

ASIA-PACIFIC FORESTRY SECTOR OUTLOOK STUDY II

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THE RELEVANCE AND IMPACT OF GENDER ISSUES ON THE OUTLOOK FOR FORESTRY TO 2020 IN NORTH ASIA

by

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INFORMATION NOTE ON THE ASIA-PACIFIC FORESTRY SECTOR OUTLOOK STUDY

The Asia-Pacific Forestry Sector Outlook Study (APFSOS) is a wide-ranging initiative to gather information on, and examine, the evolution of key forestry issues as well as to review important trends in forests and forestry. The main purpose of the study is to provide a better understanding of the changing relationships between society and forests and thus to facilitate timely policy reviews and reforms in national forest sectors. The specific objectives are to:

1. Identify emerging socio-economic changes impacting on forest and forestry
2. Analyze probable scenarios for forestry developments to 2020
3. Identify priorities and strategies to address emerging opportunities and challenges

The first APFSOS was completed in 1998, with an outlook horizon to 2010. During its twenty-first session, held in Dehradun, India, in April 2006, the Asia-Pacific Forestry Commission (APFC) resolved to update the outlook extending the horizon to 2020. The study commenced in October 2006 and is expected to be completed by September 2009.

The study has been coordinated by the Food and Agriculture Organization of the United Nations (FAO), through its regional office in Bangkok and its headquarters in Rome, and implemented in close partnership with APFC member countries with support from a number of international and regional agencies. The Asian Development Bank (ADB), the International Tropical Timber Organization (ITTO), and the United Kingdom's Department for International Development (DFID) provided substantial financial support to implement the study. Partnerships with the Asia-Pacific Association of Forest Research Institutes (APAFRI) and the Secretariat of the Pacific Community (SPC) supported the organizing and implementing of national focal points' workshops and other activities, which have been crucial to the success of this initiative. The contributions of many other individuals and institutions are gratefully acknowledged in the main APFSOS report.

Working papers have been contributed or commissioned on a wide range of topics. These fall under the following categories: country profiles, sub-regional studies and thematic studies. Working papers have been prepared by individual authors or groups of authors and represent their personal views and perspectives; therefore, opinions expressed do not necessarily reflect the views of their employers, the governments of the APFC member countries or of FAO. Material from these working papers has been extracted and combined with information from a wide range of additional sources to produce the main regional outlook report.

Working papers are moderately edited for style and clarity and are formatted to provide a measure of uniformity, but otherwise remain the work of the authors. Copies of these working papers, as well as more information on the Asia-Pacific Forestry Sector Study, can be obtained from:

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ABSTRACT

The objectives of this study were to examine the historical changes, current status, trend and present outlook with regard to gender issues for North Asian forestry as a contribution to the Asia-Pacific Forestry Sector Outlook Study (APFSOS) II of FAO.

This study systematically analyses the existing knowledge and data separately for four countries in North Asia: China, Japan, Mongolia and Republic of Korea, and focuses on the status of forestry, gender roles, gender structure, as well as relevance and impact of gender issues in forestry to 2020.

Gender issues in forestry are different in the selected countries. Much information from the four countries has shown that women are the primary users of forests through their involvement in food production, fuelwood and fodder collection. And women also make a major contribution to reforestation and forest protection. In the wood industry, women are mainly engaged in wooden furniture making or preparation compared with logging or timber transport. In the forestry service sector, women are primarily employed in institutions or administration as researchers or in support roles and rarely provide input for forestry decision-making. This study confirms that men still dominate the forestry sector workforce, in which women's participation rates are (relatively) very low in North Asia.

In the future, it is anticipated that there will be more women involved in forestry activities and their participation in forestry management and decision-making will be promoted in most of the North Asian countries.

1. INTRODUCTION

General background

In recent years, the term ‘gender’ has become a hot topic in various fields. Many sectors require gender analysis as a component of program implementation. Similarly, gender issues play a vital role in forestry as well.

The gender of those who actively manage the forest and those who collect the different forest products has important implications for sustainable forest management. In North Asia, men and women often have different roles in forest management and utilize the forest for different products. With regard to the dynamic trends of rural out-migration, men migrate in greater numbers and for longer periods, while women as heads of the household take the primary responsibility for looking after fields, agroforests and forests. At the same time, however, women lack access to policy making, extension information, and other forestry services. Due to cultural and policy differences, gender issues vary considerably in North Asia. An understanding of the way in which society assigns gender roles to men and women as well as gender differentiated information and sex disaggregated data of the population reveals the impact on forestry in different countries of North Asia; this could help the evaluation of the consequences or chances for success of any activities aimed at sustainable forest management and help to improve forest policy, implementation and services so as to enhance forestry development in North Asia.

Of the thousands of studies of forest management, only a tiny proportion mentions the relevance and impact of gender issues on forestry. Especially in North Asia, the study is embryonic. After studying the publications of FAO and literature related to gender issues in forestry and comparing the final report of the UNECE/FAO’s Team of Specialists on Gender and Forestry which covered gender structures and perceptions of forests in Europe and North America, from the obtained data and information available, this paper tries to examine the historical changes, current status, trend and present outlook of the gender issues in forestry as a new contribution to the Asia-Pacific Forestry Sector Outlook Study II (APFSOS).

One limitation of this paper is the lack of awareness, references and studies in North Asia related to gender issues in forestry, while another is the way statistics on the involvement of women and men in the forestry sector are not distinct. In most of the North Asian countries, reliable statistics on the demography of the forestry workforce are difficult to obtain, and when they concern women’s participation, data are virtually non-existent. Therefore, it is necessary to draw a clear picture of the roles of women in forestry in the North Asian countries.

About APFSOS and the working paper

During the Sixteenth Session of the Asia-Pacific Forestry Commission (APFC), held in Myanmar in January 1996, the Commission endorsed the implementation of a comprehensive

Asia-Pacific Forestry Sector Outlook Study (APFSOS). The Commission encouraged FAO to actively involve member countries in conducting the study and to maximize the use of local expertise. It also recommended that the FAO Regional Office for Asia and the Pacific be fully and actively involved in carrying out the study.

The initial APFSOS drew together myriad forestry dimensions to provide a coherent description and analysis of the situation and prospects for forestry in the region. The formal aspects of the study culminated in a comprehensive main report, published in November 1998. APFSOS has provided an important roadmap for forestry sector development in the Asia-Pacific region to 2010, which is still being used to guide policy makers in the region today. Much of the first APFSOS is now becoming outdated and, since 1998, several changes have taken place within and outside the forestry sector. FAO is now starting to conduct a second APFSOS: “Asia-Pacific Forestry Towards 2020”. The work focuses on existing and emerging issues of importance to forestry in the region. Paths of future developments will also be constructed on the basis of a range of scenarios.

Objectives of this study

The objectives of this paper are: a) to collect, review and interpret existing information on the historical and current status as well as trends of the impact of gender issues on the North Asian forestry sector from a national/regional perspective; and b) to present the possible outlook for gender roles in the North Asia forestry sector until 2020.

In pursuing these objectives, the following issues were addressed:

- Identifying current gender roles in North Asia that are significant for forestry and its development, and examining how these roles have been changed during the past 20 years, and expectations for further change up to 2020
- Analyzing gender demography in North Asian countries, including current structures and demographic forecasts for 2020 and developing conclusions as to how changes in gender demography might impact forestry (including social, economic and environmental dimensions)
- Identifying the major social, economic and environmental changes that are forecast for North Asia in the next 15 years, and discuss how these might impact on gender roles in forestry
- Growing concerns for gender issues in forestry in North Asia, the influence policies and institutions need, and the implications of livelihood arrangements

The focus is centered on gender in the context of rural development and poverty alleviation, but it does not ignore the impacts of gender on forestry in the context of wealth and urban populations.

Scope of this paper

The paper examines gender-based forestry issues in the context of a broad range of themes:

- Forest resource utilization and income generating activities for local people
- Consumer trends in forest products
- Indigenous knowledge, agriculture and forest management
- Forestry-related poverty alleviation and sustainable livelihoods
- Forestry conservation
- Gender, poverty and sustainable development
- Gender demography
- Women's roles and burdens
- Women and forestry versus men and forestry
- Women's access to policy making and decision-making in forestry and agroforestry



Figure 1. North Asian countries included in this paper (according to the APFSOS)

According to the geographic distribution of countries in North Asia included in the APFSOS, the study area encompasses the following countries: Japan, Mongolia, People's Republic of China and Republic of Korea (South Korea) (Figure 1). Not included are the Russian Far East and the Democratic People's Republic of Korea (North Korea).

