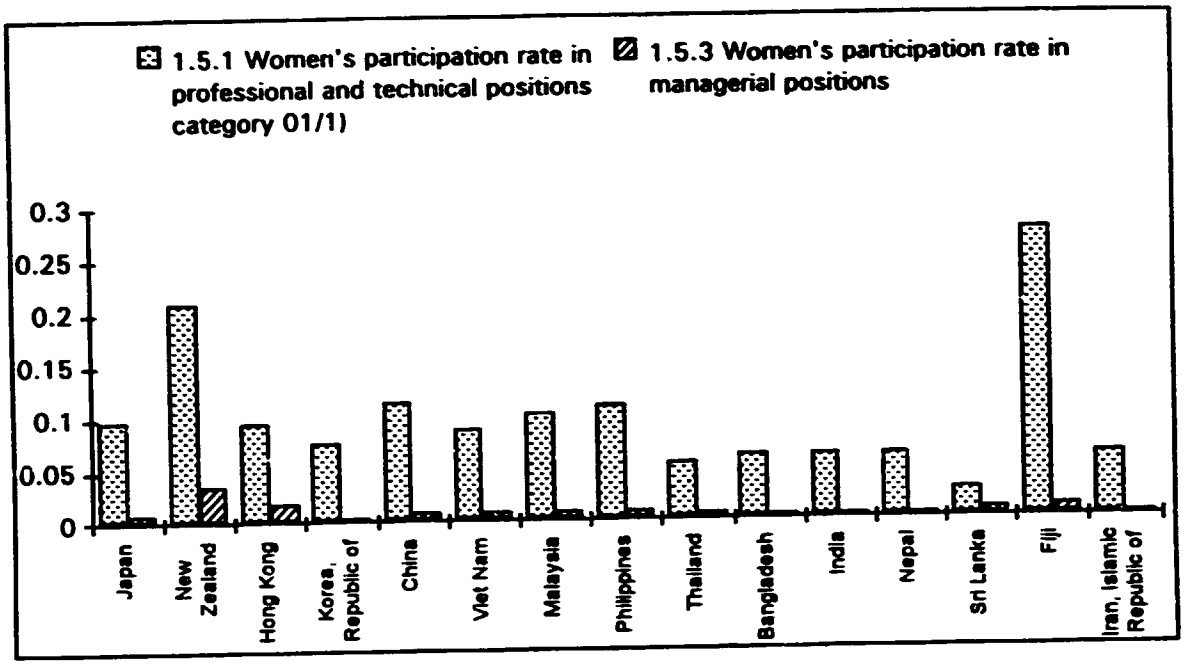
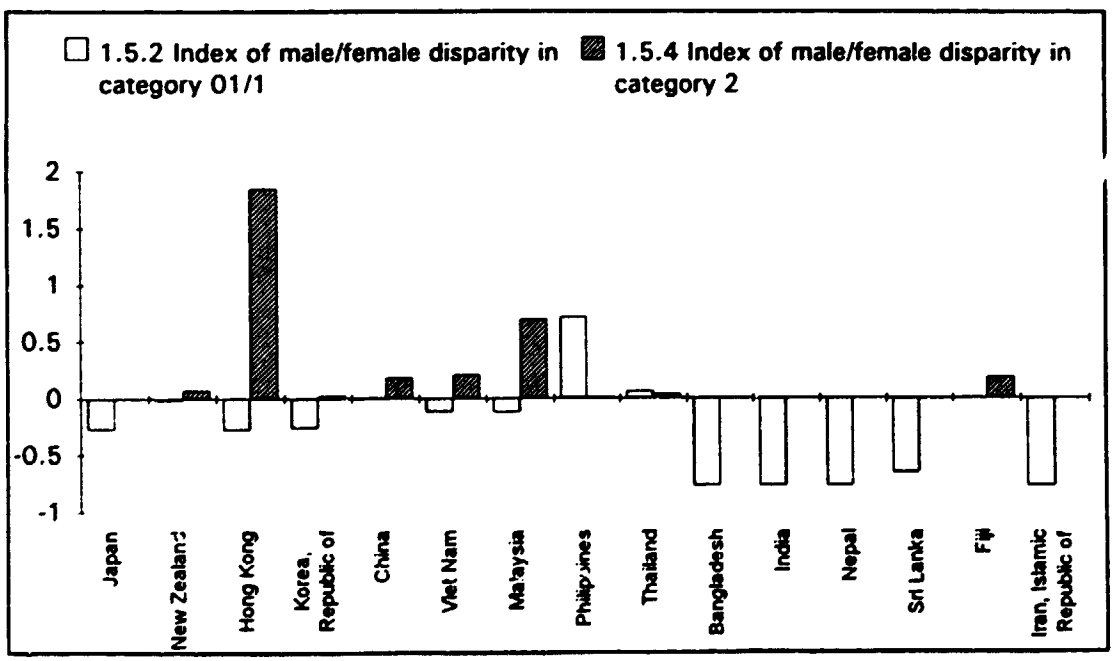


Figure 4b M/F disparity indexes for female participation rates in occupational categories 0/1 and 2



The growth of female industrial employment in the NIEs started in the 1960s and was followed by the group of the Association of South East Asian Nations (ASEAN) in the 1970s. During this period, with only a few exceptions, female employment in the manufacturing sector as well as service sector grew faster than male employment in these countries. For the region as a whole, about 33 per cent of the female population is economically active and the same proportion of female employees is found in the manufacturing sector. Women's participation rate in manufacturing is only one third compared to that of men (see Figure 5).

Due to the lack of data on the informal sector, as well as gender specific employment data, these figures mask some important patterns and trends observed in different countries in the region. In countries with a large female population in rural areas women's involvement in activities which could be classified as manufacturing is not counted. This is because there often are supplementary to the main agricultural activities. In addition, the spread of sub-contracting to home workers which reduces producers' fixed cost has distorted the recorded number of women in manufacturing both in rural and urban areas.

In the industrialized countries and the NIEs, the importance of the manufacturing sector as an employer of female labour has declined or is declining. The shift to capital and technology intensive manufacturing has led to shedding labour-intensive production and manufacturing branches with high female labour content to other countries. It is thus likely that demand for female industrial workers will increase in other countries of the region as they try to emulate the success of export-led industrialization of the NIEs. The ASEAN group of countries is one example of this trend which has now also been observed in Bangladesh, China, and Vietnam.

Gender specific data on the distribution and occupational structure of the manufacturing labour force and employment are scarce. Such data and information as are available confirm the assumption that women industrial workers are concentrated in a limited number of labour-intensive industries and low skilled jobs. Rates of female employment in light industries, especially food and textiles and garments, are high for the region as a whole but the distribution varies across countries (see Figure 6).

From studies done on women in the textiles and garment industry and in electronics in a number of Asian countries (*UNIDO 1993, ESCAP/ILO-ARTEP 1992, ESCAP 1987, Heyzer 1988*) women represent between 65 and 90 per cent of the labour force in these branches. These studies also show that the majority of women are at the lower end of the occupation scale in unskilled jobs. Only about five percent are found in professional and technical positions and less then two per cent in administrative and managerial occupations. These figures are much lower than those for the service sector. This indicates that the manufacturing sector has so far offered few opportunities for women's career advancement.

1.2. ECONOMIC AND INDUSTRIAL ENVIRONMENT

Characteristics of the economic and industrial system try to capture the demand factors for women's economic and manufacturing participation. Comparison of main characteristics of the economic and industrial system across countries provides, to some extent, a dynamic context for the analysis. Identified development patterns may be interpreted as representing different stages in the development process and related to the different economic role women

Figure 5 M/F disparity index of participation rates in manufacturing

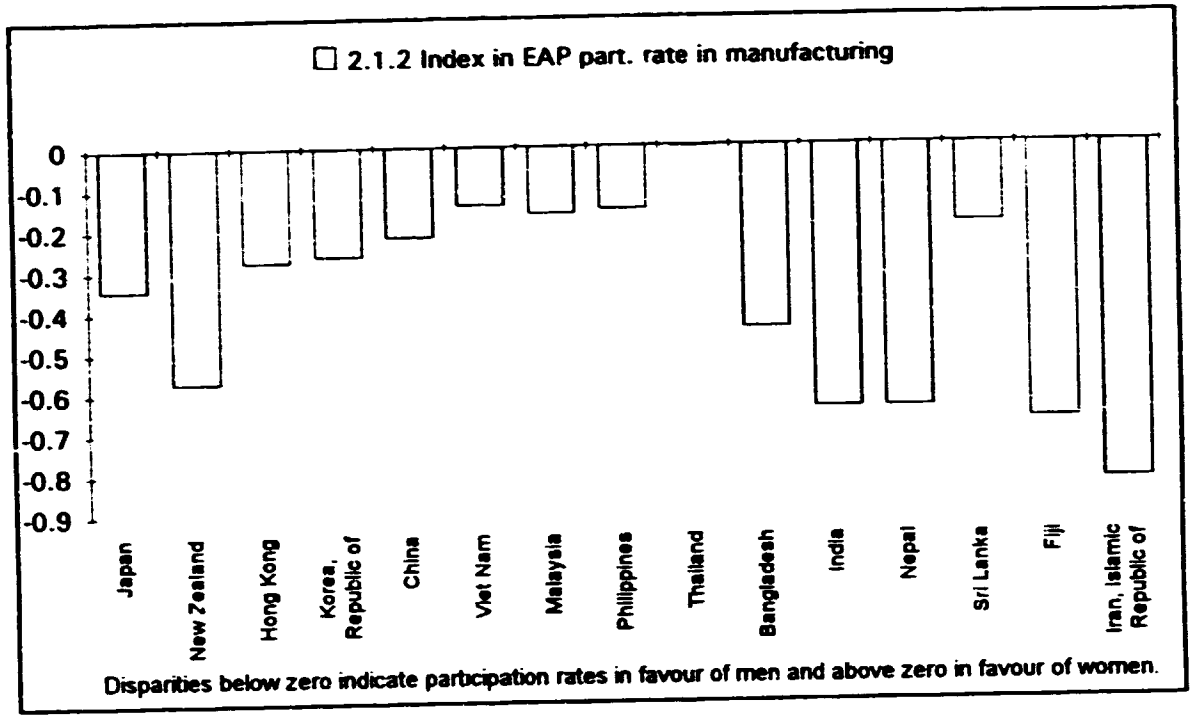
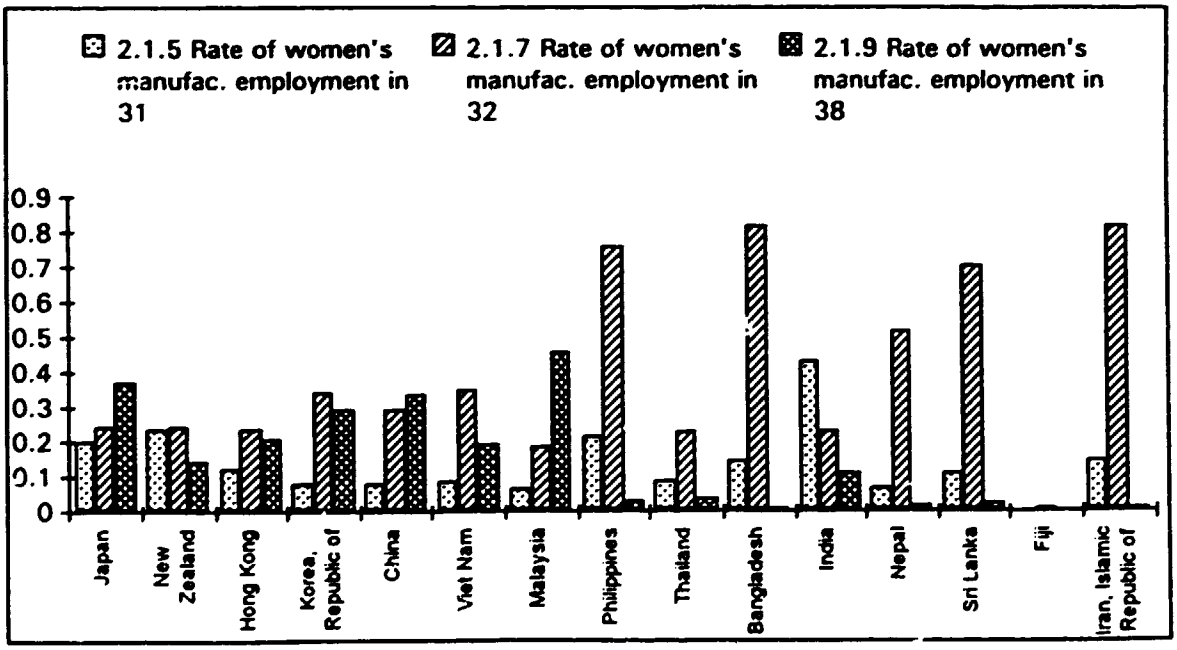


Figure 6 Distribution of female manufacturing labour force, selected ESCAP countries



play. It is not unusual that female participation in the economy declines during the initial stages of development and increases at later stage, leading to a U-shaped relationship between female activity rates and economic development (see Figure 7a and 7b).

There are large differences in per capita GDP in the region. In the industrialized countries the figure can be up to fifty times higher than that of South Asian countries. Some of the NIEs have per capita GDP higher than some European industrialized countries. Economic growth has been most rapid in countries with high growth of manufacturing value added, export-oriented industrial strategy and stable macroeconomic environment. These conditions have proved favourable to the growth of female employment (*Perkins in UN/ESCAP 1992*). It has been found, for example, that 1 per cent increase in per capita income was associated with a 2.7 per cent increase in female participation in manufacturing sector and a 7.2 per cent increase in female participation in the non-agricultural sectors (*Perkins in UN/ESCAP 1992 p.115*).

The differences in the level of industrial development among country groups are reflected in the contribution of the manufacturing sector to GDP and the share of manufactured exports in total exports. A review of data over the last twenty years shows a different trend in the contribution of the manufacturing sector to GDP. In the developing countries, with a few exceptions, the contribution has been steadily rising between 1970 and 1990. In the industrialized countries and the NIEs, with the exception of Republic of Korea, the contribution of industry to GDP started declining after 1980 while the service sector has been increasing.

Assessment of the relative importance of light labour-intensive industries in the structure of the manufacturing sector reveals the specific pattern of industrialization. This aspect is of particular relevance to the subject of this study. A high share of food and textile/garment industries in MVA is often associated with an early stage of industrialization and import-substitution strategy. In Asia, textile/garment industry has assumed a leading role in the export led industrialization in the later stage. These conditions were mainly responsible for the growth in demand for cheap female labour. A high share of machinery and electrical appliances in MVA, on the other hand, tends to be associated with a more advanced industrial structure. In countries such as Singapore and Malaysia, the high content of electronics industry which growth was based on labour-intensive assembling rather than component production, provided employment for a large number of women. Distribution of the female industrial labour force seem to follow the pattern of distribution of MVA (see Figure 8a and 8b).

The role of government in the economy has proved important at all stages of development. Recent emphasis on the indirect role of the government as a facilitator rather than a provider ignores the experience of successful government interventions in some of the fastest growing economies in the region. It has also been documented that the Human Development Index is high in countries where government has a say in the allocation of resources for both economic and social development.

Government involvement in the economy has proved beneficial especially for women. The public sector has provided a substantial share of female employment in particular areas such as health and education and in countries such as China and Vietnam also in industry. In

Figure 7a Scatterplot of female economical participation and GDP/capita

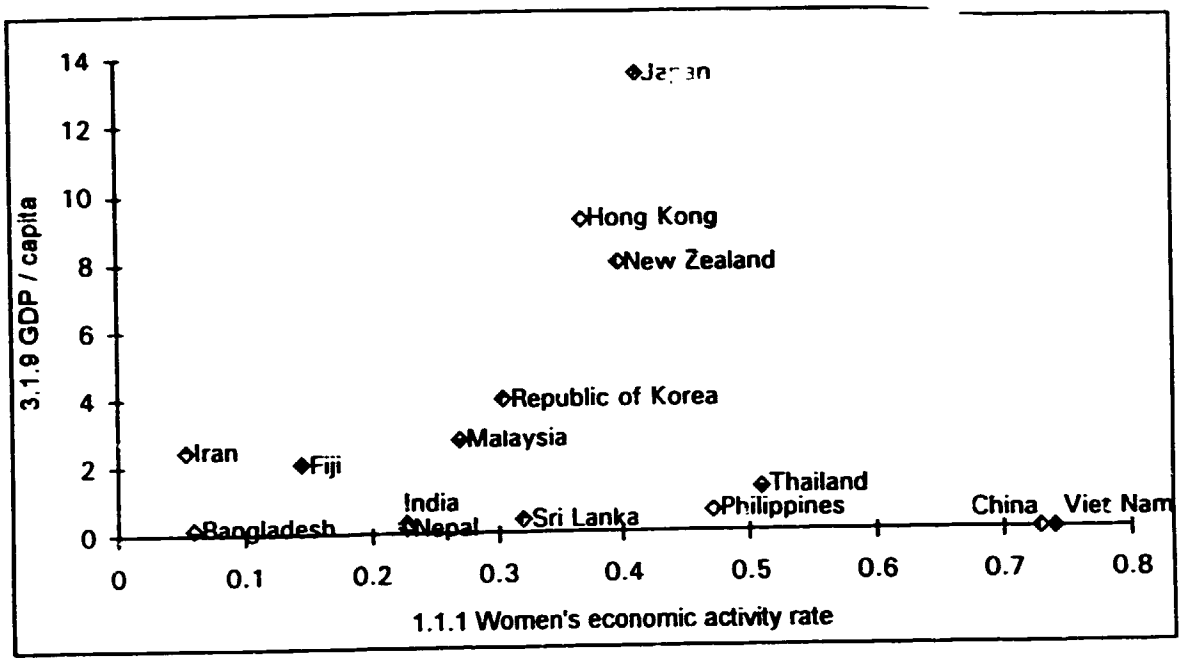


Figure 7b Combination plot of participation of women in manufacturing (EAP) and GDP/capita