2. MATERIALS AND METHODS

Data sources

The following data and information were collected in FAO's Regional Office for Asia and the Pacific (RAP) in Bangkok:

- (1) FAO publications, (2) FAO internal websites, (3) United Nations publications, (4) United Nations websites, (5) published literature, journals, (6) official documents from the four countries, (7) Internet websites, and (8) information from consultants and contacts.

The information and data were analyzed separately for the four countries of North Asia. They are presented for every country according to: (1) Status of forestry, (2) Gender roles, (3) Gender structure, and (4) Relevance and impact of gender issues on forestry. The main sources for the major sections were:

- (1) Status of forestry: FAO internal website>Forestry Department country profiles (available at <http://www.fao.org/forestry/site/countryinfo/en/>), FAO publication: *Global forest resources assessment 2005*.
- (2) Gender roles: United Nations publications, RAP publication: *Rural women and food security in Asia and the Pacific 2005*, official national websites.
- (3) Gender structure: The World Bank group GenderStats (available at <http://devdata.worldbank.org/genderstats/home.asp>), Population Division of ESCAP, United Nations Population Division: World Population Prospects The 2004 Revision (available at <http://esa.un.org/unpp/index.asp?panel=2>), FAOSTAT Statistics Division 2006 (available at <http://faostat.fao.org/site/497/default.aspx>), official documents from national administration; ILO LABORSTA Internet 2006 (available at <http://laborsta.ilo.org/>).
- (4) Relevance and impact of gender issues on forestry: *Rural women and food security in Asia and the Pacific 2005*, United Nations publications, official documents, information from consultants and contacts, official national websites.

Because much information could be drawn from internal FAO, UN or World Bank websites and publications as stated above, and the systematic collection and analysis of these information for every country is consistent, to avoid duplication, the information will not be referred to in detail. As far as possible, however, in the case of information of significant importance the reference is cited.

Analysis methods

The overall approach was: (1) choose groups of interest, (2) collect and review the relevant literature (including publications, websites and official documents), and locate studies that examined gender issues and forestry, (3) interpret and summarize the results of all studies, (4) evaluate the evidence for a consistent relationship between gender issues and forestry, (5) draw and develop conclusions for the outlook to 2020, and (6) compare between the four countries.

The review refers to studies published as early as 1984 and focuses on updated studies published from 2000 to 2006. Finally, because field and statistical methodologies were inconsistent across the reviewed publications, and the main issues were different between countries, it was not possible to conduct a formal statistical meta-analysis for the whole North Asian region. Instead, the situations of the four countries are compared in the frame of an extensive discussion, and analyzed in parallel to each other so as to draw the conclusion for North Asia.

3. ANALYSIS ON THE COUNTRY LEVEL

People's Republic of China¹

Resource utilization

Forest resources

Forests are concentrated in the southeast and north of China. The total forest area in 2005 was 197.3 million hectares (Table 1), which was about 21.2 percent of the total land area (source: FAO, Global Forest Resources Assessment 2005). China has great diversity in forest types. They occur over a wide range of geographical conditions, from tropical, temperate to desert conditions. China is home to many species of forest trees and shrubs. According to FAO country profiles, 2,500 tree and shrub species are found in China's forests. Many of them are useful woody plants. Through the country's long history, nearly all suitable land has been developed for purposes of agriculture, urban areas, industry, and fibre plantations. Only mountains and inaccessible regions in the west have preserved tracts of natural woody vegetation, and often in these cases, the natural woody vegetation is highly fragmented. On the other hand, woody vegetation in China has its own unique characteristics: The majority of China's natural forests are closed forests (Figure 2), the evergreen and deciduous/evergreen forest/shrub vegetation in southern China is unique in the world, and the number of endemic woody species is high.

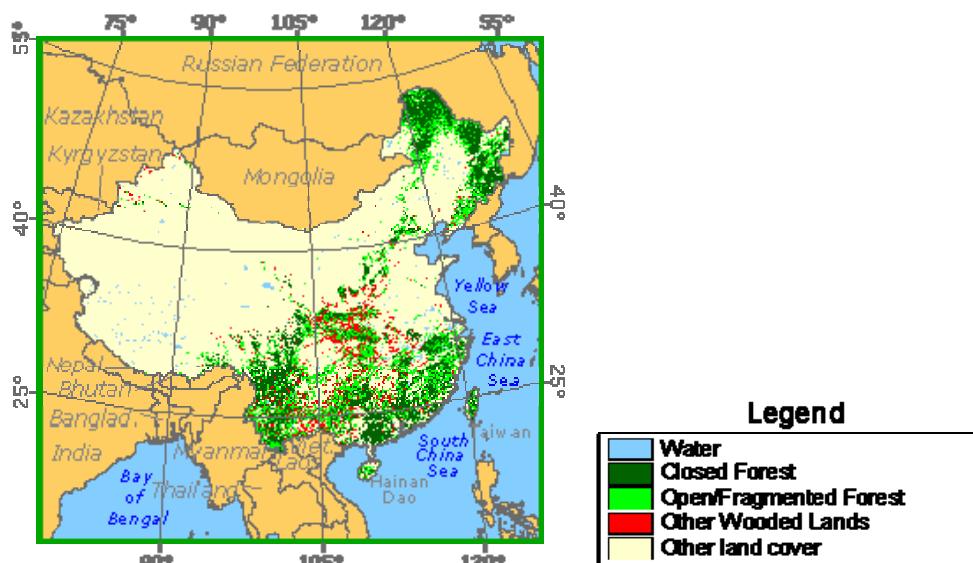


Figure 2. China forest cover map

Source: Global Forest Cover map produced as part of FRA 2000.

¹ Based on FAO internal website>Forestry Department country profiles.

Table 1. Characteristics of forest and other wooded land

FRA 2005 categories	Area (1000 hectares)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Primary	11,632	11,632	11,632	-	-	-
Modified natural	101,754	110,956	114,332	92,681	84,745	71,421
Semi-natural	25,289	30,489	39,957	8,817	12,938	16,194
Productive plantation	17,131	21,765	28,530	-	-	-
Protective plantation	1,335	2,159	2,839	-	-	-
Total	157,141	177,001	197,290	101,498	97,683	87,615

Source: FAO, Global Forest Resources Assessment 2005.

Products

The removal of wood products in China from 1990 to 2005 decreased to 135.4 million m³ and so has their value (Table 2).

Table 2. Removal and value of wood products

FRA 2005 categories	Volume (1000 m ³)			Value (1000 US\$)		
	1990	2000	2005	1990	2000	2005
	Industrial roundwood	Woodfuel	Total	Industrial roundwood	Woodfuel	Total
Industrial roundwood	97,875	94,392	88,808	4,902,693	5,530,975	4,946,290
Woodfuel	61,206	50,383	46,628	881,479	760,895	-
Total	159,081	144,775	135,435	5,784,172	6,291,870	4,946,290

Source: FAO, Global Forest Resources Assessment 2005.

Management

Objectives, plans and trends

The goals of the Forest Action Plan for China Agenda 21 are to lay the foundation for the establishment of a relatively complete ecological system and a fully developed forestry industrial system by 2010. The long-term goal is to increase forest cover to 26 percent of the land area by 2050. Between 2001 and 2010, 6.39 million hectares of high-yield plantations are planned. Between 2011 and 2050, a further 13.29 million hectares is planned.

Consistent with this is a large scale afforestation program targeting barren and arid areas of western China over the period 2000 to 2010. Western China is also the initial focus of an even more ambitious program to return farmland to forest and grassland. Mountain forest areas are also identified as a high priority for environmental improvement, forestry development and the alleviation of poverty.

China's strategy to achieve sustainable forest management by 2010 includes improving legal, policy, infrastructure, social, economic, environmental and technological frameworks; identifying and testing criteria and indicators for SFM; developing evaluation indicators and capacity building.

Key forestry challenges for China are the enormous population on the one hand and the relatively modest forest resources on the other hand. A growing deficit between timber demand and supply is the single most significant issue for forestry in China. By 2010, both fuelwood and industrial wood consumption in China is expected to increase significantly. At the same time, accessible forest resources are continuing to decline.

Public participation

Forestry provides considerable economic benefits to Chinese communities and is a major employer. The country has 150 000 rural collective forest farms. Approximately 45 percent of China's total area of forest land is owned by the state and 55 percent is under collective ownership. Ninety percent of China's total forest land and 80 percent of the stocking volume is in mountainous areas that are also home to 56 percent of the Chinese population. Economic development in mountainous China has been very slow and many farmers in these areas have extremely low standards of living. There is significant potential for forestry to contribute to public welfare in this area. Efforts are being made to absorb 15 million surplus rural laborers (10 percent of the rural total) in the next five years, also to accelerate and broaden integrated mountain area development through to 2010.

Forest farms are the primary force behind rural forestry development. The increased devolution of management responsibility has provided greater incentives for planting and managing economic species and developing planting, breeding, processing, tourism and servicing operations. The collectives have made significant contributions to local economies, eliminating poverty and transferring surplus labor in rural areas. Public awareness of forest issues and public participation in forest conservation are increasing, at least in major cities of China in recent years.

Employment in Chinese forestry declined from 1990 to 2000 due to the wood production decrease. In contrast, the number of people involved in forestry services sharply increased during this decade but was still at a low level (Table 3).

Table 3. Employment in forestry

FRA 2005 categories	Employment (1000 person-years)	
	1990	2000
Primary production of goods	1,896	1,499
Provision of services	9	26
Unspecified forestry activities	610	492
Total	2,515	2,017

Source: FAO, Global Forest Resources Assessment 2005.

Gender roles

History

The gender roles of Chinese men and women have experienced an amazing change over the past hundred years. There has been a strong discussion on gender equality since Mao's era, when men and women were proclaimed equal. Mao's declaration "Women hold up half the sky" contributed conceptually to challenging the old gender role attitude "Women are the annex of men". Gender equality has become one of the most significant issues of modern Chinese concern and a national policy goal. As China's President Jiang Zemin stated during the opening ceremony for the UN's Fourth World Conference on Women in 1995, "We in China have made gender equality a basic state policy in promoting social development". There is reasonable pride in China that such radical social change could have been accomplished within a few generations. On the other hand, the traditional male-dominated gender roles still persist in practice and manifest themselves in the allocation of property, status, power, rights, and opportunities.

Gender relations generally have been improved over the last fifty years with the help of the Chinese Constitution and legislation. Due to state policy protection along with the continuous growth of China's economy and the overall progress of its society, women have been given more guarantees of equal rights and opportunities than men, and the development of women has been given unprecedented opportunities. However, at the same time women have begun to encounter increasing discrimination, contradicting gender equality as provisioned by law. Because of the keen competition of career and social division of labour, differential treatment has become more prevalent.

Current status

The pace of economic growth and the move towards a market-based economy has quickened during recent years, bringing a number of changes that have had both positive and negative influences on the lives of Chinese women.

The key facts regarding Chinese rural women's current situations are given below (FAO SD Dimensions Study, 2000):

- Women's roles in relation to men vary depending on the agricultural production system and the agroecological conditions
- Women have extensive workloads with dual responsibility for farm and household production
- Women's work is getting harder and more time-consuming due to ecological degradation, male outmigration and the shift to the household responsibility system
- •Women have an active role and extensive involvement in livestock production, forest and water resource use but their input needs (like technology, information and training) are poorly addressed
- •Women contribute considerably to household income through farm and non-farm activities
- Women's work as family labour is underestimated

After achieving great progress in the promotion of gender equality and women's development over past decades, in recent years, the Chinese government is highly aware of new situations and problems and has made gender equality an important part of efforts to ensure that women enjoy equal rights to men in terms of politics, economy, culture, and social and family life; the government continuously pushes women's development in general. But there is still a long way to go and arduous tasks to tackle to achieve gender equality and promote women's development in China to a satisfactory level.

Because Chinese women have become increasingly more diversified in their social status, there is an obvious imbalance in the development of women in different regions, social status and groups. The outmoded conventions and custom of inequality between men and women handed down from China's history and culture have not yet been completely eradicated, and women's rights and interests are still being infringed upon to varying degrees in some areas. Besides, women still experience low political participation, especially at the village and township level as a result of gender based discrimination and early retirement. Similarly, in the public sector, women face more difficulties than men in gaining promotion.

Trends

Gender issues will receive more attention from both the public and the government. Chinese people will hold more egalitarian attitudes to gender roles than before.

The Chinese government aims to further implement the basic national policy of equality between men and women, safeguard women's rights and interests according to law, put into effect the necessary requirements and strive to ensure that women enjoy the same rights as men in politics, economy, culture, society and family life.

Chinese women will have more access to decision making and policy making. More women will become community leaders. But much time and effort will be needed to include more women in local government and ministry level positions.

Gender structure

Population and gender structure

Historical population and gender demography

The demographic data reported by the World Bank Group between 1980 and 2004 in China (Table 4) show that the Chinese population increased from 0.98 billion to 1.30 billion, but the growth rate has slowed down as a result of the Chinese family planning policy. Women made up 48.6 percent of the total population and 45 percent of the total labor force until 2004, which had increased but was still less than men. The literacy rate of women was still below men but had rapidly increased to 87 percent during these years. Regarding access to policy making, women occupied around 21 percent of the total seats in parliament, which showed no increase during these years. At the ministerial level, women held only 6 percent of total positions.

Table 4. Historical Chinese population and gender statistic data

	1980	1990	2000	2004
Population total (thousands)	981,200	1,135,200	1,262,600	1,296,200
Female (% of total)	48.5	48.4	48.6	48.6
Urban population (% of total)	20	27	36	39
Urban population growth (annual %)	4	5	3	3
Labor force, female (% of total)	43	45	45	45
Male literacy rate (% of age 15+)	..	87.2	..	95.1
Female literacy rate (% of age 15+)	..	68.9	..	86.5
Total fertility rate (births per woman)	2.5	2.1	1.9	1.8
Women in parliament (% of total seats occupied in Lower or Single House)	..	21	22	20
Women in ministerial level positions(%)	..	..	..	6

Source: The World Bank Group.

Current status and prospects for population and gender demographics to 2020

According to the result of ESCAP World Population Prospects 2004 (Table 5, Figure 2), the Chinese population will increase from 1.3 billion to 1.4 billion in the next 20 years but the growth rate will slow down. It shows that the sex ratio will decrease to 104.3, but gender imbalance will still exist and may worsen. "The sex ratio has not been checked effectively," Zhang Weiqing, the country's top population official said. Actually, the recent report from China by the state-run *Xinhua News Agency* on 8 January 2006 indicated that 119 boys are born for every 100 girls and by 2020, 40 million men may live as frustrated bachelors; China has yet to curb its worsening gender imbalance.

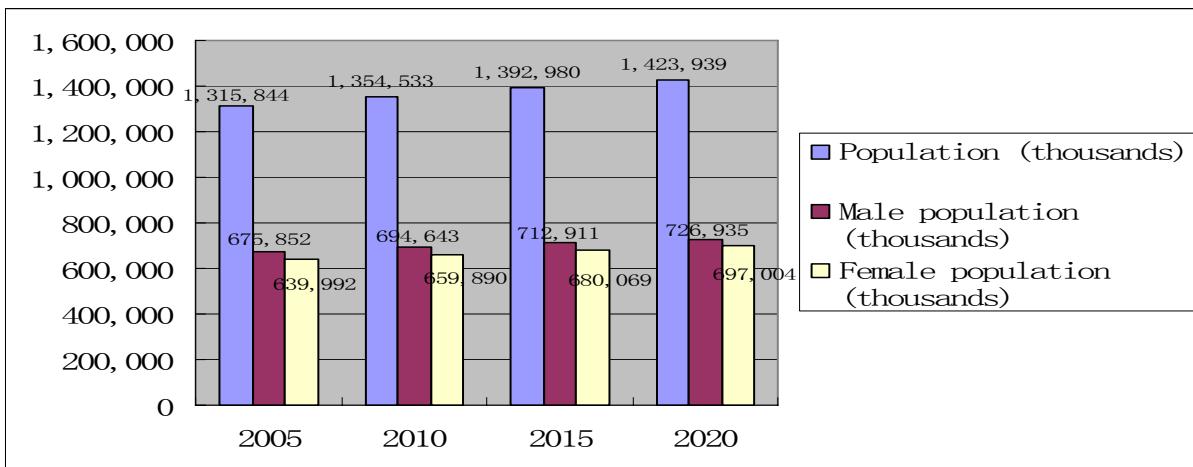


Figure 2. China's population and gender demographic prospects

Based on: Population Division of ESCAP, World Population Prospects: The 2004 Revision.