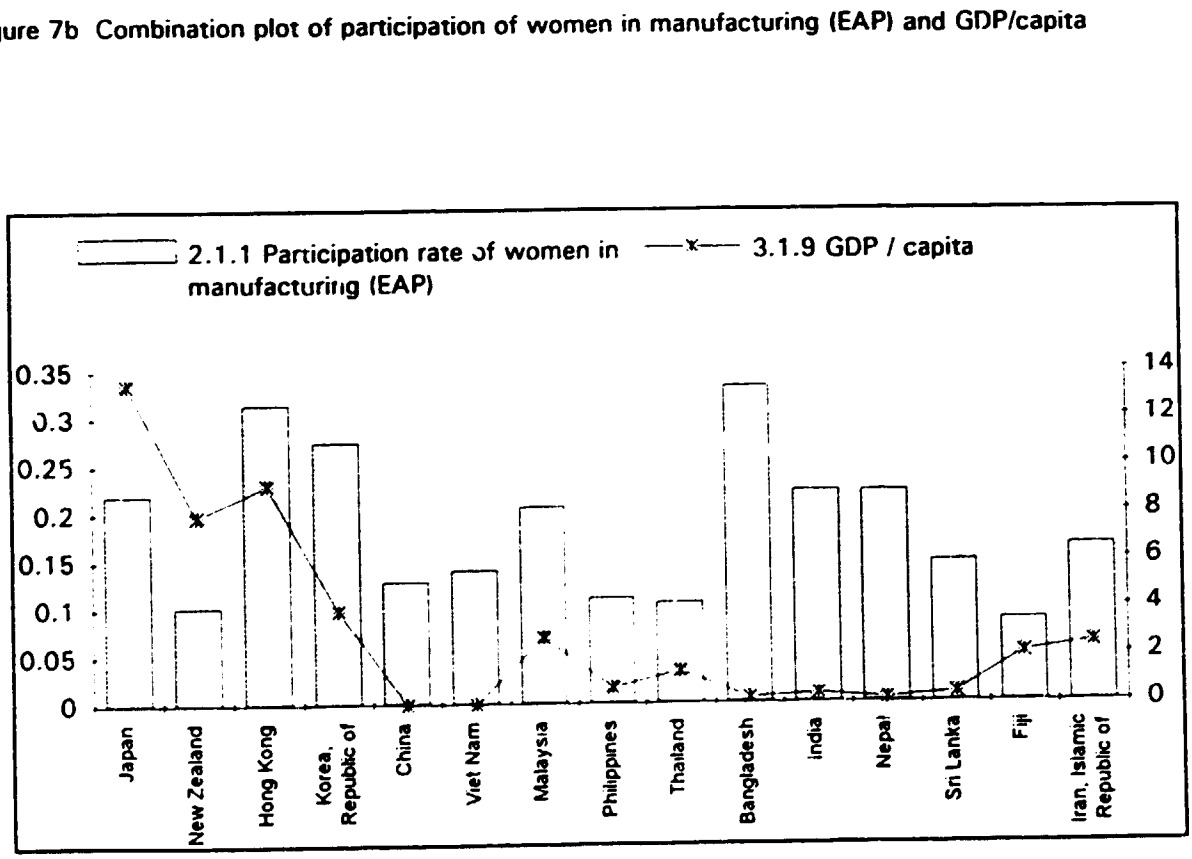


Figure 8a Distribution of MVA

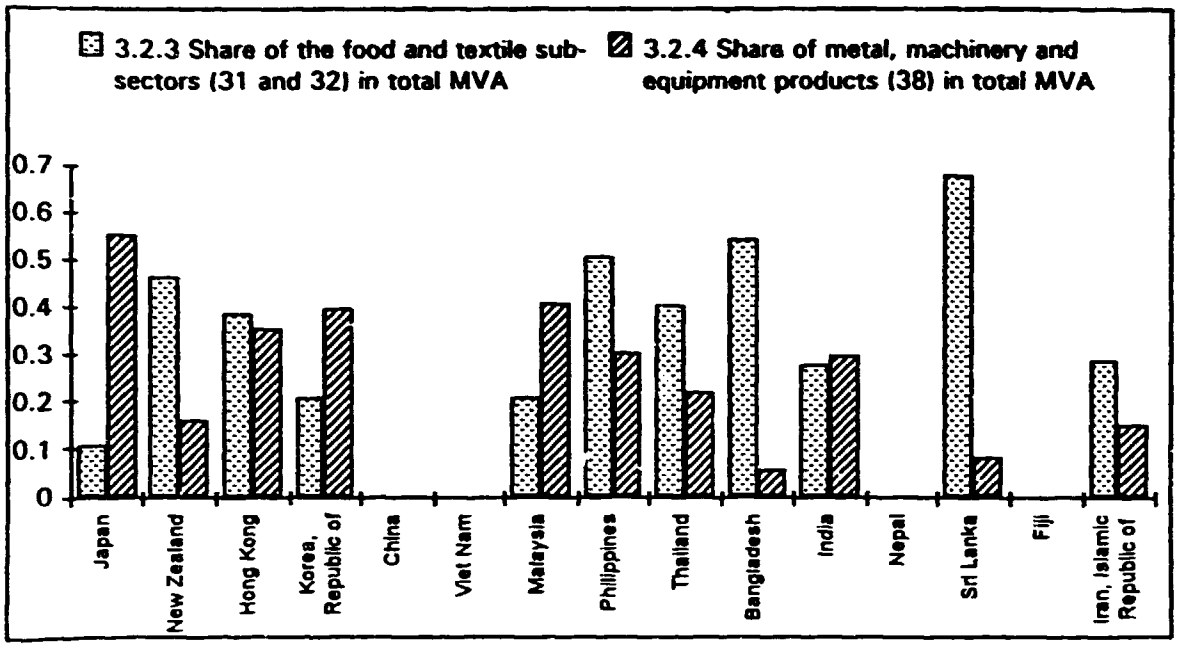
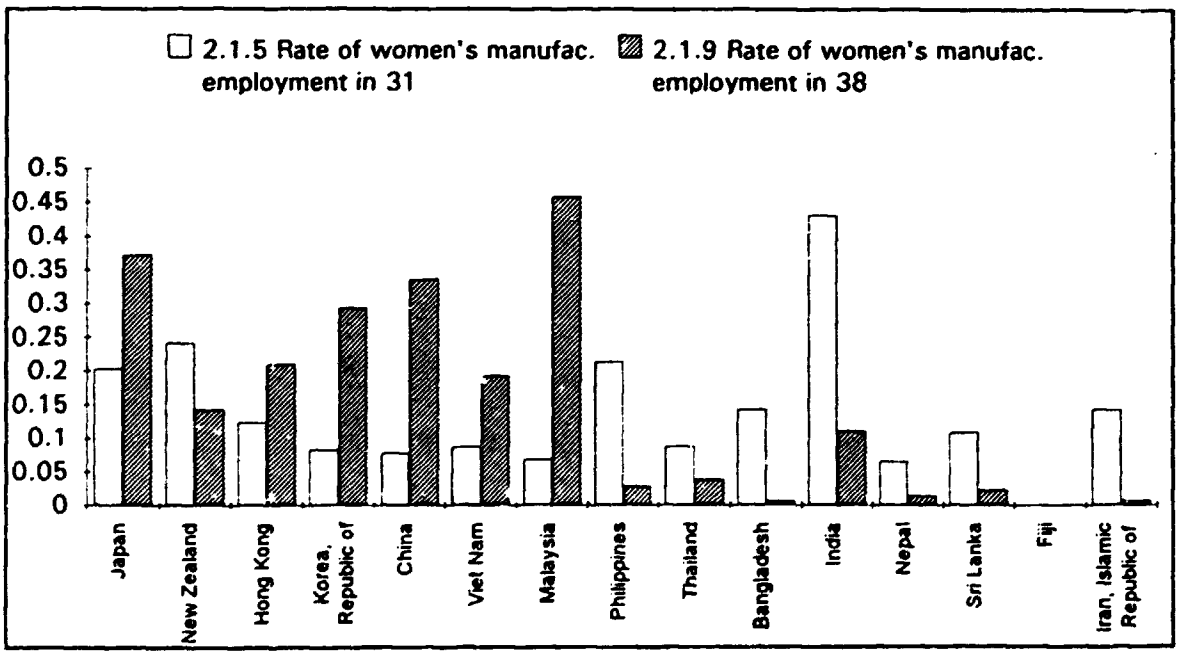


Figure 8b Distribution of female manufacturing labour force



addition, female government employees generally enjoy a greater equality of opportunity and welfare services than they could expect in the private sector. Increasing tendencies towards privatization and reducing government expenditure tend to have an adverse effect on the advances made in female employment, especially in the transitional economies of the region.

Government expenditure on basic human needs and education reflects government involvement in human resources development. The level of expenditure is also an expression of a commitment to a particular political and social philosophy of the prevailing government which can have a considerable influence on the economic and social status of women. The evidence from countries with the socialist regimes has shown much higher equity in social and economic status between men and women as well as in educational attainments. The cost factor of services connected with child care is one of the most important determinants of demand and supply of female labour. Government involvement in this area is of vital importance to the enhancement of women's economic participation.

Developing countries in the region for which data is available have a share of government expenditure in GDP ranging from 15 to over 30 per cent. The part of government expenditure used on social infrastructure and human resources is highest in the developed countries, around 30 per cent. In the developing countries it is about half of that. However, the opposite relationship applies to the comparison of government expenditure on education. Developing countries can spend twice as high a proportion of government expenditure on education.

1.3. CHARACTERISTICS OF SOCIAL AND DEMOGRAPHIC CONDITIONS

Characteristics of the social and demographic environment portray the size and quality of human resources which could be mobilized for economic and industrial development. The selected indicators were used in the analysis to represent labour supply determinants.

In the Asia-Pacific region, the human resources potential available for development numbered about 3 billion in 1990. Female population constituted just under half of this human potential. Less than 40 per cent of the population lives in urban areas and benefits from a generally better provision of social, health and educational facilities. About two thirds of the total population is of working age, 15-64 years old. As elsewhere in the world, women have a longer life span than men and life expectancy has been improving steadily in most countries in the region. However, in several countries of South Asia, female mortality exceeds male mortality which brings female/male ratios of life expectancy under 1.

The average total fertility rate for countries for which such information was available is estimated at 3.3 children per women. Although there are large disparities between countries, the trend in the last twenty years shows a decline in the total fertility rate in virtually all the countries (*Asian Development Bank 1993, p.32*). This changes have had a considerable impact on female age-specific labour force participation rates and stability of the female labour force. More women are returning to work earlier which results in an overall increase of participation rates, especially for women in the age group 30-39 years (see Figure 9).

The age of marriage is closely associated with the fertility rate. A large part of the female labour force in the formal sector is recruited from the category of young, unmarried women.

Figure 9 Female economic participation rate and fertility rate

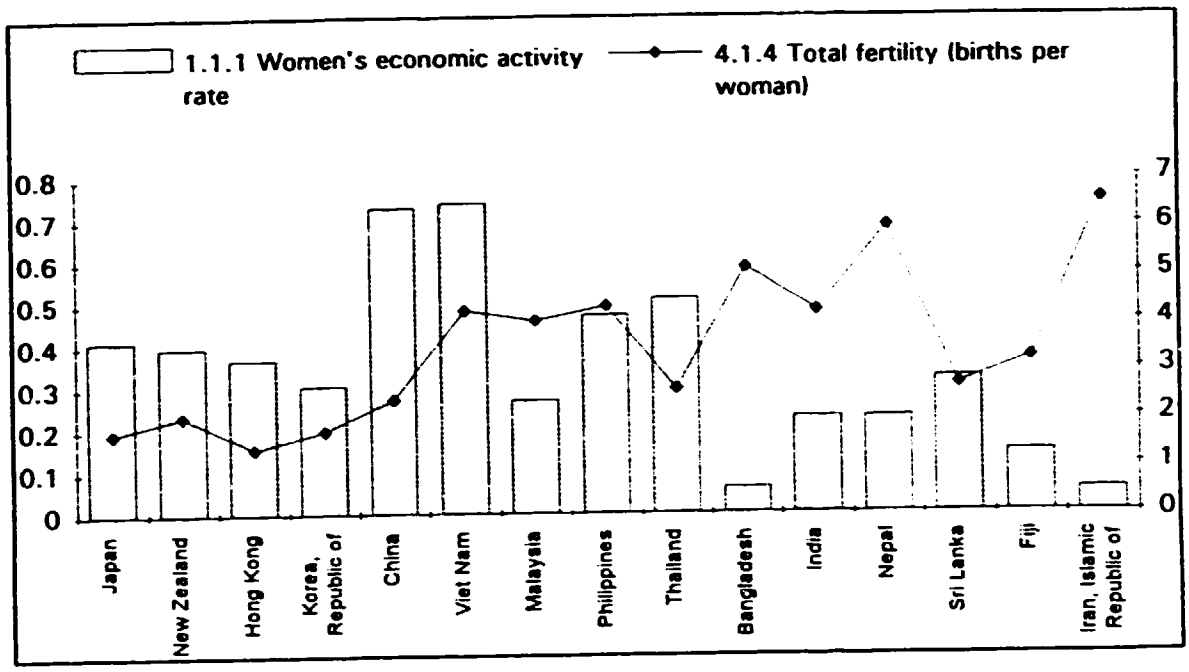
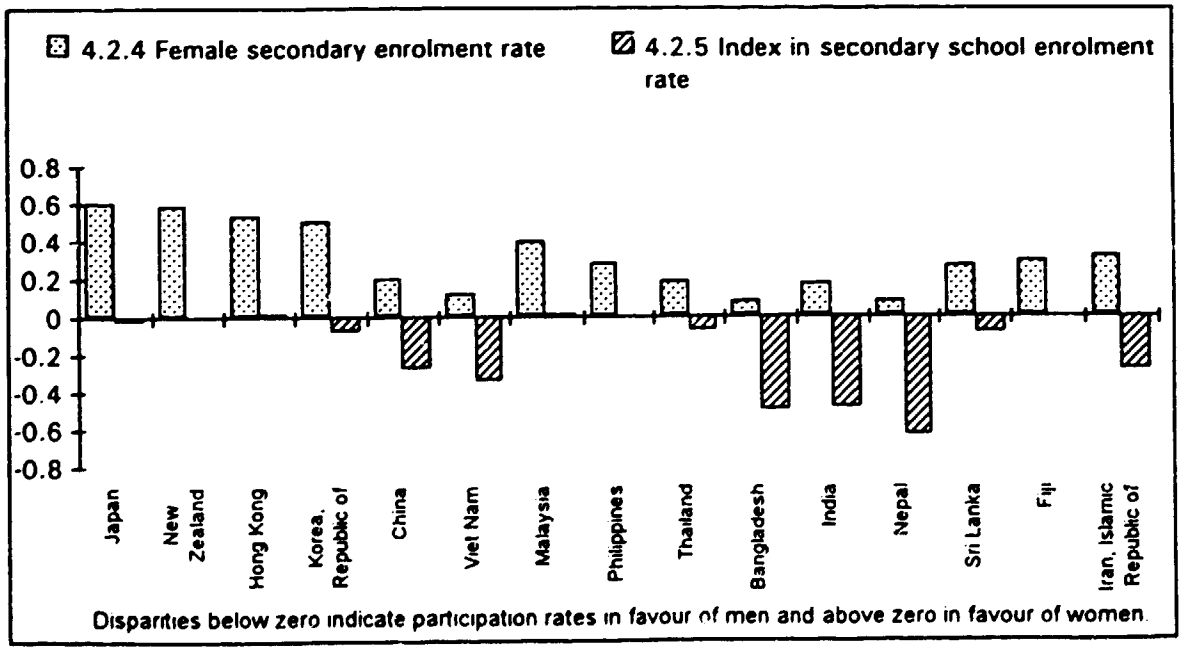


Figure 10 Female secondary school enrolment rate and M/F disparity index



Although most of the countries have laws placing restrictions on the age at which young people may marry, these laws may not be strictly enforced. For most of the developing countries the minimum legal age for a bride is between 16 and 18 years, but it can be even 14 as is the case in the Philippines (*Asian Development Bank 1993, p.60*). The minimum age for a bridegroom is usually higher, about 18. It can be also over 20, as for example in India. The tendency over time is towards later marriage than specified by law. The industrialized countries and the NIEs have the highest average age at which women actually marry, followed by countries in Southeast Asia. In South Asia not only do women marry at a younger age, but in a number of countries one fourth of women are already married at the minimum legal age.

The number of female headed households is an important indication of the family and economic burdens placed upon women. Problems encountered with conceptual definitions and cultural practices makes the data collection very difficult and the data which exist may not be very reliable. Information from 1980 reported from a number of developing countries indicates that about 15 per cent of the households were headed by women (*Asian Development Bank 1993, p.68*). Hong Kong had over 25 per cent of its households headed by women. Recent trends point towards an increase in the number of women headed households judged by larger numbers of unmarried and divorced women.

Literacy is a basic requirement for participation in the modern sector of the economy. In the NIEs and in most developing countries in Southeast Asia, 70 per cent or more of women and 85 per cent of men aged 15 and over can read and write (*Asian Development Bank 1993, p.73*). Although literacy rates for women have been improving, there are still considerable differences among countries and especially between urban and rural areas. The least progress has been made in India and Pakistan and although in Afghanistan and Nepal the progress was faster, the literacy rates for women are still the lowest in the region, around 30 per cent.

Similar observations apply to primary and secondary school enrolments. In most of the countries the enrolment rates for girls have not only improved considerably but also faster than for boys during the last twenty years with the exception of Afghanistan, Bhutan and Nepal (*Asian Development Bank 1993, p.76*). The educational requirements for recruitment into the wage labour market have been rising and primary and secondary education have become a norm also for recruitment into the industrial sector. More so, secondary school diploma is an essential precondition for training and career advancement. There has been an improvement in female secondary school enrolments, especially among the younger group of women but there are still large gender disparities and variations between countries (see Figure 10).

Tertiary education, especially science and engineering subjects are becoming more and more important as the advancement of technology and the speed of change increases. Only in the industrialized countries, Republic of Korea and the Philippines between 30 and 40 per cent of population in the relevant age group is enroled in tertiary education. Enrolment rates for other countries in the region do generally not exceed 10 per cent. The exceptions are Thailand, Hong Kong and Singapore. Countries where gender specific data on tertiary education are available show that much slower progress has been made in increasing enrolment rates of girls in tertiary education than for the lower educational levels. Not only

are overall rates of enrolment for women much lower than those for men, but the representation of women in technology related subjects is very low.

1.4. CHARACTERISTICS OF POLITICAL AND INSTITUTIONAL ENVIRONMENT

Representation of women in positions of influence on political and public life has made a difference to the perception of women and their status in the society. Access to positions of political power enhances the chances of women's demands being considered in policy formulation and allocation of public resources. A constitution grants the rights of individuals and social groups and is the basis for a legal and institutional framework to protect and implement these rights. Laws and institutions directed at protecting and enhancing the interest of women are important for attracting public attention to women's issues and can be instrumental in implementing desired changes. An integration of gender issues in national development plans provides a framework for setting goals for these changes and monitoring the progress in achieving them.

It is recognized that in many Asian countries constitutional rights and powers of representative institutions are often undermined by forces outside the constitutional process. Social prejudices rooted in traditional cultural biases against women's political and economic activities outside the household can be a serious obstacle to women's advancement. An objective assessment of these forces is extremely difficult. Public media and education curricula are often not only a reflection of the traditional values but can be used as instruments in their perpetuation or change.

In recent history, women were elected as chief executives in five Asian countries. However, the presence of women at the top of political ladder is no guarantee for the improvement in social and economic status of women. The strength of political power at the top depends also on parliamentary support and the composition of cabinet. Women's representation in parliament is far from being equal to that of men and typically does not exceed 10 per cent. Women in cabinet positions are even fewer and their ministerial portfolios are often in a lower rank of importance. Influential positions in economic and legal affairs are still a men's domain. Philippines is a rare exception with a relatively high female representation both in cabinet and executive positions in economic, political and legal affairs (*Moghadam in WIDER 1993*).

A large number of the countries in the region are signatories to the International Convention on Elimination of All Discrimination Against Women but, for example, India and Afghanistan have not yet ratified it. Malaysia, Pakistan, Iran, Nepal and a number of Pacific island countries have neither signed nor acceded to the Convention as yet (*Moghadam in WIDER 1993*). Many of the Convention's provisions have also been included in the countries' Labour Codes. The evidence however shows that the enforcement of such provisions often depends on women's representation in trade unions, the existence of strong women supportive organizations and NGOs (*Heyzer 1988*). Examples of strikes in Malaysia, the Philippines and Sri Lanka document the rising consciousness among female industrial workers and the potential and limitations of trade union organizations. Other examples such as SEWA (literally "Help", an organization committed to the goal of enhancing women's visibility in economic activities) in India and Grameen Bank in Bangladesh show the

importance of non-governmental institutions in enhancing women's economic and social emancipation.

1.5. DETERMINANTS OF WOMEN'S ECONOMIC AND INDUSTRIAL PARTICIPATION

The results from the correlation analysis are reviewed in terms of relationships between indicators characterizing different systems and interdependency of indicators within the same system. Identification of indicators' system-internal and system-external relationships presents different options for formulating plans of action appropriate to the patterns of the respective clusters discussed in the following chapters. Since correlations do not explain causal relationships, interpretation of the results is only an indication of the strength not a direction of these relationships.

a) Relationships between systems

Not surprisingly, the correlation analysis shows that indicators characterizing the situation on the labour market (System I and II) have strongest relationships with indicators characterizing the supply of labour (System IV). Life expectancy, total fertility rate, age at first marriage and access to education have high correlation coefficients with the indicators of female economic and manufacturing labour force participation. These findings, although based on a smaller number of observations, confirm results from correlation analysis performed in UNIDO's global typology and studies in the ESCAP region (*Khoo in UN/ESCAP 1987, Banerjee in UN/ESCAP 1992*). Negative correlations between female participation rates indicators and indicators of age at first marriage and fertility rates confirm the trends observed on the labour market.

Participation in employment had the highest correlation with primary school enrolment rate, life expectancy and literacy rate. Correlations with indicators of total fertility, secondary school enrolment rate and women headed household were lower but still significant. Participation in manufacturing employment had the highest correlation with indicators of secondary school enrolment rate, age at first marriage and life expectancy. Participation in occupational category of workers had the highest positive correlation with indicators of life expectancy, age at first marriage and a negative correlation with fertility rate.

There were fewer high correlations found between indicators characterizing the labour market (System I) and those characterising economic and industrial development (System III). This is due to the fact, that the relationship between female participation rates and per capita GDP is not linear, as noted in a similar analyses (*Khoo in UN/ESCAP 1987, Perkins in UN/ESCAP 1992*). The most relevant relationships between female manufacturing employment, the share of MVA and exports in GDP had positive correlations. The strongest relationships were found between female participation in food processing manufacturing employment and MVA contribution to GDP; between participation in the machinery and electrical appliances manufacturing branch and the share of the branch in GDP; and between economic activity in the tertiary sector and tertiary sector's contribution to GDP.

On the other hand, a number of high correlations were found between indicators representing labour demand (System III) and supply (System IV). Demographic indicators had a high

correlation with indicators of GDP per capita, MVA per capita, and agricultural sector's contribution to GDP. All indicators representing access to education had a highest correlation with the MVA per capita indicator.

b) Internal system relationships

As could be expected, strong relationships were found between economic participation and employment, and between participation in manufacturing activities and industrial employment. However, there were no strong associations found between the female participation rate in economic activities and employment rate, and between manufacturing activity rate and industrial employment rate. A strong relationship was found between manufacturing employment and employment in textile and garment manufacturing.

Among economic indicators, high correlation was found between GDP per capita and MVA per capita. Another high, but negative, correlation was found between GDP per capita and the share of agricultural sector in GDP. There was also a moderately high negative correlation found between the share of government expenditure in GDP and the share of manufacturing exports in total exports. However, the most numerous and strongest correlations were found among demographic and social indicators. High interdependent relationships were identified between life expectancy, age of marriage, fertility rate, literacy rates and access to primary and secondary education.

c) Influence of gender disparities

Correlations between indicators expressing disparities between men and women were found to have a strong interdependent relationship both within and across systems. These relationships were also stronger than relationships between other indicators characterizing the different systems. For example, correlations between the gender disparity indicators of economic participation and employment were much higher than correlations between female participation rates in the respective activities and employment. The results also indicate a relatively weak relationship between the gender disparity indicators and the respective female participation rates.