Table 5. Population and sex ratio prospects to 2020

	2005	2010	2015	2020
Population sex ratio (males per 100 females)	105.6	105.3	104.8	104.3
Population growth rate (%)	0.65	0.58	0.56	0.44
Total fertility rate (children per woman)	1.7	1.74	1.81	1.85

Source: Population Division of ESCAP, World Population Prospects: The 2004 Revision.

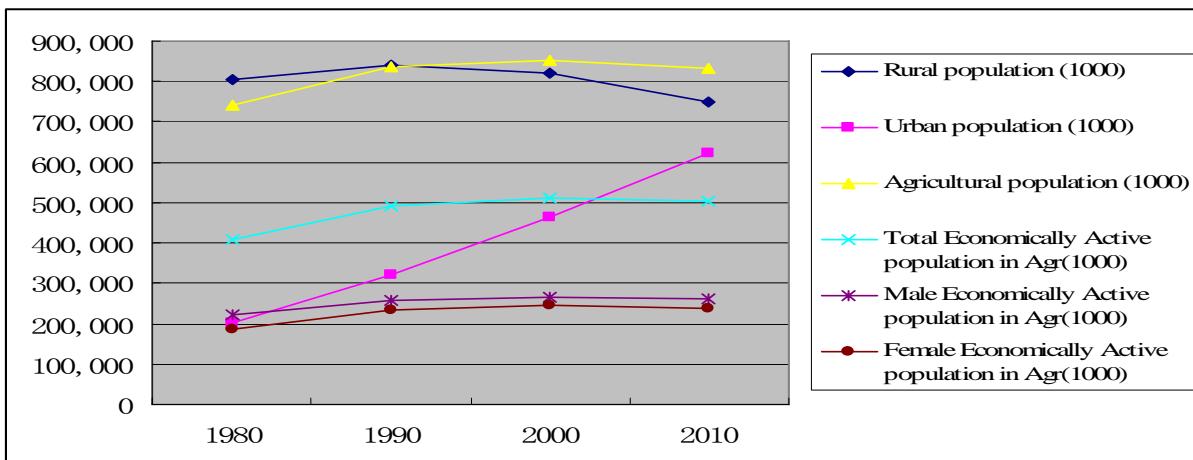


Figure 3. Changes and trends of rural and agricultural population

Based on: FAOSTAT | © FAO Statistics Division 2006.

Analyzing the data of the rural and agricultural population from past to future (see data in Annex Table 1), two trends should be noted: 1) The rural population will decrease while the urban population will sharply increase; and 2) The agricultural population will decrease, so both female and male active populations in agriculture will decrease (Figure 3).

Gender representations in Chinese forestry

Gender statistics in government forest service

Chinese Forestry Administration adopts the responsibility for Chinese forestry a national level. It has 138 organizations, which include government offices, institutions and enterprises. According to the statistics from the Chinese Forestry Administration in 2005, the total number of working employees of all these governmental organizations was 82,550. There were 25,761 female employees who comprised about 31 percent of the total number.

Gender statistics in the whole forest sector

The Chinese official statistic data for forest-related organizations and enterprises in 2005 (Table 6) show that there were 419,993 female employees occupying 29 percent of the 1,462,364 employees. Compared with the whole Chinese labor force, women represented 45 percent of the total so 29 percent in the forest sector was below the average. So there was still a male-dominated workforce in the Chinese forest sector. The rural workforce only comprised about 3 percent of the total.

Table 6. Employees in the Chinese forest sector

	Total employees	Female	Female %	Male	Male %	Rural workforce	Rural workforce %
State-owned	1,382,078	386,538	28	995,540	72	32,983	2
-Enterprise	622,966	177,504	28	445,462	72	8,714	1
-Institution	682,585	193,443	28	489,142	72	23,352	3
-Government department	76,527	15,591	20	60,936	80	917	1
Collectiveowned	43,219	21,299	49	21,920	51	609	1
Others	37,067	12,156	33	24,911	67	4,339	12
Total	1,462,364	419,993	29	1,042,371	71	37,931	3

Based on: Chinese Forestry Ministry data

Gender statistics in forestry education

Because the data for total forestry students in China during this decade was hard to collect, Beijing Forestry University which is the most famous forestry university in China, was used as an example.

According to the statistics from Beijing Forestry University (Figure 4, see data in Annex Table 2), the number of forestry students sharply increased after 1996. Nowadays it is nearly fivefold the number in 1988. Data also illustrate that between 1988 and 2006, female students who chose to study forestry grew from 25 percent of the total to 51 percent, even more than male students. But it should be noted that employees whose major field of study was forestry

were not necessarily working in the forestry field. Moreover, it was harder for female graduates to find jobs in forestry than male graduates.

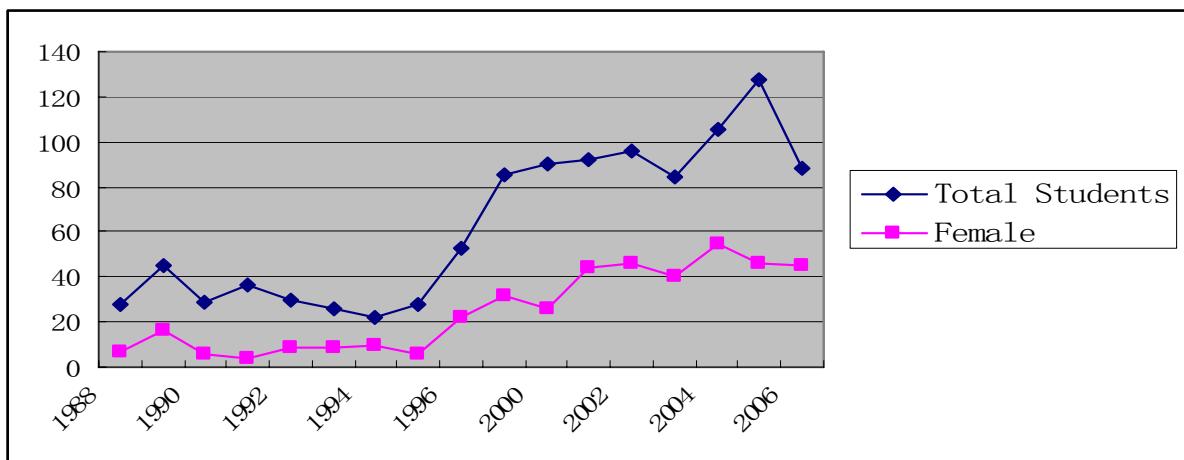


Figure 4. Trends of students with majors in forestry at Beijing Forestry University

Relevance and impact of gender issues on forestry

Main issues

Outmigration of rural people

Gender issues continue to be of major significance for forest-dependent communities. In China, opportunities for seasonal and permanent out-migration and resulting gender-based and youth-based impacts are significant. The outmigration of men to urban centres to earn extra remittances leaves women as heads of the household for much longer periods, while there is still a cultural dependence on absent men to make key economic decisions. At the same time, women are disadvantaged owing to limited access to credit, livelihood extension, and other services.

The dominance of men is more significant in urban than in rural areas. Additionally, young educated women also migrate in search of economic gains. Elderly people and women who are likely to be left behind in the villages to undertake agricultural tasks formerly had the responsibility for the entire household. The “greying of rural communities” has become a significant forestry issue as well, as young people migrate to cities and the forestry labour force ages. At the same time, China’s enormous population is still growing and accessible forest resources are continuing to decline. A growing deficit between timber demand and supply is a significant issue for forestry in China. So there are notable challenges created by difficulties in attracting young rural people to work in the forestry industry. Due to this labour shortage, there will be more women involved in forestry activities in the future.

Unbalanced sex ratio

The Chinese family planning program has been very successful in controlling the country's population growth. But as a consequence of this policy, the unbalanced sex ratio has become a serious problem; this is attributed to higher female mortality rates and male-biased birth rates. If this trend does not reverse, gender imbalance may worsen in the future and have a negative influence on socio-economic factors as well as forestry stabilization and development. Beijing has vowed to reverse the trend by 2010, outlawing sex-selective abortions, launching a tentative scheme to pay moderate pensions to rural parents with no sons and stepping up propaganda that "girls are as good as boys."

Women's access to policy making

In terms of seniority levels and positions of decision-making and responsibility, the data and feedback confirmed that there was an overwhelming imbalance in favour of men in the forestry sector in China. Although there was evidence that nowadays there are more women studying forestry and likely to be just as well-qualified as men to hold senior positions in the public sector, the balance still clearly favours men. What the information does suggest is that women in the forestry sector are primarily employed in institutions or administrations as researchers or in support roles. The "professional" women foresters who have specialist roles or first-line junior management positions seem to be invisible.

If women are excluded from community decision-making, however, community-based forest management does not make any real difference to women's lives. Where women are involved in decision-making about forest, they tend to take account of the needs of fuel and fodder, which are otherwise ignored by men sitting on forest protection or similar community-level committees. And some Chinese women are better than men in management or negotiation fields.

The gender imbalance is particularly prevalent within management roles, especially at senior policy making levels as well as regional ministry levels. The fact is that Chinese women are still failing to achieve decision-making positions under previous and ongoing discrimination at an explicit or implicit level.

Public concern about gender issues in forestry

Although there are more research, programs and projects carried out related to gender issues in forestry in China nowadays, most of which were launched by or in collaboration with foreign countries (e.g. WWF China program, IIFM training project), most of the studies are just at the inception stage. Information and publications in this area are limited in Chinese.

As a result, the gender statistic data (sex disaggregated data, gender differentiated information) related to forestry sector are very limited in China. Division by gender in forestry statistics has almost never been used. It is apparent that existing data sources provide only indications

and insights of the overall picture of gender structures in forestry organizations. National-level statistics do not differentiate on the basis of gender. Even where they do, they are often encompassed in a wider category of state-owned institutions or industries; the number of rural workers is not taken into account. Moreover, the information (either quantitative or qualitative) on the numbers and roles of women in non-wood or household forestry work is also limited. The lack of information shows the degree of public concern.

These constraints prevented extrapolation of the data in a wider sense, or the ability to draw sufficiently robust conclusions on gender structures across the various sectors of the forestry in China. It also proved difficult to undertake meaningful benchmarking of gender equality across various sectors of the industries or organizations in forestry.

Case studies

In China, forest and woodland now account for 18.21% of the total land area. Fuelwood makes a great contribution to household energy supplies. Firewood collection is still primarily done by women. Chinese rural labour force statistics show that women accounted for 32.2% of the rural labour force in forestry (UNDP/FAO).

It should be noted that there are considerable variations among the different areas in China, and the gender role in forestry has varied significantly by culture and territory. Some cases related to gender issues in forestry in different Chinese provinces are provided below:

In Guizhou mountainous areas

Women are more focused on the utilization and development of non-wood forest products (NWFPs) for their families' basic needs such as fuelwood, fodder, ferns, and fruits. On the other hand, men give more emphasis to the utilization of commercially oriented products such as timber, coal and charcoal. (Yuan Juanwen, 2002)

In mountainous Yunnan Province

Women perform 80 percent of agricultural work and engage in all activities (including cultivation, crop management, harvesting and marketing). The involvement of women in agriculture appeared to be determined by their social position in the family. Younger women and middle-aged women are responsible for most agricultural and forestry activities (such as collecting fuelwood, NWFPs and pine leaves for barn yard manure) during the slacker farming season from November to January. The efforts of boys are relatively less structured. A village study found that women are responsible for fetching fuelwood and typically spend two to three hours per day carrying 70-80 kg of fuelwood from far mountainous areas to their homes. (Jieru, 1999)

He Zhonghua protested against the decline in the position of Moso women in Yunnan: 'some of the women are not less qualified than men, and some of the men are not more educated, yet

the seats of the village heads or officials are always for those men said to be abler. No opportunities for women!'

In the Xiang forest station in Lugu Lake, according to He Zhonghua, 'In afforestation, 80 percent are women, in putting out mountain fires, 40 percent are women, in planting trees, 80 percent are women. And, when fighting fires, it is easier to mobilize the women than the men'. Furthermore, in cutting firewood, women choose to cut the twigs but men cut the full grown and even young trees at random. She adds, 'in fact, men are destroying the forest. We saw this with our own eyes'. But men chair all forest rituals and religious ceremonies and also dominate village and forest management committees. Women's interests, labor and skills are not considered in many of the decisions they make. There is gender-specific exclusion of indigenous women from local forest management institutions such as protection committees as well.

In Tibet Autonomous Region

The gender role in fuelwood collection in the Tibetan community is different from many other places in Yunnan. Tibetan custom does not allow women to do heavy work and wood here is very hard, requiring axes and oil saws to cut it. Therefore, fuelwood is generally provided by the male members of the family. Every winter men go to the mountain to collect fuelwood for the next year. Women collect light fire fuel such as tree branches, pine needles, etc. (Zhongyun, 1998).

'Seeing dead tree stumps overwhelms me with sadness. I want to stop people from cutting our trees down,' said Tseji with firm conviction. Tseji is the leader of an all-female forest patrol against poachers and loggers. As she speaks, her companions gather around and nod in solemn agreement. Though her conviction to protect their natural habitat is a universal feeling shared amongst many members of the local community, no matter who they are, in Bazhu, all the forest patrollers are women. 'This is because we're much better at patrolling than the men!' said Tseji with a wide grin.

Every week, Tseji and the female patrol group make the rounds in sections of the 8903 ha forest belonging to the Bazhu community. The patrols can last from anything up to 5 hours at a time, which although they have other responsibilities at home, the women are willing to undertake. Tesji's comments are not bravado; ever since the women took on the patrolling duties, there has been a significant increase in logging protection. Fewer trees are now being cut and the chances of repeat offenders have also diminished. 'When we started the patrols in the mid nineties, we would often see the same people time and again cutting down the trees. Now, if we catch people, we never see them again,' Tseji added.

Although respected for their high success rate, women were not considered as a first choice for the patrolling work. 'Initially, we had men going on the patrols,' explained Ben Chong, one of Bazhu's community leaders, 'but this proved to be unsuccessful, as many of the patrollers would know the loggers socially, and either feel too embarrassed to report them, or else they

would all sit down together and get drunk, and the patrollers would neglect their duties. This never happens with women, and besides, we've found them to be much better negotiators than the men.'

With support from the WWF they have built a Community Learning Centre in Bazhu's largest village. Tibetan classes are regularly held there (of which the women are attending in ever greater numbers) and training opportunities are offered including handicraft making, and the sustainable use of NWFPs, especially mushrooms and medicinal herbs. For Tseji, such training opportunities are an exciting future for her, as she would like to expand her opportunities to help her family. 'Besides, the extra knowledge could help me in my patrolling work,' she added, 'I might gain better powers of persuasion!' (Marston, 2006).

Taiwan, Province of China

For political and social reasons, the situation of Taiwan, Province of China is very different. Taiwan has experienced rapid social change since 1950s also. But the stage and pattern of economic development has been very different. Export-led industrialization and the development of family enterprises increased the women's labor force participation in Taiwan. However, mostly participated in family enterprises and thus were defined as a labor force in the informal sector. Not until the 1990s was women's employment formally recognized. Nowadays public gender attitude has changed to the husband sharing the housework ('husband share housework if wives work outside'). Because the data source is unavailable for this study now, the gender issue for forestry of Taiwan should be analyzed further in future.

Key points to retain

Women represent 45 percent of the total Chinese labor force, 29 percent in the forest sector is below the average. Women in the forestry sector are primarily employed in institutions or administration as researchers or in support roles. A growing deficit between timber demand and supply is a significant issue for forestry in China. Due to outmigration of rural people and labour shortage, there will be more women involved in forestry activities in the future.

Japan²

Resource utilization

Forest resources

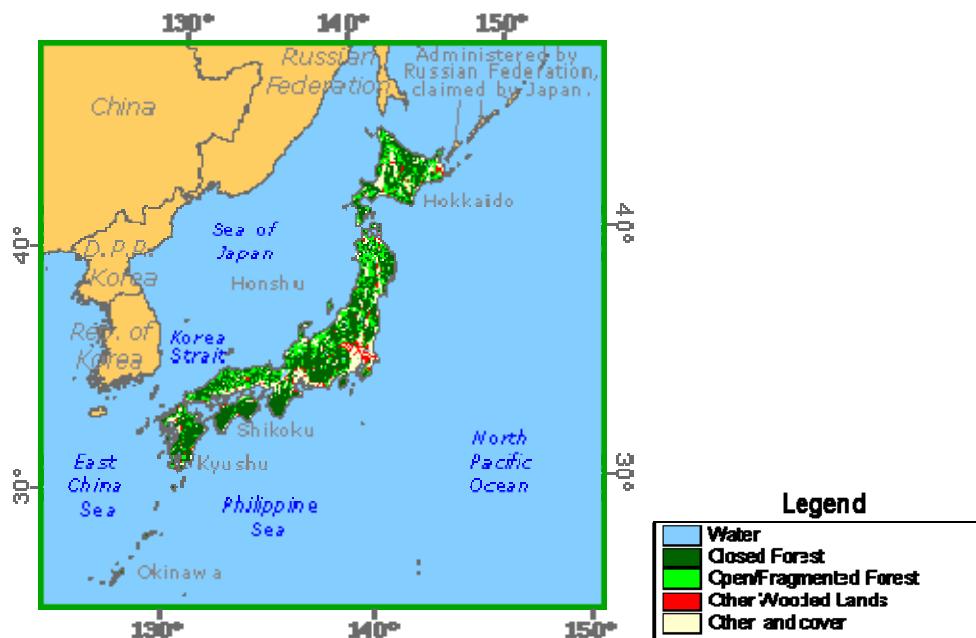


Figure 5. Japan forest cover map

Source: Global Forest Cover map produced as part of FRA 2000.