CHAPTER II. GROUPS OF COUNTRIES AND THEIR CHARACTERISTICS

Cluster analysis was used to identify groups of countries which have similar characteristics of the relevant systems portraying the economic role of women and its socio-economic determinants. Examination of country-group-specific patterns of female participation allows an assessment of constraints and enhancements determining women's economic status at a particular point of time. It also facilitates formulation of strategies for action adapted to the specific needs of the different groups of countries discussed in chapter IV.

The groups of countries identified by the clustering method verify, to a large extent, findings from an earlier ESCAP study where the country typology is based on the level of development criteria (*Khoo in ESCAP 1987*). The advantage of using the multivariate statistical technique lies in the possibilities of considering a larger number of indicators in the cross-country comparison. Inclusion of other not only socio-economic criteria gives a more complete picture of the patterns and determinants of women's economic/industrial participation. Technical details of the clustering analysis are described in the Methodological Annex (Annex A).

The clustering analysis produced five groups from a total of 16 countries for which a complete set of 15 core indicators was available (see Table 3). Although there are country to country variations in the indicators within the clusters (see Tables 4-7), a compromise was made between a maximum number of similarities and a meaningful number and composition of the country groups. Since Fiji was identified as a cluster on its own it was not included in the cluster specific analysis but is discussed separately together with other Pacific Island countries.

Due to the incompatibility of data, the People's Republic of China (from now on referred to as China) and the Socialist Republic of Vietnam (from now on referred to as Vietnam) were also excluded from the cluster analysis. However, they are important examples of how women fare under a centrally planned economic system and socialistic oriented socio-political environment. A separate description of the two countries is given under the heading of transitional economies. Since the basis for determining the pattern of female economic participation in these countries may not be strictly compatible with the values for the countries included in the cluster analysis, comparisons could be only indicative.

The identified country groups are as follows:

Cluster 1 Nepal, Pakistan, Bangladesh, India;

Cluster 2 Sri Lanka, Indonesia, Thailand, the Philippines;

Cluster 3 Japan, Rep. of Korea, Hong Kong, Malaysia, Singapore;

Cluster 4 Australia, New Zealand;

Fiji and the Pacific Island countries

Transitional economies: China, Vietnam

2.1. SUMMARY OF THE MAIN FINDINGS

The groups of countries with a similar pattern of women's involvement in the economy and in manufacturing roughly coincide with existing sub-regional and development level groupings. Figures 11- 15 facilitate a two-dimensional comparison. One dimension shows to what extent the mean values of cluster indicators deviate from values of corresponding indicators for all 15 countries with the mean of zero and variance of 1. The other dimension shows how these deviations differ across clusters. In this way the figures help to illustrate the distinguishing features of each cluster and facilitate a cross-cluster comparison. The four clusters can be thus characterized as follows:

Cluster 1 — South Asian countries with a small manufacturing sector and low rates of female participation in the economy but relatively high rates of female manufacturing employment.

Cluster 2 — Southeast Asian and South Asian countries with a fast developing manufacturing sector and a high concentration of female manufacturing employment in the textile and clothing industry.

Cluster 3 — Industrialized and newly industrializing countries with high rates of female economic participation in the modern sector and manufacturing employment, particularly in the electronics industry.

Cluster 4 — Industrialized countries with high activity rate of women but low rates of female participation in manufacturing.

Different patterns of female participation in the economy in general and the manufacturing sector in particular are illustrative of the different socio-economic environments prevailing in the four groups of countries in or around 1990. Comparison of cluster means (see Table 3) clearly demonstrates the association between the measurements of female economic and manufacturing participation and the determinants discussed in the previous chapter. Female economic participation rate is lowest in cluster 1 and highest in cluster 4. (The mean value for cluster 3 appears lower than for cluster 2 because of the lower female participation rate in Malaysia). The rate of female employment in manufacturing tends to increase with the manufacturing sector's contribution to GDP and exports but declines at an advanced level of development.

Cluster 3 gives the clearest example of the positive association between economic growth based on rapid industrialization and export promotion. The demand for female labour in formal sector activities, especially in export oriented manufacturing, was influenced by the general need for a larger work force as the economy grew and also by the comparative advantage of underutilized and undervalued female labour. The disparity index of gender division of labour by industrial branch brings out clearly the association between female industrial employment and export orientation. (In Cluster 2,3 and 4 the disparity index shows that women outnumber men in the textile/garment industries). These industries have not only a high share in MVA but are also the most important industries in terms of export earnings.

Table 3 Mean Regional/Cluster Values of Selected Indicators

Ind. No.	Indicator	Regional	Cluster 1:	Cluster 2:	Cluster 3:	Cluster 4:
1.1.1*	Women's economic activity rate	33%	15%	41%	35%	46%
1.1.7*	Women's participation rate in the tertiary sector (commerce and services)	37%	21%	34%	46%	49%
1.2.3*	Women's employment rate in non-agricultural activity	70%	53%	50%	91%	93%
2.1.1*	Participation rate of women in manufacturing (EAP)	19%	22%	12%	27%	10%
2.1.3*	Participation rate of women in manufacturing employment	33%	11%	42%	45%	30%
2.1.5*	Rate of women's manufacturing employment in the food, beverages and tobacco sub-sector	14%	20%	13%	8%	21%
2.1.7*	Rate of women's manufacturing employment in the textile, garments and leather sub-sector (32)	40%	59%	51%	23%	23%
2.1.9*	Rate of women's manufacturing employment in metal, machinery and and equipment production (38)	19%	3%	5%	43%	18%
3.1.1*	Logarithm of GDP/capita	0.46	-1.32	-0.38	1.81	2.3
3.1.4*	Share of MVA in GDP	22%	12%	23%	30%	18%
3.2.2*	Share of manufactured goods in total exports	64%	79%	48%	82%	19%
3.3.5*	Government expenditure on education (%)	12%	7%	14%	17%	10%
4.1.4*	Total fertility (births per woman)	3.3	5.5	3.3	2	2
4.2.4*	Female secondary enrolment rate	34%	11%	25%	51%	54%
5.1.1	Women's share in parliamentary representation (%)	6%	5%	7%	4%	12%
5.1.2	Women's share in cabinet representation (%)	3%	2%	6%	2%	2%
6.1.1.4	Signatory to CEDAW+	0.6	0.5	1	0.4	1
	Disparity indicator (- is in favour of men; + in favour of women)					
1.1.2*	Index male/female disparity in economic activity rate	-0.6	-0.5	-0.7	-0.6	-0.7
1.1.8	Index male/female disparity in EAP participation rate in tertiary sector	0.23	-0.2	0.4	0.3	0.5
2.1.2	Index of male/female disparity in EAP participation rate in manufacturing	-0.37	-0.6	-0.1	-0.2	-0.6
2.1.4	Index of male/female disparity in manufacturing employment	-0.4	-0.9	-0.09	-0.2	-0.6
2.1.6	Index in male/female in manufacturing employment rate in sub-sector 31	-0.5	-0.8	-0.5	-0.4	-0.6
2.1.8	Index of male/female disparity in manufacturing employment rate in sub-sector 32	1	-0.7	2	1.86	0.7
2.1.10	Index of male/female disparity in manufacturing employment rate in sub-sector 38	-0.5	-0.9	-0.7	-0.003	-0.7
4.2.5	Index of male/female disparity in secondary school enrolment rate	-0.2	-0.6	-0.09	-0.02	-0.01

*Included in the cluster analysis

+ Dummy variable, scale 0-2

Disparity indicators representing the labour market situation and those representing access to education tend to move in the same direction. In cluster 1, the M/F disparity in the labour market participation and secondary school enrolment rates are largest compared to the other clusters (see Figure 15). However, industrial development may help to reduce the influence of the socio-cultural barriers. Although women in Cluster 1 are strongly underrepresented on the labour market, the manufacturing sector employs a relatively high share of female labour force. Improvements in socio-economic conditions and the economic status of women can be observed in cross-cluster comparison.

2.2. ANALYSIS OF THE COUNTRY GROUPS

The following detailed examination of the identified country groups makes use of the larger data base and information from other sources to give as wide coverage as possible of most of the desirable gender sensitive indicators included in Table 1.

Cluster 1 — Countries with low levels of social development and low status of women, and low levels of labour force participation but comparatively high female participation rates in industry (Nepal, Pakistan, Bangladesh, India).

In terms of the social and demographic environment, these four countries of South Asia have comparatively low levels of social development associated with a particularly low status of women. Until very recently, this was reflected in higher female than male infant and child mortality and, consequently, lower life expectancy at birth for women than for men. Even in 1992, in Bangladesh and Nepal the differential in life expectancy at birth favoured men by 0.7 years and 0.2 years respectively (*ADB 1993, table 15*). Strong son preference in India in particular, has resulted in very high masculinity ratios in many regions that reflect female infanticide, higher female than male infant and child mortality and, more recently, sex selection before birth. This cluster has also the highest fertility rate (see Table 3).

On the demand side, the economic and industrial environment in the four South Asian countries of Cluster 1 has been characterized by relatively poor and, until recently, highly import substitution industrialization policies. In 1991, per capita GDP ranged from USD 180 for Nepal to USD 400 for Pakistan. The low level of development and the import orientation of these economies have been associated with comparatively low rates of growth and a low share of exports in GDP. However, with the exception of India, the growth of the manufacturing sector exceeded that of the economy as a whole. In all four countries, the growth of exports during the period 1980-91 was also well above the national growth rate, averaging 8.1 per cent for Nepal, 7.2 per cent for Bangladesh, 7.4 per cent for India and 9.9 per cent for Pakistan. Textiles and clothing comprised the major category of exports, accounting for 76, 62, 25 and 60 per cent of merchandise exports respectively (*World Bank, 1993: Table 16*). Female labour force participation is low in all four countries of Cluster 1 but the distribution by sector varies (see Table 4). Much of the differences in the sectoral composition of the female labour force is due to differences in enumeration because of cultural norms about the acceptability of labour force participation for women. In particular, the very low rates of female participation in agriculture in Bangladesh and Pakistan are likely to reflect considerable underenumeration. In India, female labour force participation in the

Table 4 System Characteristics of Cluster 1

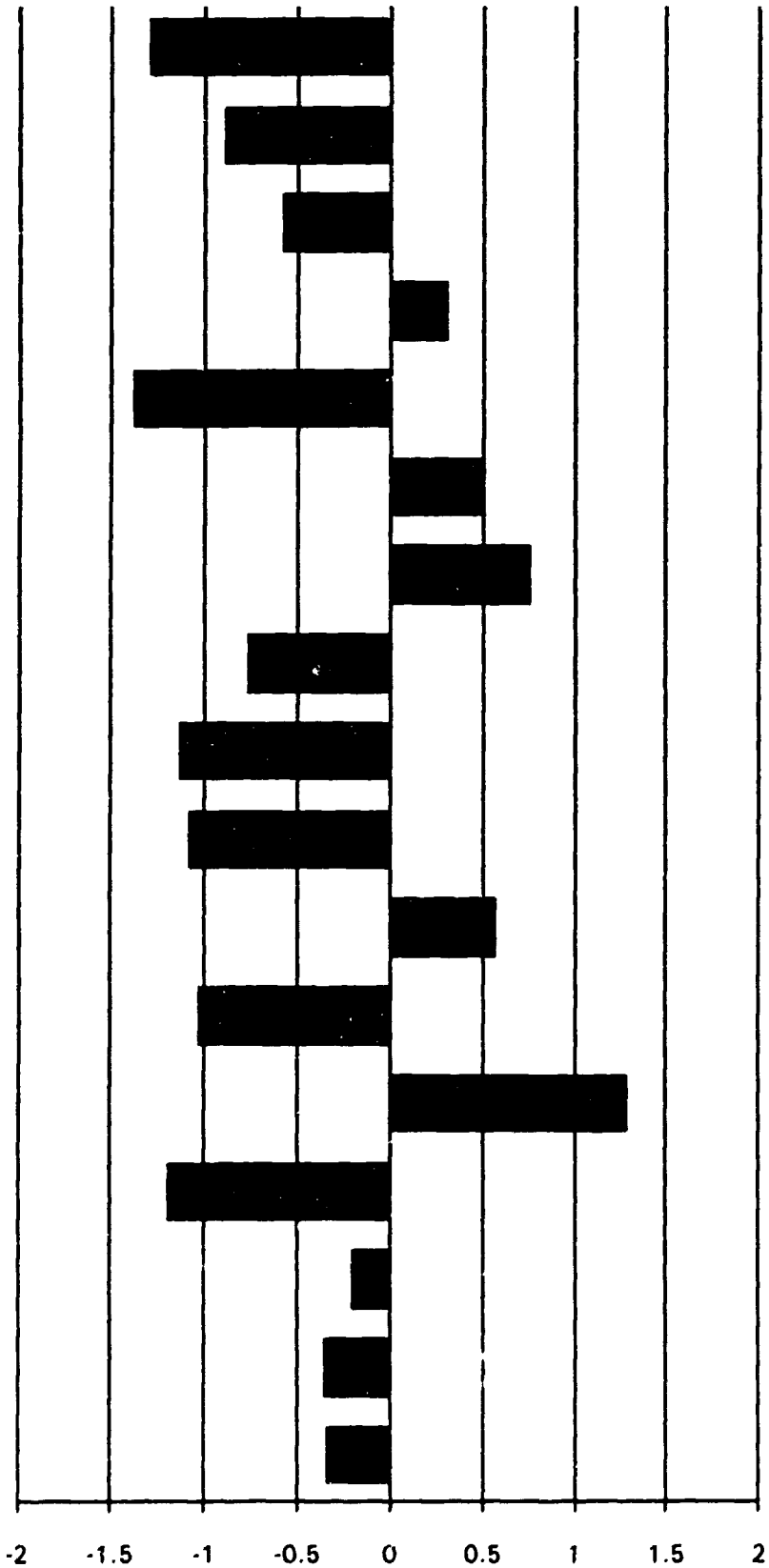
Ind. No.	Indicator	Bangladesh	Nepal	Pakistan	India
1.1.1*	Women's economic activity rate	6%	23%	6%	23%
1.1.7*	Women's participation rate in the tertiary sector (commerce and services)	40%	3%	40%	3%
1.2.3*	Women's employment rate in non-agricultural activity	9%	87%	28%	89%
2.1.1*	Participation rate of women in manufacturing (EAP)	33%	22%	11%	22%
2.1.3*	Participation rate of women in manufacturing employment	11%	11%	11%	9%
2.1.5*	Rate of women's manufacturing employment in the food, beverages and	14%	6%	14%	43%
	tobacco sub-sector (31)				
2.1.7*	Rate of women's manufacturing employment in the textile, garments and	81%	51%	81%	22%
	leather sub-sector (32)				
2.1.9*	Rate of women's manufacturing employment in metal, machinery and	0%	1%	0%	10%
	equipment production (38)				
3.1.1.*	Logarithm of GDP/capita	-1.6	-1.8	-1.03	-0.8
3.1.4*	Share of MVA in GDP	9%	3%	18%	18%
3.2.2*	Share of manufactured goods in total exports	72%	94%	79%	71%
3.3.5*	Government expenditure on education (%)	11%	11%	3%	3%
4.1.4*	Total fertility (births per woman)	5.1	5.95	6.75	4.2
4.2.4*	Female secondary enrolment rate	9%	8%	9%	18%
5.1.1	Parliamentary Representation of Women	10%	3%	1%	7%
5.1.2	Cabinet Representation of Women	1%	1%	3%	2%
6.1.1.4	Signatory to CEDAW+	1	1	0	0
	Disparity Indicator (- is in favour of men; + in favour of women)				
1.1.2*	Index male/female disparity in EAP	-0.9	-0.4	-0.1	-0.4
1.1.8	Index male/female disparity in EAP participation rate in the tertiary sector	0.4	-0.7	0.4	-0.7
2.1.2	Index of male/female disparity in EAP participation rate in manufacturing	-0.4	-0.6	-0.8	-0.6
2.1.4	Index of male/female disparity in manufacturing employment	-0.9	-0.9	-0.9	-0.9
2.1.6	Index of male/female disparity in manufactuirng employment rate in sub-sector 31	-0.9	-0.9	-0.9	-0.6
2.1.8	Index of male/female disparity in manufacturing employment rate in sub-sector 32	-0.8	-0.4	-0.8	-0.9
2 1.10	Index of male/female disparity in manufacturing employment rate in sub-sector 38	-0.9	-0.9	-0.9	-0.9
4.2.5	Index of male/female disparity in secondary school enrolment rate	-0.5	-0.6	-0.6	-0.5

*Included in the cluster analysis

+ Dummy variable , scale 0-2

Figure 11

CLUSTER CHARACTERISTICS
Cluster 1: India, Nepal, Bangladesh, Pakistan



1.1.1 Women's economic activity rate

1.1.7 Women's participation rate in the tertiary sector (commerce

1.2.3 Women's employment rate in non-agricultural activity

2.1.1 Participation rate of women in manufacturing (EAP)

2.1.11 Participation rate of women in manufac. empl.

2.1.5 Rate of women's manufac. employment in 31

2.1.7 Rate of women's manufac. employment in 32

2.1.9 Rate of women's manufac. employment in 38

3.1.1 Logarithm of GDP/capita

3.1.4 Share of MVA in GDP

3.2.2 Share of manufactured goods in total exports

3.3.5 Government expenditure on education (%)

4.1.4 Total fertility (births per woman)

4.2.4 Female secondary enrolment rate

5.1.1 Wome's share in parliamentary representation

5.1.2 Women's share in cabinet representation (%)

6.1.1.4 Ratification of CEDAW

non-agricultural sectors has risen quite rapidly from a low base of 3 per cent in 1970 to 13 per cent in 1981, although very little of this was in manufacturing (*Khoo, 1987: Table 1.2*).

Development in the South Asian economies has not been associated with steady increases in female employment in the modern sector. For example, during the 1970s the percentage of women employees among women workers in India actually fell from around 11 per cent to 8 per cent (*Jose, 1990: 68*). Between 1963 and 1971 the ratio of female to male earnings in manufacturing also fell from 55 to 45 per cent (*Khoo, 1987: Table 1.4; see also Nayyar and Sen, 1987: 111*), although the female-male disparity in agricultural earnings narrowed over the same period (Nayyar and Sen, 1987: 105). However, as the South Asian economies gradually move to more outward-looking economic policies, it is likely that women's participation in manufacturing will increase. Despite the low absolute levels of recorded labour force participation and women's low levels of participation in the non-agricultural sectors in India and Nepal, young, more educated women are moving increasingly into paid employment, particularly to the garments industries in Bangladesh and Pakistan (*Jose, 1990: 71*).

In the political environment, the representation of women in both cabinet and the parliament and the implementation of international conventions providing legal protection to women is below the regional average. This is despite the fact that three of the four countries are among the very few in the world to have or have had women prime ministers. India has recently passed laws that will greatly enhance the participation of women in local government. However, the low overall status of women may limit their capacity to take advantage of such affirmative action programmes. Although the countries in cluster 1 have ratified the ILO conventions on equal remuneration and discrimination in employment and occupation, they have yet to be effectively implemented and have little effect on the female industrial labour force, which is largely excluded from their protection. The index of ratification of the CEDAW convention is also lower that the average for the region as a whole, most of the countries continuing to register reservations on several the key provisions of the conventions.

Cluster 2 Southeast and South Asian countries with a fast developing manufacturing sector and a high concentration of female manufacturing employment in the textile and clothing industry (Sri Lanka, Indonesia, Thailand, the Philippines).