There are various forest types in Japan due to latitudinal differences ranging from subtropical forests, warm temperate forests, cool temperate forests to subfrigid forests respectively (Figure 5). Forests cover nearly 68% of the total land area of Japan and in 2005 supplied about half the domestic demand for lumber and wood pulp. Of the 24.9 million ha of forest (Table 7), the Japanese government owns 30%, which it maintains under strict regulations, limiting overcutting. On private forest lands, cutting is less controlled. About 6.6 million ha are reforested with trees less than 20 years old. Forest management and erosion control are urgent necessities in a land where gradients are very steep and flooding is frequent.

² Based on: FAO internal website>Forestry Department country profiles.

Table 7. Characteristics of Japan's forests

FRA 2005 categories	Area (1000 hectares)		
	1990	2000	2005
Primary	3,764	4,054	4,591
Modified natural	10,899	10,491	9,955
Protective plantation	10,287	10,331	10,321
Total	24,950	24,876	24,867

Source: FAO, Global Forest Resources Assessment 2005.

Products

The removal of wood products in Japan from 1990 to 2005 decreased to 22 million m³, so as the value (Table 8). During the 1980s and 1990s, Japan became more reliant on imported wood to satisfy domestic demand. In 2000, Japan imported US\$13.3 billion in forest products, second only to the United States. Japan is the world's dominant importer of softwood and tropical hardwood logs, and has become one of the largest importers of softwood lumber, which is mainly used for housing construction. Japan was the world's third leading producer of paper and paperboard in 2000 (after the United States and China), at over 31.7 million tonnes.

Table 8. Removal and value of forest wood products

FRA 2005 categories	Volume (1000 m ³)			Value (1000 USD)		
	1990	2000	2005	1990	2000	2005
Industrial roundwood	30,765	18,601	22,334	5,328,600	2,702,600	2,864,500
Woodfuel	365	242	-	-	-	-
Total	31,130	18,843	22,334	5,328,600	2,702,600	2,864,500

Source: FAO, Global Forest Resources Assessment 2005.

Management

Objectives, plans and trends

Corresponding to new forest classifications in Japan, forest management is classified into single-storey forest management, multi-storey forest management and natural forest management.

Single-storey forest management is carried out in forests with high productivity while considering natural conditions and the necessity for suitable forests for public recreation — 8.88 million ha are subject to this form of management. In future, the introduction of managed single-storey forests through new planting, such as the establishment of forests for water conservation, will amount to 0.59 million ha. This will be achieved within approximately 40 years.

Multi-storey forest management is carried out in forests with a high demand for fulfilling

functions for the public benefit or timber production — 5.32 million ha are subject to this form of management. The introduction of tended multi-storey forests in the future is expected to reach 4.64 million ha, and will be achieved within approximately 40 years.

Natural forest management is carried out in forests where the functions for public benefit or timber production can be secured by utilizing mainly natural functions — 11.02 million ha are subject to this form of management. One-third of this area has restrictions on felling, and is reserved for conservation of national land, conservation of the natural environment and conservation of species.

As a country with superior technology in reforestation, forest management and so forth, Japan has promoted technical cooperation, development survey, development cooperation, etc. This started with an afforestation project in the Philippines in 1976 and has since involved various international forestry cooperation projects in various parts of the world including Asia, Africa, and Latin America. Project-type technical cooperation extends to cover a wide area encompassing afforestation and protection, social forestry, natural forest management, forest product research, erosion control, tree breeding, etc. In recent years, the focus of cooperation has tended to be on support for training/extension for the promotion of social forestry, management of natural forests, etc. in addition to technical cooperation on afforestation.

Public participation

Since the public need for accessible forest is expected to rise further, forest improvement is to be promoted so that within 20 years there will be approximately twice as much forest open to the public, managed appropriately and facilitated with trails etc. as in 1994 (0.67 million ha as of the end of the fiscal year 1994).

In order to understand forest ecosystems and their way of management, Japan uses actual practice through both action programs and manuals by fully experienced instructors. Projects are being implemented to correspond with people's needs.

Besides, in order to stimulate better public awareness of coexistence between forests and human beings as well as to promote better forest management, there are projects that involve people in forest management from the planning phase and aim to use forests as a place for practical learning on the forest environment.

Gender roles

History

Confucianism has had a great influence on Japan's developmental history and on Japanese people's lives. In the process of adopting a Chinese-style legal and political structure based on Confucian ethics, Japan developed a strongly patriarchal society. Women in Japan, although they were subordinate to men, had a right to inherit property and position from their families

and were expected to show the same bravery and loyalty as men. Japanese men, even in the warrior era, were expected to be accomplished in literature and the arts (Otake, 1977).

In modern Japan, values such as harmony, solidarity, and loyalty have been stressed and encouraged in the process of transforming old Japan to a modern technological country. More and more people, particularly men, became wage earners as the economy developed and the gender division of labor became strict and apparent; men spent more time working outside the home, and women stayed at home to take care of children and household chores (Otake, 1977). Women had decision-making power as well as a control of money at home, so that men could be freed from household matters and attend to their work.

At present, gender role differences between men and women are minimal. The social ability scores for men and women were not significantly different from each other. This could be explained by the recent development of equal educational opportunities for men and women and the increased number of women in the labor force. A drastic increase in the number of women in higher education started in the late 1980s. The rate of women in higher education (48.9%) surpassed that of men (45.8%) in 1989 (Nihon Fujindantai Rengoukai, 1998).

In the government aspect, in 1994, the Headquarters for the Promotion of Gender Equality was set up within the Cabinet. In addition, as part of reorganization in 2001, a Council for Gender Equality and a Gender Equality Bureau were established within this Cabinet Office. The Basic Law for a Gender-equal Society went into effect in June 1999 to clarify basic concepts pertaining to formation of a gender-equal society and indicate the direction these should take, and to comprehensively and systematically promote the State's, local governments' and citizens' measures pertaining to the formation of a gender-equal society. The Basic Plan for Gender Equality was formulated on December 12, 2000. The government approved the Cabinet decision for the Basic Plan for Gender Equality, the first plan based on the Basic Law for a Gender-equal Society (Ministry of Foreign Affairs of Japan).

Current status

Recently Japanese people have started to explore some alternative lifestyles different from the traditional male and female gender roles. Government statistics indicate that the number of women working outside the home has steadily increased over the past 20 years, and so has the number of married women keeping their jobs after marriage and childbirth (Nihon Fujindantai Rengoukai, 1998). This is partially because of the women's rights movement and achievement of equal education of the sexes, but also partially because of the realization that a single wage is not enough to maintain living standards. Moreover, young people have tended to delay marriage, some have decided not to have children, and many young people have decided to stay single. This trend is parallel to similar trends in other developed countries, yet it has been a highly discussed social issue in Japan because it is new to modern Japanese society (Kito, 2000).

The 2002 Cabinet Office poll showed that the number of people who believe marriage or

motherhood should not force women to abandon their careers is steadily increasing. But the concept of intensive mothering for infants is still strong in Japan. The White Paper indicated that female employment continues to follow the traditional pattern of women giving up their jobs between their late twenties to mid-thirties in order to raise children. The late marriage and birth trends that emerged during the nineties are just one manifestation of the deep attitudinal shifts which are occurring within Japanese society. The situation has forced the government to outline special policies to support working women with children, since falling birth rates add to the social impact of Japan's rapidly ageing society.

Mariko Bando, Director-general of the Cabinet Office and Gender Equality Bureau, says the figures point to a weakness of Japanese society when it comes to gender—other countries have been improving conditions for women faster than Japan has. As it is, the figures for women in positions of public leadership have much room for improvement.

Trends

At the national level, Japan's revised Basic Plan for Gender Equality clearly states that greater participation by women is necessary in new areas such as the environment and disaster prevention and recovery. Moreover the Plan clarifies one of its targets, namely, that women hold at least 30 percent of leadership positions in all fields of society by 2020 (Ms. Mikiko Otani, 2006). In future Japan will pay special attention to supporting basic education for girls. And full consideration will be given to the active participation of women in development, and to their obtaining benefits from development.

Based on the "Initiative on Gender and Development" introduced in 2005, Japan has worked to integrate a gender equality perspective into every phase and every area of the implementation of its ODA and also strengthened assistance to developing countries' efforts to achieve gender equality in society (Ms. Mikiko Otani, 2006). Special attention will be paid to the three priority areas: education, health and economic and social participation.

So in the 21st century, in Japan, measures to promote women will become more active in constructing a new corporate culture and affluent economic society. Future issues include increasing motivation and improving work skills through providing information such as career upgrading and counseling for women. At the same time, a significant increase in the number of managerial positions for women as role models will be an important issue (Kanatani Chieko, 2001).

Gender structure

Population and gender structure

Historical population and gender demographics

According to the demographic data reported by the World Bank Group between 1980 and

2004 in Japan (Table 9), the Japanese population increased from 116.8 million to 127.8 million, but the growth rate has slowed down especially in recent years. Women made up 51.1 percent of the total population and 41 percent of the total labor force until 2004 which has been maintained. Regarding access to policy making, women occupied around 7 percent of the total seats in parliament, which increased during these years but was still much less than the average in East Asia and the Pacific. At the ministerial level, women held 13 percent of total positions, a dramatic increase in these years.

Table 9. Historical Japanese population and gender statistical data

	1980	1990	2000	2004
Population total (millions)	116.8	123.5	126.9	127.8
Female (% of total)	50.8	50.9	51.1	51.1
Urban population (% of total)	60	63	65	66
Urban population growth (annual %)	2	1	0	0
Labor force, female (% of total labor force)	39	41	41	41
Total fertility rate (births per woman)	1.8	1.5	1.4	1.3
Women in parliament (% of total seats occupied in the Lower or Single House)	..	1	5	7
Women in ministerial level positions (%)	..	..	0	13

Source: The World Bank Group.

Current status and prospects for population and gender demographics to 2020

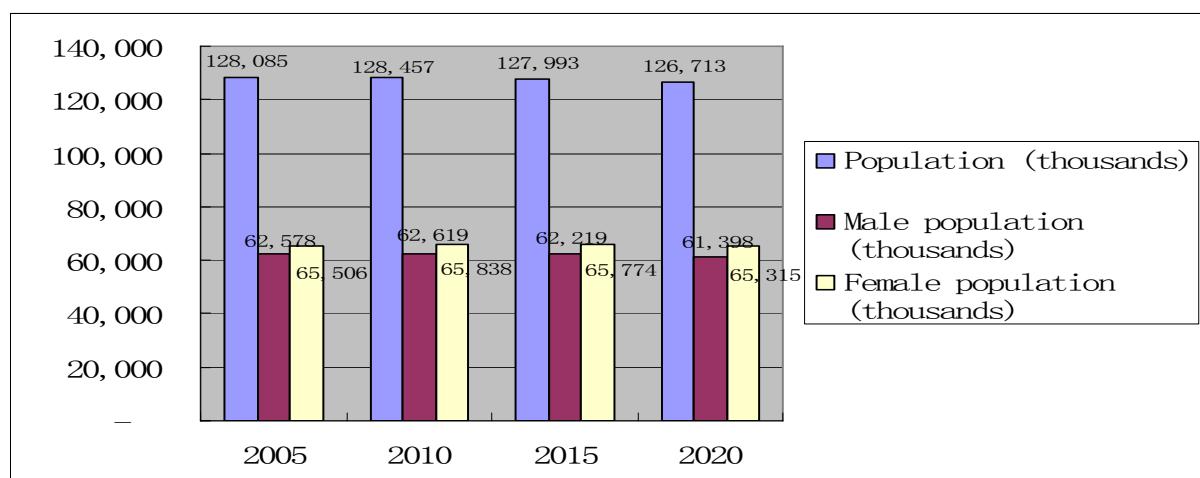


Figure 6. Japanese population and gender demographic prospects

Based on: Population Division of ESCAP, World Population Prospects: The 2004 Revision.

According to the result of ESCAP World Population Prospects 2004 (Table 10, Figure 7), The Japanese population will start to decline after 2010 due to the low fertility rate (actually, the newest statistical data show that the Japanese population had already begun declining in 2005). In the next 20 years the number will decrease from 128.1 million to 126.7 million. The sex ratio will decrease to 94. This shows that the gender imbalance will intensify. There will be more women than men, which is opposite to the Chinese situation. At the same time, the

fertility rate is expected to increase.

Table 10. Population and sex ratio prospects to 2020

	2005	2010	2015	2020
Population sex ratio (males per 100 females)	95.5	95.1	94.6	94
Population growth rate (%)	0.17	0.06	-0.07	-0.2
Total fertility rate (children per woman)	1.33	1.37	1.44	1.51

Source: Population Division of ESCAP, World Population Prospects: The 2004 Revision.

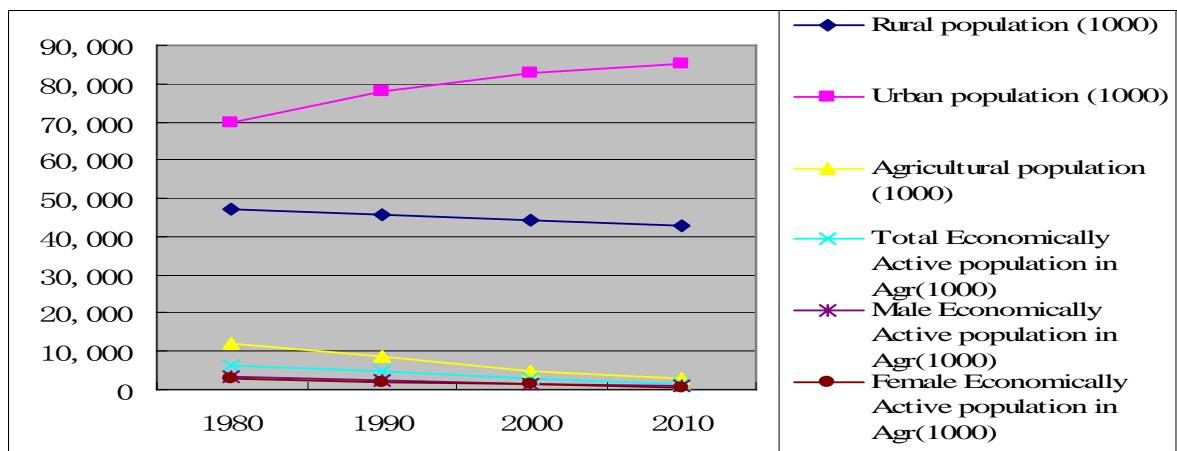


Figure 7. Changes and trends in rural and agricultural population

Based on: FAOSTAT | © FAO Statistics Division 2006

Analyzing the data of the rural and agricultural population from past to future (see data in Annex Table 3), one can note two trends: 1) The rural population constantly decreases while the urban population still increases; and 2) agricultural population will decrease, so both female and male populations active in agriculture will decrease (Figure 7).

Gender representations in Japanese forestry

Historical trend of gender representations in forestry

According to the sex disaggregated data related to forestry reported by the International Labor Organization in 1980, 1990, 1995 and 2000 for Japan (Table 11), women only occupied 2 percent of agricultural and forestry technicians, and 5 percent of timber collectors and log transporters as well as pulp and paper makers in 1980. Since then, women's representation in the forestry sector has not varied much. The proportions of women as timber fellers and loggers, timber collectors and log transporters, as well as pulp and paper makers were always between 5% and 10% (Figure 8). In the field of charcoal makers and firewood cutter, wood industry workers, as well as wooden furniture and related work, women occupied a relatively higher percentage, around 18% to 30%. Especially in charcoal making and firewood cutting women comprised 30 percent in 1990, which was the highest record. However the number of women workers in silviculture declined during these two decades. Men always took the

dominant role and women's participation was relatively low.