All countries in this group with the exception of Sri Lanka are members of the Association of Southeast Asian Nations (ASEAN). Although Thailand and Philippines have more advanced economies than Indonesia and Sri Lanka, they have a number of similar characteristics which portray the pattern of women's economic participation. As shown in Figure 12, female economic activity rates in this cluster is somewhat higher than the average for the region, ranging from 32 per cent in Sri Lanka to 51 in Thailand (see Table 5). As a result of a large proportion of the female labour force being involved in agriculture and informal sector activities, participation rates of women in formal sector, although above average, are not as high. For the group as a whole, manufacturing employment is above the regional average and in Thailand and Sri Lanka women's participation rate in the industrial labour force is around 50 per cent. About three fourths of the female labour force in manufacturing are involved in the formal sector, that is significantly more than in the economy as a whole. Nonetheless, a sizeable share of women's workers is involved in

Table 5 System Characteristics of Cluster 2

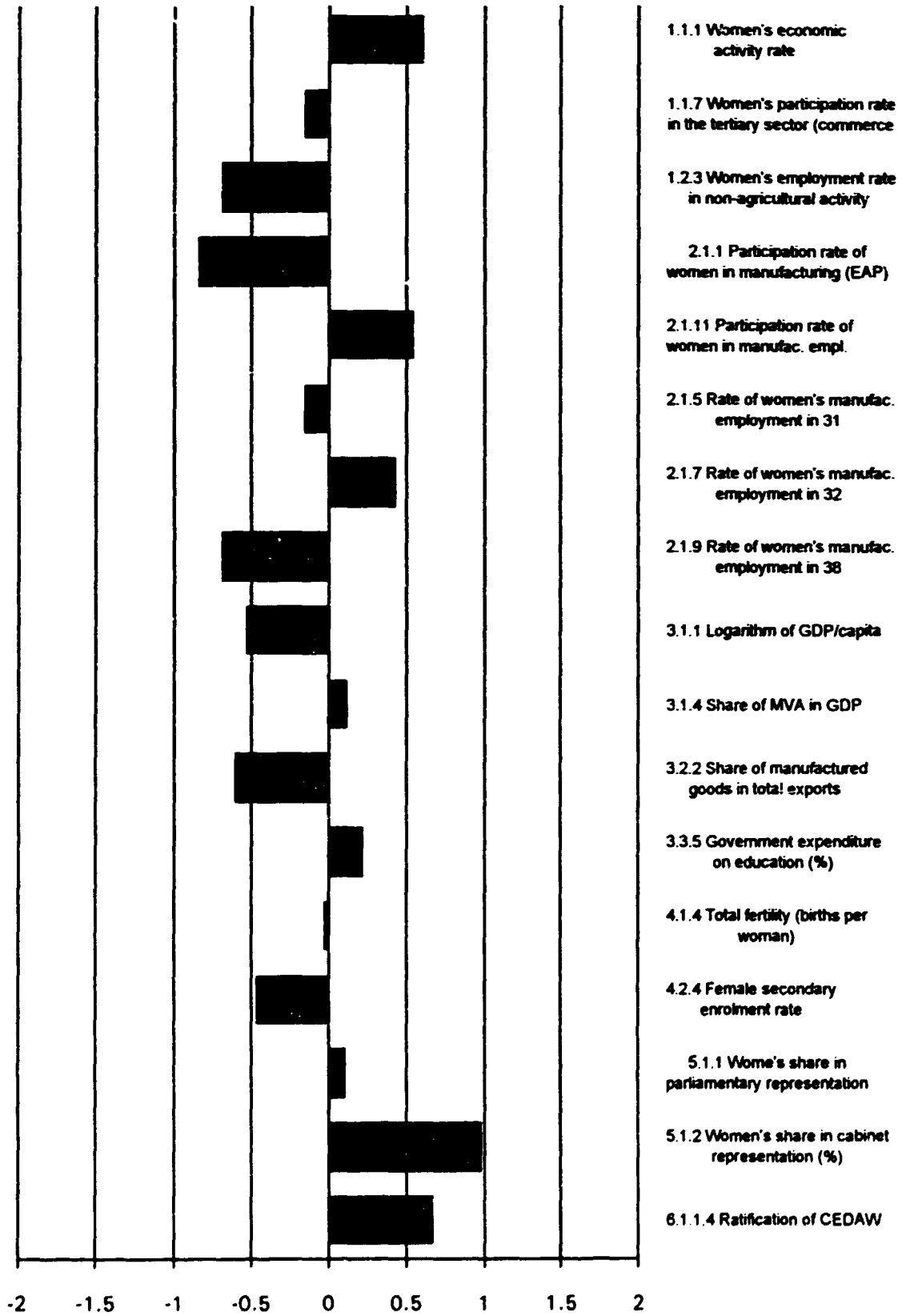
Ind. No.	Indicator	Sri Lanka	Indonesia	Philippines	Thailand
1.1.1*	Women's economic activity rate	32%	34%	47%	51%
1.1.7*	Women's participation rate in the tertiary sector (commerce and services)	31.40%	33%	56%	17%
1.2.3*	Women's employment rate in non-agricultural activity	51%	44%	69%	35%
2.1.1*	Participation rate of women in manufacturing (EAP)	15%	11%	11%	11%
2.1.3*	Participation rate of women in manufacturing employment	53%	25%	39%	50%
2.1.5*	Rate of women's manufacturing employment in the food, beverages and	11%	9%	21%	9%
	tobacco sub-sector (31)				
2.1.7*	Rate of women's manufacturing employment in the textile, garments and	70%	36%	76%	23%
	leather sub-sector (32)				
2.1.9*	Rate of women's manufacturing employment in metal, machinery and	2%	10%	3%	4%
	equipment production (38)				
3.1.1*	Logarithm of GDP/capita	-1.01	-0.3	.-4	0.2
3.1.4*	Share of MVA in GDP	18%	22%	25%	24%
3.2.2*	Share of manufactured goods in total exports	54%	35%	38%	63%
3.3.5*	Government expenditure on education (%)	9%	10%	17%	19%
4.1.4*	Total fertility (births per woman)	2.6	3.4	4.3	2.5
4.2.4*	Female secondary enrolment rate	27%	24%	29%	19%
5.1.1	Parliamentary Representation of Women	5%	9%	4%	9%
5.1.2	Cabinet Representation of Women	2.60%	1.30%	7.30%	10.80%
6.1.1.4	Signatory to CEDAW	1	1	1	1
	Disparity Indicator (- is in favour of men; + in favour of women)				
1.1.2*	Index male/female disparity in EAP	-0.6	-0.7	-0.9	-0.6
1.1.8	Index male/female disparity in EAP participation rate in the tertiary sector	-0.09	0.1	1.5	-0.15
2.1.2	Index of male/female disparity in EAP participation rate in manufacturing	-0.19	-0.1	-0.2	-0.003
2.1.4	Index of male/female disparity in manufacturing employment	0.1	-0.2	-0.3	-0.01
2.1.6	Index of male/female disparity in manufactuirng employment rate in sub-sector 31	-0.5	-0.5	-0.4	-0.6
2.1.8	Index of male/female disparity in manufacturing employment rate in sub-sector 32	2.1	2.1	1.9	2
2.1.10	Index of male/female disparity in manufacturing employment rate in sub-sector 38	-0.8	-0.4	-0.9	-0.5
4.2.5	Index of male/female disparity in secondary school enrolment rate	-0.09	-0.2	-0.006	-0.07

*Included in the cluster analysis

+ Dummy variable, scale 0-2

Figure 12

CLUSTER CHARACTERISTICS
Cluster 2:Sri Lanka, Indonesia, Thailand, Phillipines



informal sector manufacturing activities. This may be related to the considerable importance that "putting out work" (sub-contracted assembly work) assumes for women's industrial role in these countries.

What is most characteristic for this group is the conspicuous concentration of female manufacturing employment in textile and garment industries. This is not surprising since these countries have followed a path to industrial development that is similar to the NIEs in cluster 3. Industrialization has until recently been mainly based on export oriented labour-intensive industries which rely heavily on cheap female labour. The exception is Indonesia which capitalized on its oil resource as a main export earner and used it as a basis for development of more technology and capital intensive industries, including synthetic fibres. The countries also benefited from direct foreign investment as a result of NIEs relocation of the textile and garment industries. Since many processes in the textile and especially clothing production still are labour intensive, it is easy to see how the comparative advantage in cheap labour has moved from Japan to the NIEs and later to these countries. However, parts of the production which have become capital, technology and skill intensive, such as the production of synthetic fibres, design and pattern making, are still retained by the NIEs.

Partly as a reflection of the recency of industrialization in these countries, educational and demographic achievements still lag somewhat behind those observed in clusters 3 and 4. Fertility rates are lowest in Thailand (2.5 births per women) and Sri Lanka (2.6 births per women), whereas the Philippines have the highest rate of 4.3. Female literacy rates are generally high for all four countries, the lowest of 70 percent being in Indonesia. Female students are quite well represented in the education system - though to a declining extent at the higher levels with the exception of the Philippines.

Women's political involvement represented in terms of percentage of women in parliament and cabinet posts is above the regional average for this cluster. The percentage of women in cabinet is highest in the Philippines, almost 8 per cent. The Philippines also stands out as a model in mainstreaming gender issues into economic and social planning process. The National Commission on the Role of Filipino Women was not only instrumental in the integration of women's concerns into the development planning process by formulating the Philippine Development Plan for Women (1989-1992), but has also been legally empowered to oversee the Plan's implementation. In Thailand, the 20-year Long Term Women's Plan (1982-2001) was prepared to give a guidance to the planning agency during the preparation of the five year development plans. Although a less holistic approach has been adopted than that in the Philippines, it sets a specific goals and indicators for monitoring their achievement. In Indonesia, the most recent Development Plan (1990-1994) perceives women's concerns as an integral part of the well being and welfare of the family unit. However, recognition of women specific needs is reflected in the recent proclamation of 1994 as the Year of Women in Development. Also in Sri Lanka, the Women's Charter 1993 provides a policy framework for addressing women specific concerns.

Cluster 3: Industrialized and newly industrializing countries with high rates of female economic participation in the modern sector and manufacturing employment, particularly in the electronics industry (Japan, Rep. of Korea, Hong Kong, Malaysia, Singapore)

This group of countries consists of countries at a different level of development. Japan, is one of the most advanced economies in the world and plays a leading role in the technological progress. The use of micro-electronics and informatics was instrumental in the transformation not only of the production processes but also in increasing demand for production related and other services. The shift in value added and employment away from manufacturing to services started in Japan in the 1970s. The NIEs in the cluster have been rapidly adopting some of the advanced technologies, especially in electronics and, except for the Republic of Korea, started the transition towards becoming service economies in the 1980s. Malaysia, with an advanced economic structure, fast growing industry and services and liberal trade policies is catching up with the NIEs.

In spite of the differences in development levels, the most prominent feature of this group is the high participation rate of women in the formal sector, particularly in the industrial labour force. Malaysia has the weakest participation rates in the group. The high level of female participation has been favoured by the development strategy adopted by these countries. The growth of their economies was based upon labour-intensive export oriented manufacturing which made use of cheap female labour especially in the textile and garment industries. However, the position of these industries has been eroded in the process of industrial restructuring and most of these industries have been relocated to low-wage countries elsewhere in the region. The electronics industry leads the industrial restructuring and the shift towards services. In Hong Kong the garment industry is still strong, but growth has slowed down. What is more, the industry no longer plays a dominant role in Hong Kong's economy. It is the most strongly service-oriented economy in the region.

The structural changes have had a clear implication for the pattern of employment. The inter-sectoral mobility is evident in the declining share of manufacturing employment in favour of the service sector. The intra-sectoral mobility, i.e. within manufacturing, reflects the declining importance of the textile and garment industries as the major employment generating manufacturing branches. The electronics industry has become the most important employer of the female industrial labour force in all countries in this group (see Table 6). Increases in female employment in the formal service sector has compensated in various degrees for the decreases in female employment in manufacturing experienced by all countries at different time periods. The highest increases in female employment in the service sector were recorded in Singapore which now has a higher female employment rate in services than Japan. The largest decreases in female manufacturing employment in terms of their share in the manufacturing labour force and also their share in the total female employment, occurred in Hong Kong. Nonetheless, Hong Kong still has a sizable female participation rate in the manufacturing sector. Malaysia has the highest and Japan the lowest manufacturing participation rate in the group.

The triangular relationship between economic growth, social and demographic changes and female economic role are most apparent in this group of countries. The fertility rates have

Table 6 System Characteristics of Cluster 3

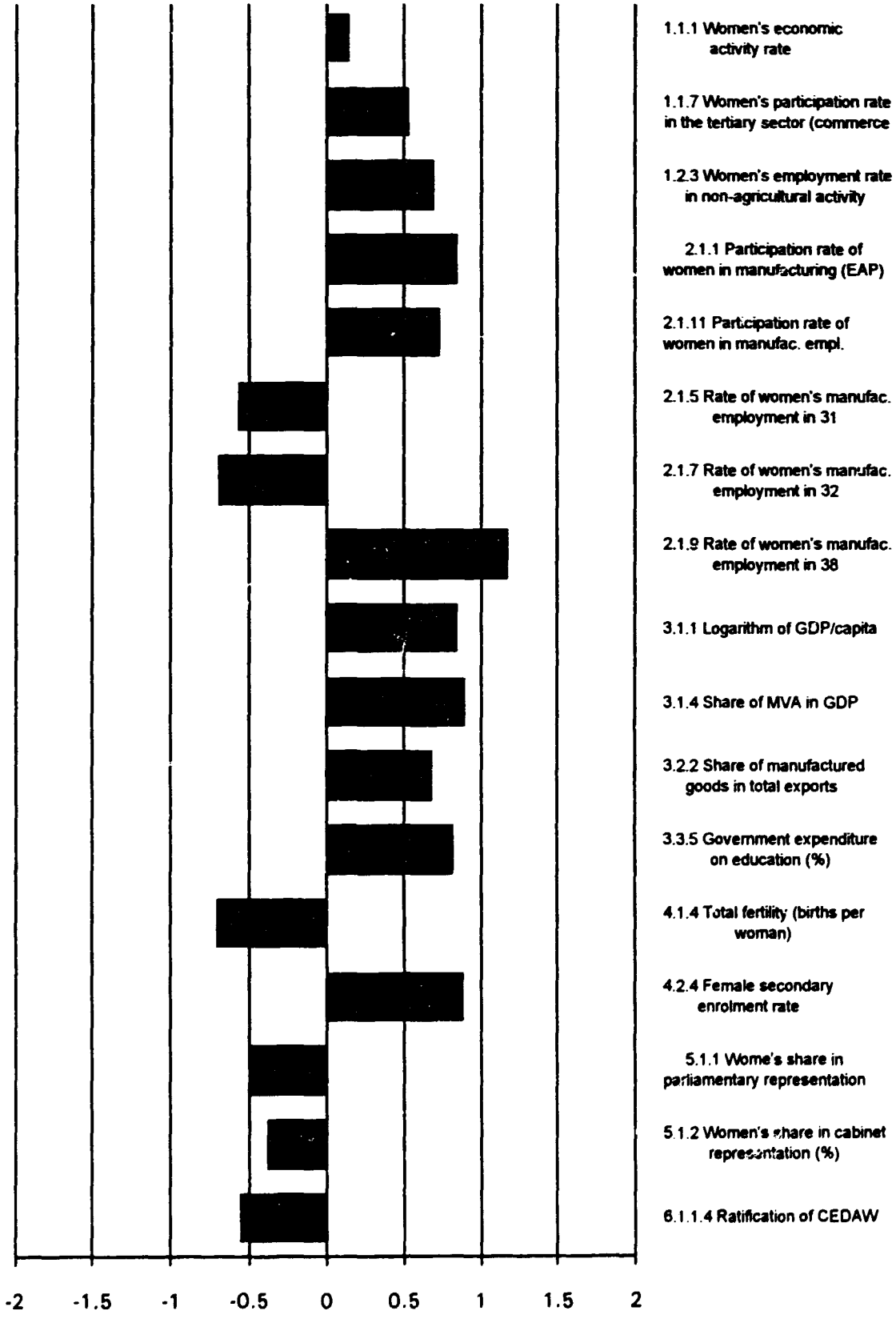
Ind. No.	Indicator	Japan	Korea	Hong Kong	Singapore	Malaysia
1.1.1*	Women's economic activity rate	41%	31%	37%	38%	27%
1.1.7*	Women's participation rate in the tertiary sector (commerce and services)	49%	49%	42%	57%	32%
1.2.3*	Women's employment rate in non-agricultural activity	92%	80%	99%	100%	75%
2.1.3*	Participation rate of women in manufacturing employment	36%	43%	47%	47%	51%
2.1.5*	Rate of women's manufacturing employment in the food, beverages and	20%	8%	2%	2%	6%
	tobacco sub-sector (31)					
2.1.7*	Rate of women's manufacturing employment in the textile, garments and	25%	35%	24%	14%	19%
	leather sub-sector (32)					
2.1.9*	Rate of women's manufacturing employment in metal, machinery and	37%	29%	32%	68%	46%
	equipment production (38)					
3.1.1*	Logarithm of GDP/capita	2.5	1.3	2.2	2.1	0.9
3.1.4*	Share of MVA in GDP	34%	37%	19%	29%	28%
3.2.2*	Share of manufactured goods in total exports	96%	94%	95	72%	54%
3.3.5*	Government expenditure on education (%)	17%	20%	15%	19%	15%
4.1.4*	Total fertility (births per woman)	1.6	1.7	1.3	1.6	4
4.2.4*	Female secondary enrolment rate	60%	51%	53%	46%	40%
5.1.1	Parliamentary Representation of Women	2%	2%	6%	5%	5%
5.1.2	Cabinet Representation of Women	2%	0%	2%	4%	1%
6.1.1.4	Signatory to CEDAW	1	1	0	0	0
	Disparity Indicator (- is in favour of men; + in favour of women)					
1.1.2*	Index male/female disparity in EAP	-0.7	-0.6	-0.6	-0.6	-0.6
1.1.8	Index male/female disparity in EAP participation rate in the tertiary sector	1.7	0.5	-0.2	-0.09	-0.2
2.1.2	Index of male/female disparity in EAP participation rate in manufacturing	-0.3	-0.3	-0.3	-0.2	-0.2
2.1.4	Index of male/female disparity in manufacturing employment	-0.4	-0.2	-0.1	0.1	-0.2
2.1.6	Index of male/female disparity in manufactuirng employment rate in sub-sector 31	-0.4	-0.1	-0.5	-0.4	-0.5
2.1.8	Index of male/female disparity in manufacturing employment rate in sub-sector 32	1.6	0.6	1.5	3.7	1.9
2.1.10	Index of male/female disparity in manufacturing employment rate in sub-sector 38	-0.4	-0.6	-0.5	0.2	1.2
4.2.5	Index of male/female disparity in secondary school enrolment rate	-0.03	-0.08	0.0007	0.002	0.017

*Included in the cluster analysis

+ Dummy variable, scale 0-2

Figure 13 CLUSTER CHARACTERISTICS

Cluster 3: Japan, Republic of Korea, Hong Kong, Singapore, Malaysia



declined to below 2 births per women for all countries except Malaysia. Access of women to education has improved considerably in all countries in the last two decades. At the primary school level, female enrolment rates exceed those for male students in all five countries. Female enrolment rates in primary and lower secondary education are close to 100 per cent in Japan and the NIEs. For the secondary enrolment in these countries, the female participation rate is above 50 per cent, with the exception of Singapore and Malaysia. The highest rate is recorded in Japan where representation of female students in total secondary school enrolment is almost equal to that of male students. At the tertiary level of education female participation is highest in Japan and the Republic of Korea with about 25 per cent of the relevant age group. The proportion of female students in total tertiary student enrolment is over 30 per cent.

Political participation of women is still low in all five countries. Only in Malaysia and Hong Kong is female parliamentary representation above 5 per cent. The lowest is in the Republic of Korea and Japan, 2 per cent. Both of these countries have a strong male dominated culture which is highly prejudicial against equal rights for women in the economic and political sphere. In Japan and the Republic of Korea the disparities in male-female earnings are the highest among the five countries and for Japan also highest among the OECD countries. Japan has ratified the International Convention on Elimination of All Discrimination Against Women only in 1985. In the Republic of Korea, the Sixth Five Year Plan (1987-1991) addresses specifically the problems of discrimination of women in the work place and gender disparities under the law.

Cluster 4 Industrialized countries with high levels of social development and high concentrations of women in the tertiary sector (Australia, New Zealand).

Both Australia and New Zealand have comparatively high levels of social development, and below replacement levels of fertility that facilitate relatively high levels of labour force participation for women (see Table 7). Life expectancy at birth was 79.9 years for Australian women in 1990 (compared with 73.8 years for men) and 79 years for New Zealand women in 1991 (compared with 73 for men) (*World Bank, 1993: 301*). Education is widely understood in both countries to be a key factor in achieving full and equal participation for women in all aspects of economic, social and cultural life, and both countries have implemented special programmes to enhance female participation in education at all levels. In 1992 in Australia, women's participation in education was higher than that of men at all levels of education except for Technical and Further Education (TAFE), and women had a slightly higher rate of full-time participation than men. However, female enrolment in the sciences, although rising, tended to be lower than that of men. Female enrolment in trade and technical courses is particularly low at the TAFE level. Despite the rapid increase in educational opportunities for young women in recent years, the proportion of women aged 15-69 years with post-school qualifications is 37 per cent lower than for men. Enrolment rates for women in New Zealand at secondary and higher levels of education are high but still slightly lower than for men. (*Australian figures from Australian Bureau of Statistics, March 1993, New Zealand figures from United Nations, 1991*).

On the demand side, the economies of both countries have undergone a far-reaching restructuring from the mid-1980s that has resulted in improved international competitiveness.

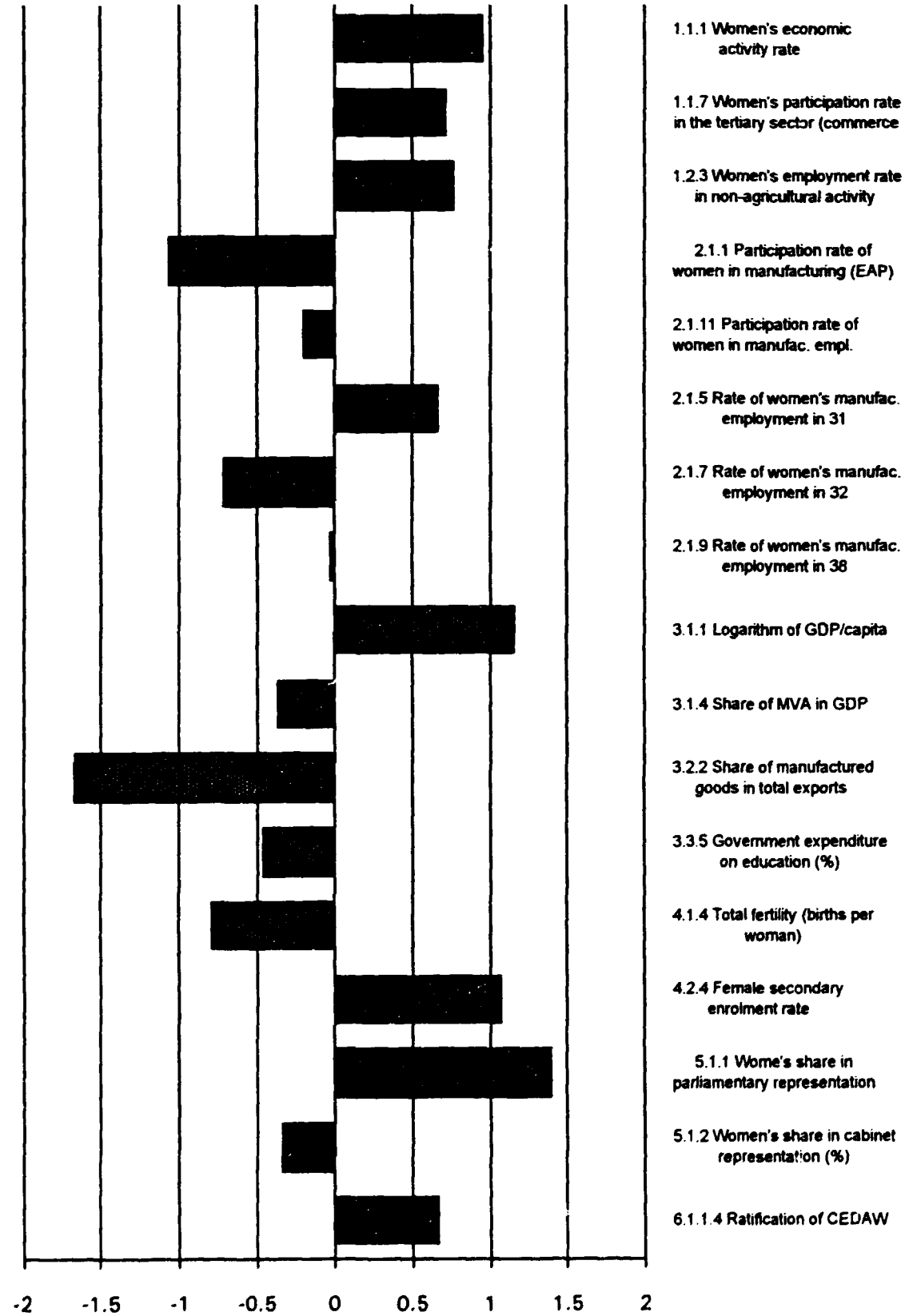
Table 7 System Characteristics of Cluster 4

Ind. No.	Indicator	Australia	New Zealand
1.1.1*	Women's economic activity rate	52%	37%
1.1.7*	Women's participation rate in the tertiary sector (commerce and services)	49%	49%
1.2.3*	Women's employment rate in non-agricultural activity	95%	89%
2.1.1*	Participation rate of women in manufacturing (EAP)	10%	10%
2.1.3*	Participation rate of women in manufacturing employment	28%	31%
2.1.5*	Rate of women's manufacturing employment in the food, beverages and	18%	24%
	tobacco sub-sector (31)		
2.1.7*	Rate of women's manufacturing employment in the textile, garments and	20%	24%
	leather sub-sector (32)		
2.1.9*	Rate of women's manufacturing employment in metal, machinery and	23%	14%
	equipment production (38)		
3.1.1*	Logarithm of GDP/capita	2.5	2
3.1.4*	Share of MVA in GDP	16%	20%
3.2.2*	Share of manufactured goods in total exports	15%	23%
3.3.5*	Government expenditure on education (%)	7%	13%
4.1.4*	Total fertility (births per woman)	1.8	2
4.2.4*	Female secondary enrolment rate	50%	60%
5.1.1	Parliamentary Representation of Women	7%	2%
5.1.2	Cabinet Representation of Women	2%	2%
6.1.1.4	Signatory to CEDAW +	1	1
	Disparity Indicator (- is in favour of men; + in favour of women)		
1.1.2*	Index male/female disparity in economic activity rate	-0.7	-0.8
1.1.8	Index male/female disparity in EAP participation in the tertiary sector	0.5	0.5
2.1.2	Index of male/female disparity in EAP participation rate in manufacturing	-0.6	-0.57
2.1.4	Index of male/female disparity in manufacturing employment	-0.6	-0.6
2.1.6	Index of male/female disparity in manufactuirng employment rate in sub-sector 31	-0.5	-0.6
2.1.8	Index of male/female disparity in manufacturing employment rate in sub-sector 32	0.7	0.6
2.1.10	Index of male/female disparity in manufacturing employment rate in sub-sector 38	-0.7	-0.7
4.2.5	Index of male/female disparity in secondary school enrolment rate	-0.01	-0.01

* Included in the cluster analysis + Dummy variable, scale 0-2

Figure 14

CLUSTER CHARACTERISTICS
Cluster 4: Australia, New Zealand



The manufacturing sector in N. w Zealand was hard hit by economic reform and decreased in size by one-third after 1984. In 1991, it provided 27 per cent of GDP compared with 24 per cent in 1970. Similarly, manufacturing in Australia in 1991 accounted for only 15 per cent of GDP, a marked decline from the 1970 figure of 24 per cent (*World Bank, 1993: 243*). However, in New Zealand the volume of manufacturing exports moved upward in 1992 after many years of negative growth. In Australia, the export share of GDP has increased steadily in recent years, although it is still less than expected for a country of its size. Similarly, the export share of GDP in New Zealand is lower than expected, although it is slightly higher than for Australia (see Table 7). In Australia, non-traditional exports of services and manufactures have contributed the whole of the increase in the export share of GDP (*Asia-Pacific Economics Group, 1993: 43*). Despite this, Australia also has the highest level of unemployment in the Asia-Pacific region. By contrast, recovery in New Zealand, which has been a result of strong growth in labour productivity, has been accompanied by a decline in unemployment (*Asia-Pacific Economic Group, 1993: 49-52*).

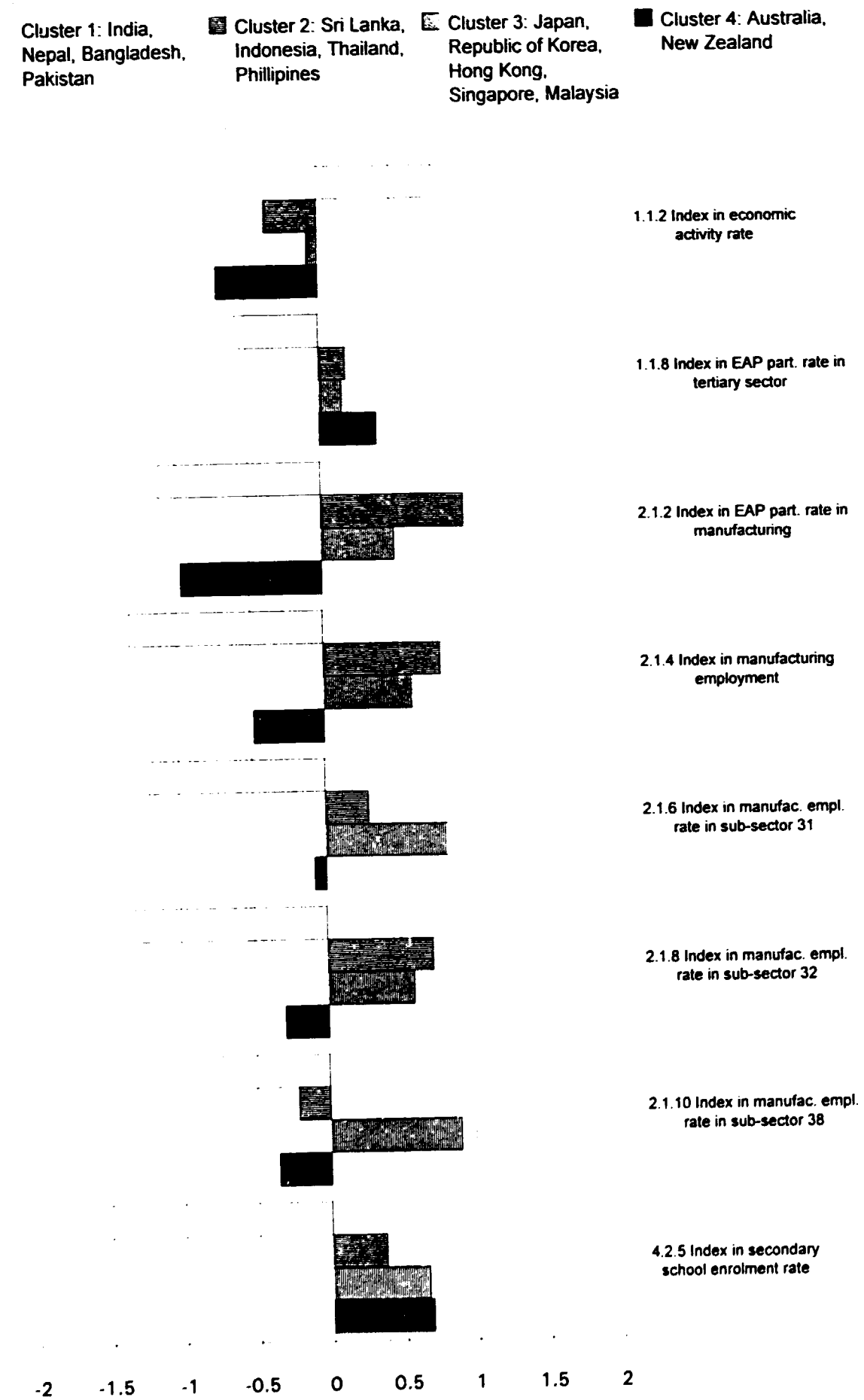
In Australia and New Zealand, female labour force participation rates have increased to moderate levels by international standards. In Australia, participation rates have increased particularly among married women, from 29 per cent in 1966 to 53 per cent in 1992. The presence of children is a more important determinant of labour force participation than marital status: married women aged 15-34 years without children and single women aged 15-24 years had the highest participation rates, 84 and 68 per cent respectively. However, women are more likely than men to be employed part time: in Australia in 1992, 75 per cent of part-time workers were women. Thus, women comprise only 38 per cent of the total labour force in Australia and 35 per cent in New Zealand. (*Australian figures from Australian Bureau of Statistics, March 1993, New Zealand figures from United Nations, 1991*).

The industrial restructuring of the late 1980s in both Australia and New Zealand tended to have the most negative impact on labour-intensive industries that formerly employed significant numbers of female workers. For example, despite rising female labour force participation and the economic recovery, the proportion of the female labour force employed in manufacturing fell from almost 13 per cent in 1982 to only 9 per cent in 1992, and the numbers employed remained almost unchanged. However, the female share of the manufacturing labour force actually increased marginally during the period from 25 to 27 per cent. The ratio of female to male workers among production, transport workers and labourers was higher in Australia, 28 women per 100 men. The corresponding proportion for New Zealand was 20. By contrast, women dominate the service sector in both countries: in Australia in 1992, 77 per cent of clerks and 66 per cent of salespersons and personal service workers were women. In New Zealand, 178 women were employed for every 100 men as clerical, sales and service workers. (*Australian figures from Australian Bureau of Statistics, March 1993, New Zealand figures from United Nations, 1991*).

Male/female wage disparities in Australia and New Zealand are less than in most other countries in the region (see Figure 15). Gender differentials wages have been largely eliminated in Australia due to the activities of the national arbitration system, which has been a major determinant of wage levels until recently, a national policy of equal opportunity for women in the labour force and tight labour markets until the late 1970s. However, gender differentials in earnings have persisted through a high degree of occupational segregation,

Figure 15

MALE/FEMALE DISPARITIES



Disparities below zero indicate participation rates in favour of men and above zero in favour of women.

the result of strong trade union pressures to preserve gender occupational stereotypes. Until recently, women's access to technical training, on-the-job and management training and capital to improve their productivity has been restricted by union and community attitudes.

Fiji and the Pacific Island countries: Small island nations with moderate levels of social development, high fertility, low levels of female labour force participation, and high levels of international migration, although differences are marked, both within and among countries.

The level of development in the Pacific Island countries is moderate, per capita incomes in 1990 ranging between a low of USD 590 for Solomon Islands and a high of USD 1 780 for Fiji (see Table 2). This enables the Pacific to enjoy comparatively high levels of social development. The levels of literacy, education and infant mortality in the Pacific are generally similar to those of the countries in Cluster 2, although those for some Pacific countries such as Papua New Guinea approach those more typical of Cluster 1. The level of fertility in most of the Pacific resembles that of Cluster 1, although rates of population growth in the smaller countries are lower, moderated by the impact of international migration, the importance of which is more comparable to that in the countries of Cluster 2.

The economic structure of the Pacific Island economies is unlike that in any of the country groupings represented in the cluster analysis. Economic structure and levels of economic development in the Pacific region vary markedly, both within and among countries. Many of the smaller countries are heavily dependent on foreign assistance but the larger countries such as Papua New Guinea, Solomons and Vanuatu and the more developed, such as Fiji, rely principally on exports of primary products and minerals. As a result of their small size and high degree of exposure to the international market, the rate of economic growth in the Pacific economies is volatile. For example, Fiji, Papua New Guinea, Tonga and Western Samoa all experienced a negative annual rate of growth of GDP in at least one year between 1990 and 1992, Western Samoa registering negative rates in all three years (Asia Development Bank, 1993: 164).

The Pacific economies tend to be dominated by the service sector, which contributed 62 per cent of GDP in 1992 in Fiji and 53 per cent in Tonga. By contrast, the share of the industrial sector is generally small, particularly in the smaller island nations. The industrial sector in the Pacific is not only small but also highly volatile, partly due to their dependence on external markets and partly due to the dominance of a few small industries. Between 1989 and 1993 the average annual rate of growth of value added in industry fluctuated between 7.0 and 10.7 per cent for Fiji, -14.1 and 30.0 per cent for Papua New Guinea, and -14.2 and 4.3 per cent for Tonga (*United Nations Economic and Social Commission for Asia and the Pacific, 1994: Table II.2*). In the Solomon Islands, garments and brewery production are the only two major industries, while in Fiji garments contributed 19 per cent of exports in 1992, a rapid increase from only 2.6 per cent in 1988 (*United Nations Economic and Social Commission for Asia and the Pacific, 1994: 59*). Manufacturing in Western Samoa is dominated by two export commodities, coconut oil and coconut cream (*Fairbairn, 1991; 24*). In 1991, the number of individual industrial enterprises in Vanuatu had increased from 61 to a total of 134 (*Republic of Vanuatu, 1992: 108-109*).

Within the industrial sector, manufacturing is comparatively small (see Table 2). Manufacturing in the Pacific is small-scale and dominated by import substitution industries. Consequently manufactures generally contribute only a small share of exports, although several export-oriented industries are among the largest industrial enterprises, and manufacturing exports are more important in countries such as Tonga, where they provided 29 per cent of total export earnings in 1989/90 (*Unisearch Ltd. 1991: 24*). By contrast, manufactures accounted for only 5 per cent of the total 1990 export value from the larger economy of Vanuatu, mostly from the export of micro-circuits and T-shirts (*Republic of Vanuatu, 1992: 108-110*).

Although manufacturing industry is generally small in the Pacific, due to the small size of the economies, the impact of growth in manufacturing can be substantial. For example, rapid expansion in manufacturing in Fiji between 1986 and 1991 resulted in an average annual rate of growth of manufacturing employment of 11 per cent which accounted for more than four-fifths of the total increase in paid employment during the period (*Treadgold, 1992: 24*).

The level of female participation in the labour force in the Pacific is generally low, reported levels resembling those typical of Cluster 1. As in the countries of Cluster 1, this is due to the lack of visibility of women's work in agriculture and the non-formal sectors rather than their non-involvement in work. The level of female employment in manufacturing is also comparatively low, the ratio of women per 100 men in the employed labour force being generally less than 20. Even in the service sector, where most employed women work, the proportion of female clerical, sales and service workers is always less than that of male workers, rising towards equality only in Tonga (*United Nations, 1991: Table 8*).

Transitional economies with comparatively high levels of social development for its low level of per capita income and high rates of female labour force participation.

a) China

The level of GDP per capita in 1990 would put China among the low income countries, compatible with countries in Cluster 1. However, manufacturing sector's contribution to GDP is over 40 per cent which is by far the highest compared to that of all sixteen countries included in the clustering analysis. The manufacturing structure is also advanced, comparable to, for example the Republic of Korea in Cluster 3. The fast rate of growth in the 1980s was a result of the economic reform programme and "open-door" policy adopted in 1978. The "three step forward" development strategy aims at considerable increases in GDP in a twenty year period, meeting the basic needs of the population and achieving parity with the standard of living of moderately developed countries. The emphasis on rural development resulted in 28 per cent contribution of township and village enterprises to the gross value of industrial output by the end of the 1980s.

The demographic indicators show a marked improvement since 1970. In 1991, life expectancy of Chinese women was 71 years which was four years longer than for men. This is compatible with the levels of countries in cluster 4. As a result of the family planning programme the total fertility rate was reduced from 5.8 in 1970 to 2.2 in 1990. This is just above the rate for countries in clusters 3 and 4. Compared to all 16 countries, China has the highest legal age at which women and man are allowed to marry, 20 and 22 years

respectively. Whereas the general tendency is towards rising average age at first marriage, the opposite seems to be the case in China. The average age at first marriage has been declining and is now approaching the minimum legal age.

Although access to education for women has improved over the last two decades, women constitute 70 per cent of the 180 million of illiterate and semi-illiterate population counted by the 1991 census. The illiteracy rate for women was estimated at 32 per cent and is reported to be rising. Female pupils accounted for about 47 per cent of primary school enrolments, about 45 percentage of enrolments in secondary education and vocational training, and 33 per cent of university and college students. Women constituted almost 40 per cent of enrolments in universities and colleges for adults. The enrolment rates for women still lag behind those of men even at the primary school level. This is comparable to the situation in some countries in Cluster 1. There are not only great disparity between female enrolments in urban and rural areas, but also in the number of completed school years. On average female students in urban areas have two more years of completed schooling than female students in rural areas.

Women's participation in the modern sector is as high as in Clusters 3 and 4, but it seems to be more evenly distributed among the different sectors of the economy and also between the urban and rural areas. The growth of rural industries and services resulted in over a quarter of the farm workers moving to non-farming activities between 1978 and the end of the 1980s. Women constitute over 40 per cent of this rural industrial labour force which represent about 22 per cent of the female work force in rural areas. Female representation among employees in state-owned and collective units has risen from 33 per cent in the late 1970s to 38 per cent in 1991. In the same year, women constituted over 40 per cent of the country's industrial labour force. This is compatible with countries in cluster 4. As a result of the "open door" policy and increasing foreign investment, female representation in the industrial labour force could be expected to increase, especially in the recently established export processing zones. On the other hand, there is a fear that privatization and decentralization may lead to a discrimination in recruitment of women in the now more autonomous enterprises.

The political philosophy adopted since 1949 contributed a great deal to social and economic enhancement of women. A legislative framework was created to eradicate political, social and economic inequalities between men and women and led to a favourable environment for women's economic participation. In 1993, 21 per cent of the deputies of the National People's Congress were women and 2 out of the 19 Vice chairman positions were occupied by women. 17 women held a ministerial or vice-minister post, constituting about 7 per cent of the total executive posts. The ministerial portfolios under a women minister include, among others, chemical industry, foreign trade and economic cooperation, and state family planning. The coverage of the need for child care facilities is 28 per cent at the national level but over 50 per cent in urban areas. The facilities are provides by state, communities and the private sector.

The most recent legislation, "Law of the People's Republic of China on the Protection of Rights and Interests of Women" was adopted at the Seventh National People's Congress and entered into force in October 1992. The law incorporates revised sets of previous Rules covering political rights, labour relations, rights and interests related to marriage and family,

and makes provisions with regard to property rights. The All China Women's Federation (ACWF), established in 1949, has played an important role in promoting women's status and safeguarding their legitimate rights. The ACWF is led by the Chinese Communist Party and is a broadly based national mass organization which represents and unites women with various ethnic and professional backgrounds. It works closely with Trade Union organizations at different levels and with over 2000 voluntary associations dealing with women related issues all over the country.

b) Vietnam

The official data on manufacturing and industry obtained on an enterprise basis from administrative statistics cover only the state sector, which has been declining in importance since the introduction of economic reform. The 1989 census showed that 46 per cent of the urban employed population (47 per cent of urban employed females) aged 13 years and over worked in the state sector. However, only 8 per cent of the rural employed population of working age worked in the state sector. In addition to this limited coverage, the administrative statistics suffer from an unknown but probably extensive level of double-counting arising from the system of classification used. Thus, the situation of women employed in industry in Vietnam must be inferred from limited census data and a small number of recent small-scale studies of specific industries and areas.

Vietnam is a poor country with a level of per capita income that would place it among the countries in Cluster 1. However, the level of social development is higher than would be expected on the basis of income, and compares more closely with that of some of the countries in Cluster 2, particularly in relation to infant mortality, literacy and education. As measured by per capita GDP (Net Material Product), estimated at only USD 113 in 1987, it is among the world's poorest countries. The figure is somewhat higher (USD 1,100 in 1990) when adjusted to purchasing power parity. It is ranked in the United Nations Human Development Report as having a low level of human development (*United Nations, 1993: Table 1*). However, adult literacy is high, 83 per cent in 1989 for women aged 15 and over and 93 per cent for men (*Asia Development Bank, 1993: Table 19*). School enrolment rates are also quite high: in 1989 80 per cent of girls and 74 per cent of boys aged 10 to 14 years are enroled in school, the female/male disparity being lower in urban areas where the figures were 86 and 87 per cent respectively (*Asia Development Bank, 1993: Table 20*). Life expectancy at birth is 64.8 years for women compared with 62.8 years for men. The infant mortality rate in 1989 was 46.3 per thousand live births for females and 48.4 for males. Fertility has been declining in recent years, the crude birth being 28.8 per thousand in 1992 and the rate of natural increase a comparatively low 2.1 per cent per annum (Asia Development Bank, 1993: Tables 15 and 16). In 1989, 50 per cent of women had married by age 22 (Asia Development Bank, 1993: Tables 9).

The international orientation of the Vietnamese economy has increased dramatically since the mid-1980s, increasing the prospects for a rapid expansion of export-oriented industry on the basis of the low cost but comparatively well-educated labour force. However, the vicissitudes and difficulties of economic reform, including inflation rates over 400 per cent during the period 1986-88, have produced rather variable aggregate growth rates, ranging from a high of 7.6 per cent in 1988 to a low of 1.2 per cent the following year. The fortunes of industry have also fluctuated: real growth in industrial output was 11.0 per cent in 1988, fell to -3.5

per cent in 1989, and rose again to 15.0 per cent in 1992 (*Asia Pacific Economics Group, 1993: Tables 12.3 and 12.4*). The ratio of exports to output is very low, lower than for any of the countries of Cluster 1, but has increased from less than 2 per cent in 1987 to 9 per cent in 1992 (*Asia Pacific Economics Group, 1993: 204*).

Economic reform and extensive concurrent military demobilization have led to serious problems of unemployment and underemployment. While total employment in the state sector has been decreasing by about 250,000 each year since 1989, some 500,000 soldiers have also been demobilized. Although the rate of population increase is relatively low (lower than in the countries of Cluster 3 but not as low as most of the countries in Cluster 4), due to past patterns of high fertility the population of working age continues to grow at 3.7 per cent per annum. Much of the labour generated by these processes has been absorbed by rapid growth in small-scale businesses, particularly in services, since 1988. However, an estimated 40 per cent of all business is conducted through black market channels and is thus unrecorded (*Asia Pacific Economics Group, 1993: 198*). The 1989 census showed that 39 per cent of the employed urban population of working age was employed in the "private and capitalist" economic sector (*Vietnam Population Census 1989, Volume IV: Table 5.5A*).

Female labour force participation rates in Vietnam are high and comparable with those of Cluster 4 rather than Cluster 3: 62 per cent in 1989 compared with a male rate of 82 per cent. The female participation rate varied by age and location. The urban female participation rate was considerably lower than the rural rate, 63 per cent compared with 77 per cent, while the highest rates were recorded for women aged 30-34 years of age. Industrial employment, which comprises 33 per cent of urban employment as defined in the Vietnamese classification system, is male dominated. Men provide 64 per cent of the industrial labour force. By contrast, women provide 79 per cent of the labour force for the category business, which also comprises 33 per cent of urban employment (*Vietnam Population Census, Volume IV: Table 5.5A*). Since much of this business is household-based, women comprise a large part of the labour force in the growing "black" and informal sectors. According to the Asia Development Bank, although most women in the labour force worked in agriculture (73 per cent), women comprised 49 per cent of the non-agricultural labour force in 1989. This is a particularly high share by international standards.

CHAPTER III - DEVELOPMENT TRENDS AND CHALLENGES

The analysis in the previous two chapters facilitates the assessment of constraints and enhancements of individual groups of countries which can also be interpreted as future challenges to the economic role of women in development. Inter-regional and international trade and investment appears to have been a crucial factor in stimulating economic growth in all countries included in the analysis. It is thus important that any proposed strategies for increasing women's economic participation consider development trends not only in the individual countries but the region and the world as a whole.

An increasing concern to all countries under review is the competitiveness of their products. Competitiveness changes as a result of the interplay between a country's internal and external economic environment. The global environment is becoming more and more important in setting the parameters of competitiveness which go beyond low cost production based on cheap labour. Globalization of production, creation of regional trading blocks, fast changing technology and demand conditions increase the pressures for structural changes in the composition and quality of internal factors of production. These new trends pose a big challenge to the use of human resources. Aspects of the global trends which are relevant to the labour market situation in the region and female labour force in particular are summarized below. Challenges and possible responses are discussed in the concluding section of this chapter.

3.1. GLOBAL DEVELOPMENT TRENDS

Technological and organizational changes

Introduction of computer-based technologies in the late 1970s had a profound effect on the manufacturing sector which significantly altered its structure and position first in the industrialized countries in the region. Increasing reliance on computer-based production technologies has led to the increase in capital-intensity of production. Recent technological innovations have been initiated more in response to changing demand conditions than minimizing labour costs. This has changed the emphasis from economies of scale to "economies of scope".

Technological changes have been accompanied by major organizational innovations altering buyer-supplier relations as well as production structure and management methods within the firm. Among the main innovations in this field is the concept of "just-in-time delivery" or "stockless production". In some sectors, use of computerized systems in management has led to productive decentralization through sub-contracting of work. Organizational changes introduced in the production processes within the firm include multi-skilled teams which perform the tasks of total quality management.

While cheap labour has lost much of its importance in the restructuring process, new organizational concepts put higher demands on the quality of the industrial labour force. As a result, the importance of labour-intensive production has been reduced and many low-skilled occupations made redundant. Changes in organizational structure has lead to the creation of more complex jobs which integrate production, quality control and maintenance tasks. The demand for multi-skilled labour force with a higher level of technical, organizational and cognitive skills is the new trend. The female industrial labour force has

been less adaptive to these changes due to the persistent disadvantages in female education and technical training background.

Relocation of manufacturing production

Structural changes in manufacturing production have led to major changes in the pattern of international flows of capital and production for export. Relocation of labour-intensive production to cheap labour areas continues to play a major role, as new patterns evolved and new actors come into play. Sector specific technology developments are of great relevance to the pattern of relocation. For example, in garment and knitwear production, automation still faces major technical constraints and cannot as yet fully compete with cheap labour. Thus search for cost competitiveness will continue to rely on relocation to low wage countries for some time.

Another important factor in the location strategies is linked to trade regulations. Restricted import quotas imposed by the European Union (EU) and the USA and the possibility to evade these regulations through production in least developed countries has been one of the major reasons for a considerable investments in garment industries made by the NIEs in Bangladesh. However, the recently concluded Uruguay Round of GATT negotiations will even out many of the present advantages of the Most Favoured Nations including many of the countries in region. Although the extension of the Multi-fibre Arrangement will still guarantee some preferential access for developing countries' textile and garment exports to the developed countries' markets for the next few years, the competition will get tougher. In addition, increased pressures from industrialized countries to improve employment conditions in the developing countries will erode these countries' labour cost advantage.

The competition in the labour-intensive and low-skilled industries in the region has intensified as China, Vietnam, Lao, Mongolia and Myanmar pose strong competition to wage levels especially to the ASEAN countries. The most common option used to cut production costs has been to reduce fixed costs of labour by shifting from direct to indirect forms of employment. This has led to wide spread sub-contracting to smaller units of production and working at home. This type of employment is most suited to women who have been exploited as a flexible low cost labour with no regulated salaries, working hours or entitlement to social security and benefits. This erosion of labour regulations pushed many women into informal sector the activities of which are generally excluded from official statistics. Addressing problems associated with this employment status is difficult in the absence of employment alternatives and organizational structures to voice the legitimate concerns of this hidden labour force.

Privatization and foreign investment

The recent trends point towards an increasing role of the private sector in most developing countries. In Asia, structural adjustments have resulted in a faster growth of private investment than in other developing regions. Privatization of public enterprises and market deregulation policies were adopted in different stages and degrees by a number of countries of various levels of development. Transferring more responsibility to the private sector not only for production but also for services including welfare, training and industrial research has implications for the labour market situation.

The transition from public to private enterprises is often associated with periods of rising unemployment, changes in occupational structure, more relaxed views on labour code regulations and discrimination in hiring practices. Reductions in government provision of social and welfare services has been accompanied by a large loss of female held jobs. Cost recovery pricing of services has led to the exclusion of the underprivileged groups of the population from these benefits. A large proportion of these are often women.

In the efforts to attract foreign investment, incentives often include deregulation of provisions made in the legal labour code such as minimum wage, conditions of employment and rights to form trade unions. Countries with export processing zones have also avoided ratification of the ILO Equal Remuneration Convention 100 of 1951. These countries include Hong Kong, Republic of Korea, Malaysia, Singapore, Sri Lanka and Thailand. Most of the labour force employed in the zones consists of women. The latest reported incidents of great exploitation in free trade zones in southern China led the government to intervene and take the side of the female workers. This was not the case in earlier labour arrests in the other countries.

"Tertiarization" of the economy and expansion of part-time work

Changes towards a more capital-intensive structure of the manufacturing sector and use of computer based technology has been accompanied by an increasing importance of the service sector. In the OECD countries, services have long surpassed the manufacturing sector as a major source of national income and employment. Services now contribute over 60 percent to GDP and employ a similar percentage of total labour force. In Hong Kong, the corresponding figures for the tertiary sector are even higher, past 70 percent. Highly specialized industry related services are gaining an increasingly large share of the sector and are becoming essential to competitiveness. This is a result of adopting cost reduction corporate strategies and coping with fast changing technology. Often used means for reducing fixed costs has been a transfer of production-related functions from inside manufacturing establishments to outside companies that offer services such as consulting, accounting, engineering, product development, management advice, training and advertising. Developing countries have concentrated only on reducing the fixed labour costs as described above.

The expansion of the tertiary sector has resulted in rising rates of female participation and improved female access to professional-technical and administrative-managerial positions. On the other hand, a large percentage of female employment in this sector is only on a part-time basis to deal with peak periods of business. Part-time employment is often taken under poorly paid, often irregular and unprotected employment conditions and frequently is not even officially registered. The conditions of part-time employment in the advanced economies are in principle comparable with sub-contracting work in developing countries. The classification of self-employment often masks this kind of informal sector employment. The availability of underutilized female labour, often married women with children who are willing or able to work only on a part-time basis made this group specially vulnerable and open for exploitation.

Labour migration

The Gulf crises in 1990-91 have brought to light the extent of labour migration from Asian countries outside the region. The sudden influx of returnees has affected, to a varying degree, the domestic labour markets in Bangladesh, Sri Lanka, Pakistan, India and the

Philippines. According to the ILO estimates, the annual rate of gross migration from Bangladesh to the Middle East has reached 97 000 in 1990 (*Martin Godfrey, ILO/ARTEP 1991*). Sri Lanka has about 300 000 migrant workers in the Middle East Pakistan workers only in Kuwait and Iraq numbered 95 000 and the number of repatriated workers from India was estimated at 137 000. A large number of these migrant workers are women employed as domestic servants, nurses or end up in the sex industry. Most of them are without any legal protection and social security. Governments in some of the Asian countries have taken steps to negotiate agreements with the respective Middle East states to protect their migrant workers and also control the spread of illegal recruitment agencies and setting maximum level for fees charged for recruitment services.

The levels of inter-regional overseas labour migration is difficult to estimate. Japan has been dealing with labour shortages in unskilled and semi-skilled jobs and circumventing the migration regulations by bringing in labour under the cover of training programmes. The tight labour markets in the NIEs led to some of the countries importing this labour from neighbouring countries both legally and illegally. The shortages of professionals and managers in Hong Kong is largely a result of emigration in anticipation of the 1997 reversion of Hong Kong to China. Recruitment of these categories of employees does not pose problems with the trade unions. However, allowing additional 12,000 additional foreign unskilled and semi-skilled workers into the country caused an outcry in 1990. Singapore is heavily dependent on foreign labour, especially in the construction and services. Most of the migrant workers come from Thailand and India. The conflict between foreign workers willing to work for low wages and local trade unions worried about erosion of their bargaining power has been to some extend mitigated by relocation of labour-intensive industries.

Importance of small-scale industries

Micro- and small-scale enterprises have played an important role during periods of economic restructuring and implementation of market oriented reforms. Increasingly, governments have become aware of the sector's employment generation potential in stimulating intra- and inter-sectoral linkages. The small scale sector also facilitates skill development and technology adaptation and innovation in the absence of institutionalized vocational training and industrial research. The enterprises often straddle formal and informal sector activities. The conditions for this sector to grow are often different from those for medium and large scale enterprises. Many of governments' incentives directed at promotion of industrial development have brought little, if any, benefits to this sector.

Involvement of women in traditional/informal production activities is usually much higher than for men and also compared to their participation in the formal economy. This is a result of greater flexibility and openness of the informal sector allowing women to combine productive and household activities. The pattern of women's involvement is influenced by economic/industrial structure of a country, as well as by socio-cultural factors. Particularly in countries at an early stage of development, women in rural areas are strongly involved in traditional processing activities, e.g., of food and textiles, largely as an extension of their role in the agricultural sector. Rural small industries are estimated to provide a supplementary source of income for, on average, some 50 per cent of women engaged in agriculture. Also in urban areas, women constitute a major labour force in all segments of the informal production and commerce sector. The involvement of women in the informal

sector tends to increase in times of economic stagnation when women increasingly have to contribute to the family income.

3.2. CHALLENGES FOR INDIVIDUAL GROUPS OF COUNTRIES

Cluster 1. Countries with low levels of social development, low status of women, and low general labour force participation of women but comparatively high female participation in industry (Nepal, Pakistan, Bangladesh, India).

Major challenges: Increasing women's participation and visibility in the labour force, particularly in paid employment; increasing women's functional literacy, skills and knowledge, and increasing access to education for girls.

The constraints to women's employment in the countries of Cluster 1 are considerable. The first is their invisibility. The low level of female labour force participation in the countries of Cluster 1 is due more to the invisibility of women's economic activity rather than their lack of involvement. Women's work is invisible because most women are confined to unpaid work in the family enterprises, particulary in agriculture, and because of the impact of cultural attitudes. Much of women's economic activity is unrecognized, even by the women themselves, and is unreported by heads of households and unrecorded in the official censuses. Consequently, the existence of women workers in industry and the impact is unrecognized. For example, labour regulations tend to refer only to men as if women workers did not exist.

In addition to their invisibility, women's access to important areas of economic activity, particularly paid work and employment in industry, is constrained by their low levels of literacy, education and technical skills and knowledge. High fertility, early child bearing and family and the burden of domestic work also restricts women's access to regular and paid employment. Those women who do work tend to be employed as casual workers in non-formal activities where they are unprotected by legislation or trade unions and often work under conditions that endanger their health and safety.

Increasing women's participation in the labour force, particularly in paid employment, offers the potential to markedly improve the status and position of women in the South Asian economies. As in Southeast and East Asia, increased opportunities for young urban women to work in factories have been observed to increase parents' willingness to educate their daughters (Arifin, 1984; Heyzer, 1986; Greenhalgh, 1988: 656). A recent study of female industrial employment in Pakistan observed that cultural perceptions of the appropriateness of certain roles for women were changing as more women entered the labour market (Kazi and Raza, 1991: 737).

Structural transformation of the South Asian economies due to industrialization and development will result in decreasing importance of agriculture in national economies and the general movement of labour from agriculture to industry. An increasing volume of female labour will be displaced from agriculture and the rural economy and will be forced to seek employment in the urban industrial and service sectors. Growing monetization will also increase the demands of families, particularly but not only poor families, for cash income. Women, as well as men, will face increasing pressure to join the paid labour force to

contribute to household cash income. Initially the main demand for urban labour in the economies of Cluster 1 will be for cheap unskilled labour for simple, repetitive production line tasks. It is likely that this will be increasingly provided by women, who offer the cheapest, least organized source of labour and who are conventionally considered to be particularly suited to this type of work.

The capacity of the industrial sector to offer such employment will depend largely on the macroeconomic policies adopted by South Asian governments. The analysis presented in this paper indicates that the South Asian economies of Cluster 1 have relatively small industrial sectors and are less export-oriented than most countries in the region. More liberal economic policies and the removal of protective barriers are likely to increase opportunities for labour-intensive industrial in both domestic and export market.

Governments in Cluster 1 also devote a relatively low share of government expenditure to basic needs, particularly education. Male/female disparities in both employment and human resources development are also much greater than in the other clusters. Governments need to greatly increase the overall level of expenditure directed to basic education and adult education and to the provision of primary and preventive health services directed toward women and children. Particular attention needs to be paid to the access of girl children to both education and health services in order to redress the serious gender disparities that exist in human resources development.

Cluster 2 Southeast and South Asian countries with a fast developing manufacturing sector and a high concentration of female manufacturing employment in the textile and clothing industry (Sri Lanka, Indonesia, Thailand, the Philippines).

Major challenge: Enabling women to cope with the shift to technology-intensive production and increasing productivity of female labour in the informal sector.

In most of these countries, the main development emphasis has been laid on manufacturing sector, with a focus on export production. Manufacturing is thus more advanced than other economic sectors. This explains why women's integration has progressed most in the modern manufacturing sector, and has otherwise remained quite traditionally oriented. For this reason, the future role of the manufacturing sector will be of key relevance to development and, in particular, to the role of women.

All the countries in this group are currently undergoing major processes of transformation, with manufacturing playing a lead role in this respect. The structural changes involve privatization and technology upgrading with a heavy reliance on foreign direct investment. The countries find themselves now at an intermediate stage of manufacturing development where cheap labour-intensive assembly production will lose importance in the years to come. What remains will move on to even cheaper locations or locations which offer other advantages. This trend has already been observed in Thailand. Indonesia which adopted manufactured export-led development strategy much later than the rest of the group and maintained wage levels low, does not feel the need for technology change so acutely as yet.

Export processing industry will have to move towards higher value added products to compensate for the loss of wage cost advantage. Considerations such as ensuring high flexibility of response to market demand, and the maintenance of high quality standards will become of increasing importance. These changes strongly favour the introduction of new technologies and the replication of organizational concepts adopted by the industrialized countries. Some countries in this group have already initiated a change in strategy in order to remain competitive. Foreign investment, especially from Japan, plays an important role in facilitating the technological change. To create an attractive investment environment many governments have opted for deregulation and trade liberalization policies. This has been particularly the case of Indonesia and Sri Lanka. The ability of the labour market to respond to these changes will depend on the education and training strategy. Key challenges for these countries will thus emerge mainly in the field of human resource development. In this context, main emphasis needs to be laid on the secondary and tertiary level of education, and on enhancing women's access to technical education and training.

The lack of attention paid to the efficiency levels of women's involvement in informal sector activities appears to be one of the main constraints to women's more productive participation in development. In all the countries in this group, except the Philippines, the largest share of female labour force is still in the agricultural sector. There are large disparities between educational levels and employment opportunities in rural and urban areas. A large rural-urban migration of young women workers was a common feature of the rapid increase in female industrial labour force in these countries with the exception of Indonesia. As the demand for cheap female factory workers declines, which already is the case in many of these countries, the importance of the informal sector increases. Many women have entered the informal sector as sub-contractors working from their homes but many ended up working in the sex industry, especially in Thailand and the Philippines.

Increasing the productivity level of female workers in the informal sector can be achieved by raising educational and skill levels in rural areas, technology upgrading, and improving working conditions in the sub-contracting industry. In all countries, the sociocultural barriers to women's productive role outside their homes have been substantially reduced. This came as a result of favourable economic and educational conditions which helped to enhance social status of women. Thus the major obstacles to further improvements seems to lay in the economic conditions less favourably disposed to female advancement. In all countries there is a strong commitment of government to the enhancement of women's economic participation and sufficient legal and institutional support. Political involvement and representation is also relatively high. Nonetheless, women are still absent from the high executive positions where decisions about economic policies and allocation of public resources are taken. Efforts should be directed to mainstream women's concerns into the development planning process. Higher representation of women in positions of economic and political power may enhance these efforts.

Cluster 3 Industrialized and newly industrializing countries with high rates of female economic participation in the modern sector and manufacturing employment, particularly in the electronics industry (Japan, Rep. of Korea, Hong Kong, Malaysia, Singapore).

Major challenge: Maintaining and enhancing women's position in the economy by increasing productivity and technological skills.

The Asian NIEs and to a lesser extent Malaysia have clearly left the low-wage, labour-intensive industry stage behind and are moving to technology intensive manufacturing with the attendant need for highly skilled human resources. Japan is already one step further. It has been characterized as being at the "brain intensive" stage of development, marked by a predominance of activities based on knowledge and information outside the manufacturing sector. But the trend away from manufacturing is already visible in the NIEs as well, with an increasing employment in the service sector, including activities normally classified as services within the manufacturing sector. These activities represent highly efficient inputs into the production system and have very little, if anything, in common with the traditional notion of services being low-skill, low- production activities.

Women are moving into services or into the growth industries. The services would generally be the domain of those with better educational levels, which are definitely rising in all these countries. Occupational mobility into higher professional levels is rising fast, but the numbers involved are still small.In the new growth industries, women are as yet predominantly found at the lower levels. A new group of usually better skilled marginal workers seems to be emerging: the home workers and subcontractors who are dependent on information intensive activities. The most vulnerable group is older married women doing unskilled work, their skill/education levels being too low to be of much use in the rapidly changing economy.

The educational and training system is responding with varying means and degrees of success in the individual economies. However, women are still a minority of the students in the subjects that matter, particularly with regard to skills and knowledge needed in manufacturing. The evidence about textiles/clothing specific training in Hong Kong and the Republic of Korea suggests that although women's representation in some of the courses is quite impressive, their representation in subjects required for higher technical and managerial posts remains very low.

Women appear to be better represented in education and training for services. Seen in the broader perspective of a shift towards service-dominated economies, the situation is therefore not altogether unfavourable for women, even if they have to cope with other obstacles such as biased hiring practices. It emphasizes, however, the need to further increase the participation of women in the relevant types of education and training; particular attention would have to be paid to those female workers in low-skill positions who are likely to be marginalized in the process.

The labour market in all countries is experiencing labour shortages, in particular of unskilled and semi-skilled workers to do the dirty, demanding and dangerous ("3-D") jobs. In Malaysia, the shortages are also felt in the plantation sector. The real issue for female labour

force in this cluster is thus not employment creation but conditions and types of employment. The main constraint to the improvement of the situation seems to be discriminating social environment rather than economic factors. The legal framework and institutional support to safeguard and enhance women's interests could play more important role in the process than it has done till now. Also, the media could be used more effectively in campaigns to change public image of women away from the traditional stereotypes and make women more aware of their legal rights.

Cluster 4 Industrialized countries with high levels of social development and high concentrations of women in the tertiary sector (Australia, New Zealand).

Major challenges: Reducing gender-based occupational segregation, increasing women's participation in management, and integrating work and family roles for both women and men.

Three major constraints are of special concern to women in the labour force in Australia and New Zealand These are the high degree of occupational segregation, women's poorer access to training and other avenues for upgrading their skills, particularly in technical fields and at the higher levels of management, and the need for improved family support services and other arrangements in the work place to facilitate the integration of work and family roles for both women and men. While women fill an increasing number of middle management positions, management restructuring has reduced the total number of middle managers and the "glass ceiling" phenomenon seems to bar them from senior levels of management and decision-making in the private sector. For example, very few women sit on the boards of major Australian companies.

The high level of occupational segregation is partly a consequence of the reluctance of girls to study science and mathematics subjects at senior secondary level, and low levels of female participation in traditionally male-dominated technical and trades areas of vocational education. Programs have been developed, particularly at the secondary and tertiary levels, to encourage women to enter trades and non-traditional occupations, but change in gender-based patterns of occupational segregation has been slow. Multi-skilling programs within the labour force have also assisted many women to improve their skills and move to non-traditional areas and more senior positions. However, the impact of multi-skilling on women has been greatest in clerical and services occupations.

The highest labour force participation rates for women in Australia are found among women aged 24-35 who do not have children. Recent studies have also shown that most women who return to the labour force after a period of absence due to child care return to jobs at much lower levels of income and skill than those they left. This suggests that the difficulties of combining work and family responsibilities are major obstacles to more effective utilization of women's human resources. A number of initiatives, including the provision of work-based childcare facilities, parental leave for either fathers or mothers after child birth and to care for sick children, more flexible working hours and job-sharing, are being implemented in order to increase the options for women with children. However, there are fears that the move toward collective-bargaining combined with women's limited participation in unions

and the weak unionization and bargaining power of workers in female-dominated industries may restrict progress in these areas.

Particular groups,particularly older, less well-educated and migrant women, face special problems in the changing labour market conditions of Cluster 4 countries. The demand for unskilled labour is declining rapidly, as labour-intensive industries relocate offshore to low wage economies and local industries move to higher technology, higher value-added forms of production. The flexibility of the education system in Australia and New Zealand has allowed many older women to return to formal education at the secondary and post-secondary levels to upgrade their education and skill levels to maintain and increase their employability. However, migrant women with low education levels from their countries of origin and limited English language skills are especially handicapped. Some will find continuing employment in a growing domestic service sector, thereby facilitating the labour force participation of other women, but other are likely to face high levels and extended periods of unemployment.

Fiji and the Pacific Island countries: Small island nations with moderate levels of social development, high fertility, low levels of female labour force participation, and high levels of international migration, although differences are marked, both within and among countries.

Major challenges: Increasing the level and visibility of women's labour force participation, particularly in paid employment; increasing women's participation in the formal industrial sector and mainstreaming women's concerns in decision-making.

As in Cluster 1 countries, the low levels of female labour force participation in the Pacific reflect lack of visibility rather than involvement of women in economic activity. Women in most Pacific economies are particularly active in food production in agriculture and the gathering of seafood from the reefs and shallow coastal waters. However, as in the South Asian economies, this work is often not recognized as economic activity, and development policy in the Pacific in both the agriculture and fisheries sectors often ignores the roles of women. Many Pacific women are also active in small-scale trades and handicraft production, which similarly suffers from low visibility. Women, men and policy-makers need to recognize the vital importance of these activities to the household and national economies.

The small island economies of the Pacific have few comparative advantages in industrial production. Although per capita incomes are low, a favourable natural environment provides livelihood security and comfortable living conditions. Pacific economies have experienced difficulty in attracting and maintaining industries other than rather small-scale enterprises targeted largely at the small and often highly dispersed domestic market. Low wages and relatively high levels of education combined with tax incentives, good institutional facilities and infrastructure have recently attracted larger export-oriented producers to a number of Pacific nations. However, rising wages and increasingly tight labour markets due to the impact of international migration, particularly of more skilled and educated workers, in countries such as Tonga threaten this development (Unisearch, 1991; 26).

In the long run, the greatest potential for manufacturing in the Pacific lies in niche markets producing specialized high value products based on a specialized, highly skilled and high productivity labour force. Given the small size of the labour force in many Pacific economies and lower rates of emigration among women, it is particularly important that women gain access to the technical education and training that will be required to create and sustain such a labour force. Employment in the tourist sector also offers potential for women. However, the growing sophistication and the intense competition of international tourism demands high standards of service and high productivity. Again, women must be given better access to technical and vocational education in personal services and to training in the tourist sector in order to be able to take advantage of these opportunities.

Transitional economies with comparatively high levels of social development for their low level of per capita income and high rates of female labour force participation.

Major challenges: Protecting employment and conditions for women workers in the state sector; extending these working conditions to other women workers; increasing women's productivity and access to paid employment in the non-state formal sector; maintaining and improving women's access to health and education.

China

Privatization and increasing involvement of foreign private investment in the economy is already showing signs of a negative effect on the female labour force. The privatized township enterprises are now allowed to conduct their own recruitment and setting employment conditions. As a result of the drive for efficiency, work force has been reduced. Although there are no official statistics on unemployment, the proportion of women among the "waiting for job" is reported to be higher than of men. Since only permanent workers are entitled to social benefits, the trend is towards employment of contract labour. Women, who have enjoyed social and legal protection of state enterprises are especially disadvantaged by this casualization of labour relations. Without government contribution, the cost of female labour works against their employment.

On the other hand, the Export Processing Zones have created demand for cheap female labour, mainly from the rural areas. It seems that the emerging pattern in terms of age structure, skill requirements and employment conditions of this labour force is similar to that observed in EPZ of other Asian countries. As noted earlier, the level of exploitation is high and there is a need for government intervention. The indications are that the turnover in labour force is high and women stay only as long as they save some money and get married.

In order to provide alternative means of employment for both the redundant women from state enterprises and those returning to work after having a child, having the appropriate skills for self employment will become very important. This will increase demand for training courses in technical and management skills appropriate to small scale enterprises. In addition, the service sector is developing fast and, as in other countries, will open new employment possibilities for women. Acquisition of skills in banking, finance, computer and marketing will enhance chances of women to benefit from these new opportunities.

Vietnam

Women in industrial employment in the transitional economy of Vietnam face rather special problems. A common perception, which unfortunately cannot yet be supported by data, is that the shedding of labour by the state sector and efforts to provide demobilized soldiers with jobs have resulted in the selective displacement of female labour. By international standards for countries at similar levels of development, Vietnamese women employed in the state sector enjoy good working conditions and equality of opportunity with men. However, it is increasingly obvious that private employers competing in international markets will not be able maintain these conditions for their female workers.

Current government policy favours pressure on employers to ensure that conditions for women workers do not deteriorate as a result of economic reform. However, special conditions for women, such as maternity leave, limited working hours during pregnancy and after childbirth, leave to attend to sick children, etc. increase the relative costs of female labour to employers. Where labour productivity is low and markets highly competitive, employers will be unwilling to carry these additional costs. Thus, there is also concern that the consequence of such policies may be that employment opportunities for women will decrease as employers replace women workers with men.

One sign of this is that, as elsewhere in the Asian region, the pressure of competition has already been associated with a growing recourse by industry to sub-contracting, adoption of "putting-out" systems and an increase in household-based economic activity. Such strategies offer some advantages to women with concurrent child rearing and family responsibilities. In the short term they also tend to contribute to the status of women because earnings in the primate economy are higher than in the state and government sectors which tend to retain male workers. However, work in household industry also tends to involve poorer working conditions, less access to welfare and pension benefits and increased risks. Thus, the long-term impact on the status of women is less clear.

A further matter of special concern to working women is the impact of the changed financing arrangements for social development programs, particularly in education and health, under privatization and economic renovation. Economic liberalization has brought working women many significant benefits, such as access to convenience foods, household appliances that reduce the burden of domestic work and a wider range of cheaper consumer goods of all kinds. However, privatization, the move to local financing of social programs and general pressure on public expenditure threaten to reduce the aggregate level of expenditure in areas such as education and health which are particular benefit to women. At the same time, the expansion of the private sector has raised the opportunity cost of labour. In a society that continues to place a higher value on sons than daughters, this is reported to have persuaded some households to selectively withdraw daughters from education in order to utilize their labour on the family farm and in household enterprises. Another, probably short-term, effect that has been reported is an increase in fertility due to the increased value of family labour. If sustained, this would have a negative effect on both women's education and their labour force participation.

CHAPTER IV. STRATEGIES

The advantage of the methodology adopted in this study is that it allows formulation of integrated programmes of strategies and plans of action relevant to the identified groups of countries sharing the same pattern of female economic and manufacturing participation. The following proposals of strategies and plans of action should be thus considered as integrated programme packages addressing the identified system constraints in the context of the challenges described in the preceeding chapter.

4.1. STRATEGIES AND PROPOSALS FOR ACTIONS COMMON TO ALL COUNTRY GROUPINGS

As some major constraints strongly emerged as being common to all country groupings, the first section of the chapter addresses the challenges and proposals for action to be dealt with at the level of the countries of the region as a whole, irrespective of the clusters to which they belong.

One of the most important issues in this respect relates to data collection and dissemination, due to the overall lack of gender disaggregated employment data. This aspect is developed in more details below.

In view of the variety of situations characterizing the countries of the regions, common constraints are better addressed under each of the country groupings under Section 4.2., however, some of these issues would also require actions to be taken at the regional level by international organizations, such as ESCAP, UNIDO, ITC or ILO, to name but a few.

The first such common issue concerns the needs for skills upgrading and training requirements at all levels. It is indeed understood that the needs to increase training opportunities to acquire new skills, improve upon traditional ones and introduce multi-skills programmes are of utmost importance to all the countries of the region, particularly in view of new and emerging technologies and revolutionary changes in product cycle and work organization. Regional programmes should thus be developed and/or adapted to address the needs specific to a sector or sub-sector of industry or in the field of organization and management. In doing so, the experiences of the more advanced countries in the region should be of particular relevance.

The second area which would require attention at the regional level and where the intimate knowledge of organizations such as ESCAP would be especially pertinent, concerns the establishment of networks of business and professional women as well as women entrepreneurs in the region. Those networks could be instrumental in disseminating information and exchange of views by learning from each others experiences and could constitute a platform for discussion on major issues and concerns relating to the participation of women in manufacturing.

The third aspect relates to the need for additional refined analysis and studies on some crucial economic and technological developments taking place in the region, i.e. there is a need to formulate forward looking strategies based on the impact of industrial and technological restructuring on women in manufacturing, focussing on areas such as the adoption of new

and emerging technologies, industrial relocation and privatization. In this respect, the joint cooperation of international organizations such as ESCAP, ITC and UNIDO should be sought.

Data collection and dissemination:

Data constraints on women's employment:

In general, women's concerns and interests are often ignored by decision-makers who lack the recognition of the needs for statistical data and information about women's work, particularly in household-based industry and non-formal activities. The data sources tend to focus on either women's work or family roles as the participation of women in work is often constrained by the demands of their domestic and family roles. Therefore, little effort has been made to examine the linkage between women's work and family roles within the context of women's contribution to the economy. The problems, disadvantages and discrimination experienced by working women are usually associated with gender relations. However, the conventional data sources fail to provide empirircal data and evidence on gender relations.

Challenges:

- Improving the widespread under-enumeration of women's participation in economic activity, particularly in the less developed countries.
- Developing methods to collect data on gender relations; even those conventional data sources that include information on women provide information on sex roles rather than on gender relations.
- Developing methods to incorporate a gender dimension into conventional enterprise-based surveys and administrative data systems, which typically provide very limited data on employees (many do not even provide sex disaggregations).
- Linking data on women's work and family roles in order to provide an understanding of the context of women's work.

Strategy	Proposals for Action	Actors
Improve methods of data collection on female labour force participation	Take action at the international level to assist countries to adopt improved methods of collecting data, such as have been developed by ILO, on female labour force participation and casual work in non-formal activities	National statistical agencies, ILO
Improve methods of data collection on women's work in household-based and non-formal activities	Undertake research to identify the main issues of concern to women workers in household-based and non-formal activities. Develop appropriate methods of collecting data on these issues.	National statistics agencies, national research bodies, international agencies

Strategy	Proposals for Action	Actors
	Integrate the collection of data on women's domestic roles, particularly their role as mothers, into the collection of data on women's work.	- - -
Improve methods of data collection on the gender dimensions of technology and women's employment	Undertake research to identify the gender dimensions of technology and the impact of technology on women's employment.	- - -
	Develop appropriate methods of collecting data on these issues. In particular, to improve the incorporation of the gender dimension in existing national systems of industrial and manufacturing censuses and surveys	National statistics agencies, UNIDO

4.2. STRATEGIES AND PROPOSALS FOR ACTION FOR INDIVIDUAL COUNTRY GROUPINGS

This section addresses strategies and Plans for Action for the four main country groupings only. It is clear, however, that the actions proposed hereunder are, in many respects, equally relevant for the other country groupings not formally included in the cluster analysis, i.e. Fiji and the Pacific Islands and the transitional economies, with emphasis on China and Vietnam, for which the major challenges have been identified under Chapter 3.

Cluster 1.

Countries with low levels of social development, low status of women, and low general labour force participation of women but comparatively high female participation in industry (Nepal, Pakistan, Bangladesh, India).

Major challenges:

- Increasing the level and visibility of women's participation in the labour force, particularly in paid non-agricultural employment.
- Increasing women's access to education, including their access to adult education and functional literacy.

Constraints on women's employment:

- Much of women's economic activity is unrecorded and unrecognized.
- The existence of women workers is ignored by labour regulations, etc..
- Women, particularly older women, have low levels of literacy and education: they lack skills and access to technology, technical knowledge and training.
- Women in small household enterprises lack basic business skills in book-keeping,

marketing, restricting their access to credit and finance. They also lack technical skills in production processes

- Most women in the formal sector are employed as casual workers under conditions that often prejudice their health and safety.
- Levels of unionization in feminized industries are low, and female participation in unions is low.
- Frequent and early childbearing and family responsibilities, combined with social and cultural restrictions on women's employment, restrict women's access to regular and paid employment.
- The technical capacity of the government women's agencies to represent the interests of women workers is limited.

Strategy	Proposals for Action	Actors
Increase women's labour force participation, particularly in paid employment Increase women's participation in paid employment in the industrial sector	Improve women's access to information about job opportunities through the creation of recruiting networks, work information centres, and job placement programmes for women	Non-governmental organizations, women workers organizations, departments of labour
	Undertake in-depth studies on the impact on women of industrial restructuring, industrial relocation and trade agreements	Governments, International Agencies (ESCAP, UNIDO, ITC)
Increase the visibility of women's participation in the labour force	Undertake awareness campaigns to ensure that women and men become aware of the extent of women's involvement in economic activity. Take steps to ensure that this is fully reported and recorded in all forms of data collection, including that collected by the administrative system	Departments of labour, statistical agencies, the media
Increase functional literacy and education and the level of production and business skills among women	Undertake specific work-related functional literacy and numeracy programmes for women	Non-governmental organizations, departments of education, departments of industry, workers associations
	Provide basic training in book-keeping, time management, and in relevant production skills to women in household-based and non-formal enterprises targeted to the various industry sub-sectors such as food processing, leather industries and textile and garment manufacture.	Non-governmental organizations, departments of education, departments of industry, workers associations, International Agencies (UNIDO/ILO)

Strategy	Proposals for Action	Actors
	Organize and provide training programmes in production skills of women working in rural industries particularly in relation to the use of chemicals, quality control, occupation health and safety, and access to appropriate technologies.	Non governmental organizations, Departments of Industry Associations, International Agencies (UNIDO, ILO)
	Assist women in both rural and urban areas to form cooperatives and associations, particularly at the community level.	Women organizations, non-governmental organizations, international organizations (UNIDO, ILO, ESCAP)
	Develop training of trainers at various industry sub-sectors through both training agencies and NGO networks at the community levels.	Non-governmental organizations, International Agencies (UNIDO)
	Review and adapt credit schemes, mechanisms accesible to women entrepreneurs	Financial institutions, International Agencies, (UNIDO, UNDP, UNIFEM, ILO, ESCAP)
Improve the productivity of and conditions for women working in factories	Assess the occupational health and safety of factories in industries and occupations dominated by women workers. Provide on-the-job training to enhance the skills and improve the productivity of women factory workers who already have a basic level of education to enable them to rise to supervisory and more highly paid positions.	Department of industry, women's organizations, trade unions, NGOs, International Agencies (ILO, UNIDO)
	Undertake gender training of employers and workers in industries and occupations dominated by women workers to ensure that the potential of women workers is recognized and utilized.	International Agencies (ILO, UNIDO, UNIFEM)
Reduce cultural and other barriers to the education of girls	Provide greater flexibility in the hours and location of schooling to allow girls who have domestic, childcare and work responsibilities in the home to continue their education	Industries, Governments, Women's agencies, Department of Labour
	Increase the work-relevance of the curriculum, particularly at the junior secondary level, to encourage girls to continue their education	Deparment of Education

Strategy	Proposals for Action	Actors
	Where culture and religious attitudes restrict girls' access to education, provide a culturally-acceptable educational environment for girls, such as all-girls schools, female teachers and special transport arrangements for girls	Department of Education, women's agencies
Strengthen the technical capacity of the government women's agencies to represent the interests of women workers	Devise and implement training programmes of officials in the government women's agencies to familiarize them with the problems of women workers	Specialized agencies, government women's agencies

Cluster 2

Southeast and South Asian countries with a fast developing manufacturing sector and a high concentration of female manufacturing employment in the textile and clothing industry (Sri Lanka, Indonesia, Thailand, the Philippines).

Major challenge:

- Enabling women to cope with the shift to technology-intensive production and increasing productivity of female labour in the informal sector.

Major constraints:

- Recruitment preference for women in unskilled and semiskilled jobs
- Low female enrolments in technical education and training
- Lack of visibility of female sub-contractors in the non-formal sector
- High unemployment rate for women leading to high migration
- Lack of access to decision making network

Strategy	Proposals for Action	Actors
Reduce gender imbalances in technical education and training	Provide counselling/career guidance in secondary schools about employment opportunities for women in higher industrial occupations	department of education, department of industry, department of women's affairs, employment agencies, women's professional organizations
	Develop and use role models of women in technical and managerial posts in industry	

Strategy	Proposals for Action	Actors
Change employers' recruitment and training attitudes towards women employees to enhance occupational mobility	Develop awareness campaigns to inform employers of the impact of changing market conditions on production technology and quality of labour force and benefits from investing in training of female industrial labour force within that context	department of industry, chambers of commerce and industry, UN agencies, trade unions
	Design and schedule training courses tailored to female workers' needs	department of industry, chambers of commerce and industry, trade unions, UN and donor agencies
Increase visibility of female subcontractors in the non-formal sector	Collect gender disaggregated data to reflect the actual condition of work done by female subcontractors in the non-formal sector	labour department, statistical office, UN agencies
	Mobilizate/organizate women's group among sub-contractors to lobby for improvement in employment conditions	trade unions, labour department, non-governmental organizations
Increase efficiency in the informal sector	Develop measures to increase access to technology and training for small entrepreneurs including returning female migrants	department of industry, non-governmental organizations, UN and donor agencies, UNIDO
Adapt training curricula to the emerging needs of the industrial sector	Develop tailor-made training programmes in entrepreneurship development and enhance capacities enabling women access to credit	department of industry, non-governmental organizations, UN and donor agencies, UNIDO
	Develop flexible training programmes for women in new technologies both in urban and rural areas, to respond to the changing demands of the industry	Training institutions, International Agencies, UNIDO
Mainstreaming women's concerns in economic planing, policies and management (female unemployment, female migrant workers)	Create ministerial and inter-ministerial committees dealing with policy issues affecting female industrial labour force	cabinet, department of women's affairs, labour department, industry department
	Gender sensitization of staff in ministries and government organizations dealing with economic and industrial development issues	department of women's affairs, employers association, UN and donor agencies

Cluster 3

Industrialized and newly industrializing countries with high rates of female economic participation in the modern sector and manufacturing employment, particularly in the electronics industry (Japan, Rep. of Korea, Hong Kong, Malaysia, Singapore).

Major challenge:

- Maintaining and enhancing women's position in the economy

Main constraints:

- High M/F occupational disparity
- Restricted employment and occupational mobility especially for married women and mothers
- High M/F disparity in high level technical education and training
  low political participation
- Strong effect of cultural factors influencing employment and occupational discrimination

Strategy	Proposals for Action	Actors
Raising female industrial labour force productivity and technological skills	Increase female enrolments in high technology related subjects by active encouragement and quota system for female students	department of education, women's department
	Offer women targeted scholarships by industrial enterprises tied to an employment offer	Government, employer, trade unions
	Increase access of women to in-service training programmes	Government, employer, trade unions
	Develop and implement training programmes in high technology skills, organization management, finance and marketing	training institutions, UN agencies, UNIDO, ESCAP
	Implement multi-skilling for women, in particular in industry	Department of education, international agencies (UNIDO, ESCAP, ILO, UNIFEM)
	Provide child care facilities at factory site	government, employer, trade unions
Changing public image about female non-traditional roles and occupations in industry	Provide counselling about career opportunities for women in high-tech industries	department of education, department of industry, women's professional organizations
	Implement public campaigns about new roles for women in high-tech industries	media, non-governmental organizations, UN agencies (UNESCO,UNIDO)

Strategy	Proposals for Action	Actors
Elimination of employment and occupational discrimination	Implement ILO CEDAW through strengthening and enforcement of a labour code	legal department, trade unions, legal agencies for women, ILO
	Undertake gender sensitization of employers	labour departments, non-governmental organizations, chambers of commerce and industry, UN and donor agencies
	Increase active participation of women in trade unions	trade unions, women's professional organizations, ILO

Cluster 4

Industrialized countries with high levels of social development and high concentrations of women in the tertiary sector (Australia, New Zealand).

Major challenges:

- Reducing gender-based occupational segregation, increasing women's participation in management, and integrating work and family roles for both women and men.

Constraints on women's employment:

- Marked gender-based occupational segregation; women are concentrated in the service sector and in lower productivity, lower paid occupations.
- Low levels of education and training among many older, migrant and aboriginal women. The persistence of cultural stereotypes of appropriate gender roles discourages many women from entering technical education, training and occupations.
- Structural discrimination due to the impact of gender stereotypes and women's lack of access to mentors, influential social networks etc. results in a "glass ceiling"; few women promoted to senior management positions in the private sector.
- Many work practices, particularly at senior levels, conflict with women's family roles, particularly their role as mothers.
- Many women re-entering the labour force after absences due to child-bearing and child-rearing are employed well below their exit levels of skill and seniority. Unionization is weak in female-dominated industries.
- Women are poorly represented in trades unions, even in female-dominated industries.

Note that the proposals for the countries in this cluster represent activities that may also be relevant to particular groups of women in the other clusters, particularly in cluster 3.

Strategy	Proposals for Action	Actors
Increasing women's access to technical education, training and employment	Introduce affirmative action programmes in technical education and training Promote and encourage women to enter traditionally male-dominated occupations, particularly in the trades and technical occupations Revise technical education and training curricula and materials to eliminate gender stereotypes	Departments of education; Educational institutions; Employers (private and public sector); Training institutions; Departments of labour; Media
Increasing women's skill levels, particularly for older, aboriginal and migrant women	Develop and provide basic literacy and numeracy programmes for older, aboriginal and migrant women Implement multi-skilling for women in the work force, particularly in industry	Employers; Adult education bodies; Open learning organizations; Public television and radio; Training agencies and institutions
Changing cultural perceptions of appropriate gender roles at work and in the family	Promote female role models working in non-traditional occupations and activities Undertake campaigns to challenge gender stereotypes of work and family roles for women and men and encourage male participation in domestic work and child-rearing	Media; Women's organizations; Schools and educational institutions
Breaking the "glass ceiling" - elimination of structural discrimination against women, particularly in the private sector and at senior levels of management and encouraging women to accept senior management positions	Organize mentoring programmes for women in senior management Provide gender awareness programmes for women and men in the private sector, particularly employers and senior managers Develop gender-aware networks among women in middle and senior levels of management and in professional bodies Promote increased flexibility, job-sharing, part-time and home-based work to more senior levels to encourage more women to accept senior positions	Women's groups; Private sector; Professional bodies

Strategy	Proposals for Action	Actors
Increasing the flexibility of work practices for both women and men to reduce conflict between their work and family roles	Introduce and promote flexible working hours, home-based work, job-sharing and part-time employment for both women and men	Departments of labour; Trades Unions; Women's organizations
Improving opportunities for women re-entering the work force after child-bearing/rearing	Organize re-training, re-orientation and job placement programmes for women re-entering the work force	Departments of labour; Training institutions; Job placement agencies; Women's organizations
Increasing women's participation in trade unions and professional bodies	Undertake and promote awareness programmes to encourage women's rank and file participation in trade union activity	Trades unions; Women's organizations
	Provide training programmes in leadership skills to prepare women for participation in trade union management	
	Develop gender-aware networks to encourage women's participation in trade union activity and leadership	

METHODOLOGICAL ANNEX — Annex A

Techniques of statistical analysis applied

Cluster analysis is a multivariate statistical technique that groups an observed sample population into relatively homogeneous classes, thus producing a classification. Objects are partitioned in such a way that they are similar to each other within one group but different from objects contained in another cluster[1]. Different clustering techniques exist, each with specific characteristics. Two of the methods occurring most frequently in the cluster analysis literature were employed: Ward's Minimum Variance Method and the Average Linkage Method. Both belong to the hierarchical methods in which one cluster may be entirely contained within another (larger) cluster, but which permit no other kind of overlap. The number of clusters to be distinguished depends on the requirements of the analysis, and is determined deliberately (or according to the required level of aggregation).

Results presented here are based on Ward's method, which proved to yield consistently satisfactory results. In successive steps, this method joins together (or considers to be most similar) objects that add least to the sum of squared distances between all objects in a group.

Cluster analysis can be used to identify groups of countries and their main characteristics with regard to women's status. But it is essentially a descriptive tool which does not provide information on how and to what extent the different variables have a (statistical) relationship such as correlation analysis with the status of women; nor does it indicate the statistical relationships which may exist between the variables. For this purpose, other statistical analyses and principal analysis were used.

Factor analysis, another tool of multivariate analysis, identifies latent variables or influences which explain the correlations or covariations occurring within a set of variables. The factors are hypothetical constructs which cannot actually be observed, but are represented in and underlay the original variables[2]. In this study, factor analysis helped to identify major influences on the status of women which are represented in the data set and can be assumed to have a significant impact on the observed clustering pattern.

The factor pattern resulting from an analysis (see Section 2 of this Annex) indicates the variables which are most strongly reflected in these factors. These are the variables with the highest *loadings* - a concept similar to the correlation of the variables with the factor. The *eigenvalue* indicates how much of the variance in the original set of variables is accounted for and explained by one factor. Factors with eigenvalues below 1 are generally eliminated from the analysis.

Principal component analysis is based on similar principles as factor analysis. It proved

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[1] See Everitt, 1980, for a review of the methods and limitations of cluster analysis

[2] See Berlage/Terweduwe 1988.

particularly valuable in exploratory data review, and was used to reduce the number of variables for regression, clustering and other types of analysis.

Regression analysis is another method of measuring relationships between variables, in this case between a dependent or response variable and one or more independent or predictor variables. This statistical method is mainly used for purposes of prediction, model specification and parameter estimation (Gunst/Mason, 1980). It can also be applied in an exploratory fashion to look for empirical relationships between variables, and to assess the extent to which one variable can be predicted on the basis of knowledge about another variable.

The value of a dependent variable can be derived from knowledge of the score of one independent variable by *simple linear regression.* The degree of linear relationship between these variables can thus be examined. *Multiple regression analysis* measures the extent to which one dependent or response variable can be predicted on the basis of more than one independent variable. In the present study, regression analysis was only used to a very limited extent.

Correlation analysis measures the extent to which two variables covary together, i.e. to which one variable can be predicted from the other. It is used to identify the mutual relationship or similarity of two variables. In the present study, it was applied to identify relationships between indicators across and within the sub-systems and was particularly useful in reducing the original number of indicators for the final cluster analysis.

A value of the coefficient of correlation r close to 1 indicates a high positive correlation between two variables, if it is close to -1, the correlation is high and negative. If the value of *r* is 0 or close to 0, no relationship exists. While a correlation of 0.7 is generally regarded as high, interpretation of the extent of correlation depends to a large extent on the "typical" relationship between two variables, and thus on judgement[3]. Correlation analysis does not indicate the type of relationship between two variables, or whether there is a direct or indirect relationship between two variables. Variables can also have a curvilinear association which must be measured by expressing the variables in linear terms. The extent of the relationship between two variables can also be expressed through the *coefficient of determination* equal to *r square.* If the correlation co-efficient *r* is above 0.7 or below -0.7, then *r square* is more than 0.5 (in fact 0.49). That means that around 50 per cent or more of the variance of one variable can be predicted through the other variable, and vice versa.

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[3] Jaeger 1990, p. 66.

Annex B

SOURCES FOR VARIABLES AND INDICATORS

Number	Name	Sources
I. LABOUR FORCE CHARACTERISTICS		
Variable 1.1 Size and distribution of Economically Active Population (EAP)		
1.1.1	Women's economic activity rate	ILO (1) Table 1, WISTAT (2) and ADB(3)
1.1.2	Index male/female disparity in economic activity rate	ILO Table 1, WISTAT and ADB
1.1.5	Women's participation rate in the agricultural sector	ADB, Table 25
1.1.6	Index male/female disparity in EAP participation rate in agriculture	ADB, Table 25
1.1.7	Women's participation rate in the tertiary sector (commerce and services)	ADB, Table 25
1.1.8	Index male/female disparity in EAP participation rate in the tertiary sector	ADB, Table 25
Variable 1.2 Size and distribution of employment		
1.2.1	Women's share in total employment	ILO Table 3A
1.2.2	Index of male/female disparity in employment rate	ILO Table 3A
1.2.3	Women's employment rate in non-agricultural activity	ILO Table 4
1.2.9	Women's employment rate	ILO Table 3A
Variable 1.5 Occupational Status		
1.5.1	Women's participation rate in professional and technical positions (category 01/1)	ILO Table 3C
1.5.2	Index of male/female disparity in category 01/1	ILO Table 3C
1.5.4	Index of male/female disparity in category 2	ILO Table 3C
1.5.8	Index of male/female disparity in category 8	ILO Table 3C
II. INDUSTRIAL LABOUR FORCE CHARACTERISTICS		
Variable 2.1 Size and distribution		
2.1.1	Participation rate of women in manufacturing (EAP)	ILO Table 2A
2.1.2	Index of male/female disparity in EAP participation rate in manufacturing	ILO Table 2A
2.1.3	Women's share in total manufacturing employment	ILO Table 5A; UNIDO (4)
2.1.4	Index of male/female disparity in manufacturing employment	ILO Table 5A, UNIDO
2.1.5	Rate of women's manufacturing employment in the food, beverages and tobacco sub-sector (31)	ILO Table 5B, UNIDO
2.1.6	Index of male/female disparity in manufacturing employment rate in sub-sector 31	ILO Table 5B, UNIDO
2.1.7	Rate of women's manufacturing employment in the textile, garments and leather sub-sector (32)	ILO Table 5B, UNIDO
2.1.8	Index of male/female disparity in manufacturing employment rate in sub-sector 32	ILO Table 5B, UNIDO
2.1.9	Rate of women's manufacturing employment in metal, machinery and equipment production (38)	ILO Table 5B, UNIDO
2.1.10	Index of male/female disparity in manufacturing employment rate in sub-sector 38	ILO Table 5B, UNIDO
2.1.11	Participation rate of women in manufacturing employment	ILO Table 5A, UNIDO
III. ECONOMIC AND INDUSTRIAL ENVIRONMENT		
Variable 3.1 Level of economic development		
3.1.1.	Logarithm of GDP/capita	UNIDO
3.1.2	Share of the agricultural sector in GDP	UNIDO
3.1.3	Share of the tertiary sector in GDP	UNIDO
3.1.4	Share of MVA in GDP	UNIDO
3.1.5	Share of exports in GDP	UNIDO
3.1.8	Share of government expenditure in GDP	UNIDO
3.1.9	GDP / capita	UNIDO
Variable 3.2 Level of industrial development		
3.2.1	Logarithm of MVA/capita	UNIDO
3.2.2	Share of manufactured goods in total exports	UNIDO
3.2.3	Share of the food and textile sub-sectors (31 and 32) in total MVA	UNIDO
3.2.4	Share of metal, machinery and equipment products (38) in total MVA	UNIDO
3.2.5	MVA / capita	UNIDO

Annex B SOURCES FOR VARIABLES AND INDICATORS

Variable 3.3 Infrastructure		
3 3 2	Length of road per 1000 square kilomentres	ESCAP '93 (5), Statesman YB '93 (6)
3 3 3	Number of radio receivers per 1000 inhabitants	ESCAP '93, Statesman YB '93
3 3 4	Government expenditure on basic human needs (%)	ESCAP '93
3 3 5	Government expenditure on education (%)	ESCAP '93
IV. SOCIAL AND DEMOGRAPHIC CONDITIONS		
Variable 4.1 Size and distribution of population		
4 1 1	Urbanization population (%)	WISTAT
4 1 3	Index of male/female disparity in life expectancy at birth	WISTAT
4 1 4	Total fertility (births per woman)	WISTAT
4 1 5	Mean age at first marriage for women	WISTAT
4 1 8	Female headed households (%)	WISTAT
Variable 4.2 Access to education		
4 2 1	Index of male/female disparity in literacy rates	WISTAT
4 2 2	Female primary enrolement rate	WISTAT
4 2 3	Index of male/female disparity in primary school enrolment rate	WISTAT
4 2 4	Female secondary enrolment rate	WISTAT
4 2 5	Index of male/female disparity in secondary school enrolment rate	WISTAT
4 2 6	Female tertiary enrolment rate	WISTAT
4 2 7	Index of male/female disparity in tertiary school enrolment rate	WISTAT
V. POLITICAL ENVIRONMENT		
Variable 5.1 Distribution of power		
5 1 1	Wome's share in parliamentary representation (%)	WISTAT
5 1 2	Women's share in cabinet representation (%)	DAW (7)
VI. LEGAL AND INSTITUTIONAL FRAMEWORK (qualitative = dummy variables)		
Variable 6.1 Legal protection *		
6 1 1 1	Ratification of ILO Conv. 100 - Equal renumeration, 1951	ILO (8)
6 1 1 2	Ratification of ILO Conv 111 - Discrimination (Employment and Occupation),1958	ILO
6 1 1 4	Ratification of the International Convention on elimination of all discrimination against women (CEDAW)	WISTAT

(1) Database of the International Labour Organisation, Geneva
(2) United Nations Database on Women's Indicators and Statistics (WISTAT)
(3) Asian Development Bank (1993) Gender Indicators of Developing Asian and Pacific Countries, Manila (hardcopy and diskette)
(4) Database of the United Nations Industrial Development Organisation (UNIDO)
(5) United Nations Economic and Social Commission for Asia and the Pacific (1993)
Compendium of Social Development Indicators in the ESCAP Region
Quality of Life in the ESCAP Region, Bangkok (Hard copy and diskette)
(6) Paxton, John Ed (1993) The Statesman Yearbook 1993-94 Macmillan London
(7) Division for the Advancement of Women (1993) Directory of National Machinery for the Advancement of Women, Vienna
(8) International Labour Organisation (1993) Lists of Ratifications by Conventions and by Country Report II Part 5 Geneva

GLOSSARY

Administrative and managerial workers (major group 2)

According to the International Standard Classification of Occupations (ISCO-1968), major group 2 includes administrative and managerial workers, such as legislative officials and government administrators, as well as managers.

Economically active population

As defined by the International Labour Organization (ILO), the economically active population comprises all persons of either sex who furnish labour for the production of economic goods and services as defined by the United Nations systems of national accounts and balances, during a specified time period. This includes all production, whether for the market, for barter or for own consumption, and whether consisting of goods or services. Two useful measures for the economically active population are the usually active population measured in relation to a long reference period such as a year, and the currently active population, or its equivalent, the labour force, measured in relation to a short reference period such as a day or a week.

Employee

Employee, according to the classification by status, in the present document defines a person who receives a remuneration (in money or in kind) for working for a public or private employer. In general, it refers to someone working in the formal or modern sector.

Employment

Employment is used in the present document to describe that part of the economically active population which has employee status.

Formal sector

The division between the formal and informal sector is not clear-cut, although it has been a subject of much debate, in which the ILO has played a prominent part. For the purpose of the present analysis, the formal - or modern - sector has been defined as activities outside agriculture and taking place in registered enterprises. The labour force in formal sector enterprises would normally consist of employees.

Formal manufacturing sector

The formal or modern manufacturing sector has been defined as comprising registered firms; usually, the labour force in these firms would have employee status.

Industrial sector

This sector is often defined as comprising - apart from the manufacturing sector - energy production, mining and construction. In most countries, manufacturing is by far the most important activity in this sector, and in the present document "industrial" is used as a synonym for manufacturing.

Informal sector

This sector comprises activities which are not included in the official data collection systems and are outside the reach of legal and institutional sphere of influence. In the study, the informal sector also includes those casualized labour force.

Indicator

In the present document, the term indicator is applied to statistically measurable variables of women's role. An example of an indicator would be gross domestic product per capita which is one measure of overall economic development.

Labour force

The currently active population, see under economically active population. In the present context, the terms economically active population and labour force are used synonymously.

Manufacturing sector

Manufacturing is defined as the mechanical or chemical transformation of inorganic or organic substances into new products, by machines or by hand, in a factory or in the worker's home. The definition usually includes assembly of component parts of manufactured products.

Modern sector

Like the other sectors, the modern sector is not clearly defined. For the present purpose, it was measured through indicators reflecting women's participation in non-agricultural activities as well as measures of women's share among salaried and wage earners. The term is thus used synomynously to formal sector.

Modern manufacturing sector

For the present purpose, this is synonymous to the formal manufacturing sector.

Part-time work

According to the ILO this is work on a regular or voluntary basis for a daily or weekly period of substantially shorter duration that current or normal statutory hours of work.

Professional and technical workers (major group 0/1)

According to ISCO-1968, major group 0/1 includes professional, technical and related workers, e.g., physical scientists, architects, medical and dental workers, statisticians, economists, jurists, teachers, authors, artists and sportsmen.

Segregation

Women's participation in the economy, it is assumed, takes place on unequal terms, and is characterized by patterns of "vertical" and "horizontal" segregation. "Vertical" or industrial segregation refers to the tendency for female participation to concentrate in a limited number of manufacturing branches, mainly light industries characterized by assembly-type production which requires a large amount of cheap unskilled labour. "Horizontal" or occupational segregation describes the tendency for women to be over-proportionately represented in low-skilled production jobs at the lower end of the occupational hierarchy.

Status

"The status of an economically active individual with respect to his or her employment, that is, whether the person is (or was, if unemployed) an employer, own-account worker, employee, unpaid family worker, or a member of a producers' co-operative" (ILO Year Book).

Tertiary sector

According to the International Standard Industrial Classification of all Economic Activities (ISIC-1968) this sector comprises wholesale and retail trade and restaurants and hotels; transport, storage and communications; financing, insurance, real estate and business services; and community, social and personal services.

Traditional sector

In this study, the term is synomynous to informal sector.

Workers (major group 7/8/9)

According to ISCO-1968, major group 7/8/9 includes production and related workers, transport equipment operators and labourers. Examples are miners, workers in manufacturing, artisans and construction workers.

Variable

In the context of the present study, the term variable is applied to describe a factor influencing the social position and economic role of women (in the terminology of sectoral typologies, the term is 'component'). Variables are statistically measured through indicators, and thus describe a larger entity than these.

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