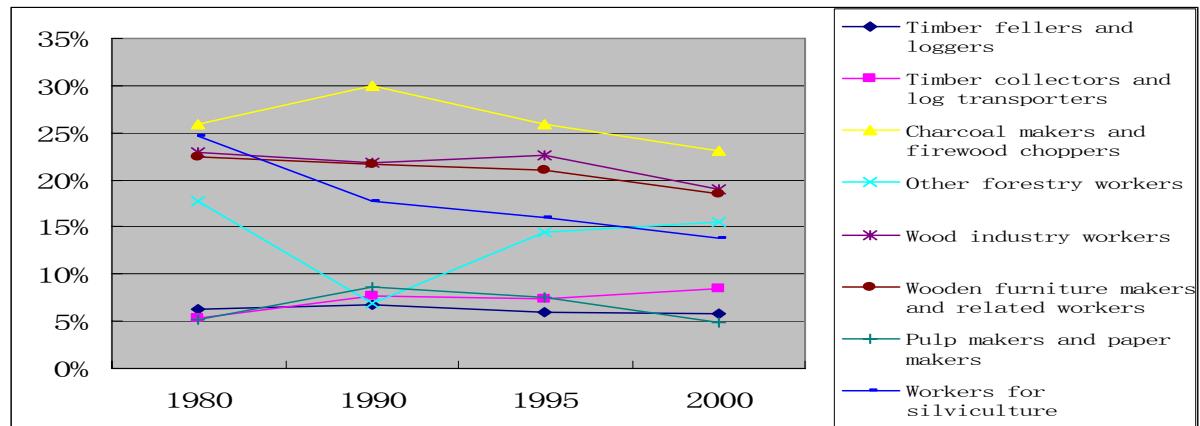


Figure 8. Historical trend of percentage of female workers in Japanese forestry

Table 11. Workers in the Japanese forest sector

1980	Total	Female	Female %	Male	Male %
Agricultural and forestry technicians	57,717	1,064	2%	56,653	98%
Timber fellers and loggers	49,623	3,118	6%	46,505	94%
Timber collectors and log transporters	12,597	673	5%	11,924	95%
Charcoal makers and firewood cutters	2,655	687	26%	1,968	74%
Other forestry workers	6,083	1,076	18%	5,007	82%
Wood industry workers	52,127	11,981	23%	40,146	77%
Wooden furniture makers and related work	235,677	53,058	23%	182,619	77%
Pulp makers and paper makers	12,821	670	5%	12,151	95%
Workers in silviculture	75,363	18,558	25%	56,805	75%
1990					
Timber fellers and loggers	29,400	2,000	7%	27,400	93%
Timber collectors and log transporters	7,800	600	8%	7,200	92%
Charcoal makers and firewood cutters	2,000	600	30%	1,400	70%
Other forestry workers	4,300	300	7%	4,000	93%
Wood industry workers	51,800	11,300	22%	40,500	78%
Wooden furniture makers and related work	195,400	42,300	22%	153,100	78%
Pulp makers and paper makers	13,900	1,200	9%	12,700	91%
Workers in silviculture	55,100	9,800	18%	45,300	82%
1995					
Forestry workers	81,564	10,468	13%	71,096	87%
Timber fellers and loggers	22,155	1,309	6%	20,846	94%
Timber collectors and log transporters	5,273	386	7%	4,887	93%
Charcoal makers and firewood cutters	1,911	495	26%	1,416	74%
Other forestry workers	3,269	472	14%	2,797	86%
Wood industry workers	38,302	8,681	23%	29,621	77%
Wooden furniture makers and related work	180,615	38,077	21%	142,538	79%
Pulp makers and paper makers	12,555	945	8%	11,610	92%
Workers in silviculture	48,956	7,806	16%	41,150	84%
2000					
Forestry workers	67,588	8,006	12%	59,552	88%
Timber fellers and loggers	17,363	1,017	6%	16,346	94%
Timber collectors and log transporters	3,251	277	9%	2,974	91%
Charcoal makers and firewood cutters	1,985	457	23%	1,528	77%
Other forestry workers	3,044	475	16%	2,569	84%
Wood industry workers	32,521	6,177	19%	26,344	81%
Wooden furniture makers and related work	146,140	26,963	18%	119,177	82%
Pulp makers and paper makers	12,380	596	5%	11,784	95%
Workers in silviculture	41,915	5,780	14%	36,135	86%

Based on: Japanese Statistic Bureau Internet 2006.

Sex disaggregated data in forestry in 2000

In 2000 (Figure 9), 8,006 women were forestry workers (including workers in silviculture, timber fellers and loggers, timber collectors and log transporters, charcoal makers and firewood cutters, other forestry workers) representing 12 percent of the total. Among wooden furniture and related work, women accounted for the highest number in all forestry-related tasks, which was 26,963 women representing 18 percent of the total. While among timber collectors and log transporters only 277 women were employed. Women primarily engaged in wood industry work numbered approximately 6,177, representing 19 percent of its total staff.

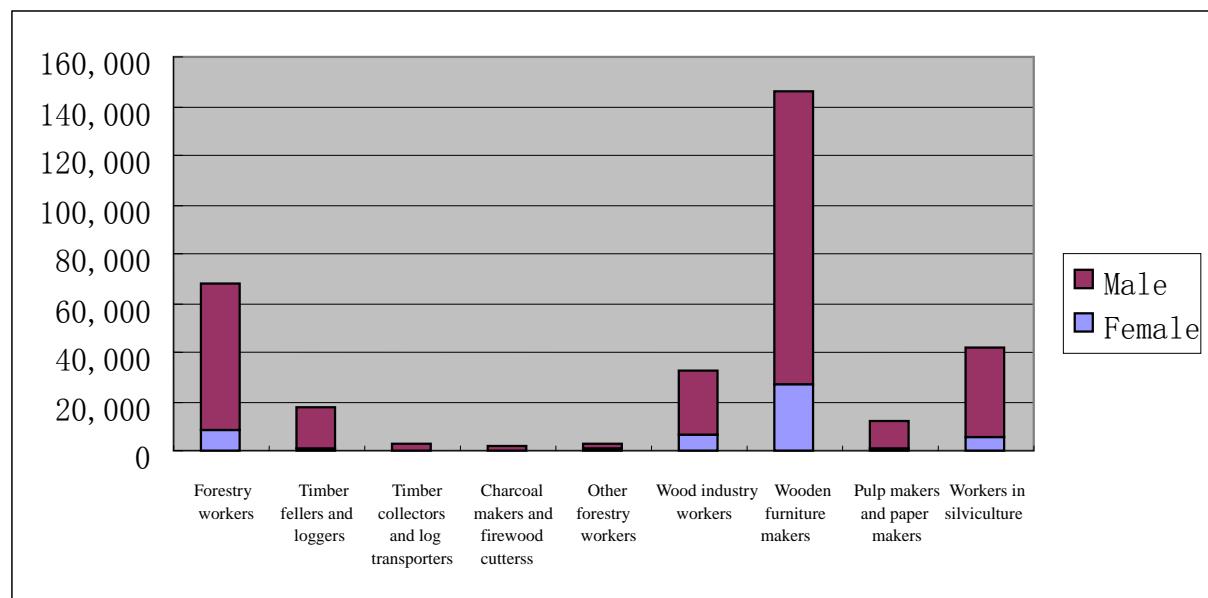


Figure 9. Proportions of women workers in different jobs in forestry in 2000

Gender employment statistics for forestry graduates

Table 12 shows that women occupied a relatively higher percentage in forestry employment with higher education levels, which is in accordance with the general employment situation. But the representation of female-employed graduates in the forestry sector was lower than the average. And the number of forestry graduates with high education level was relatively limited, compared to the whole situation.

Summing up Table 12, female-employed graduates represented only 11 percent of all forestry-employed graduates.

Table 12. Employment situation of forestry graduates by education level (number of students) in 2004 (data do not include the number of civil service employees)

	Junior-high (age 13-15)				High school (age 16-18)			
	Total	Male	Female	Female %	Total	Male	Female	Female %
Newly employed	9,553	6,816	2,737	29%	208,903	118,598	90,305	43%
Forestry sector	305	276	29	10%	251	234	17	7%
Diploma (two-year study)				College (four-year study)				
	Total	Male	Female	Female %	Total	Male	Female	Female %
Newly employed	69,029	5,474	63,555	92%	306,414	171,499	134,915	44%
Forestry sector	7	2	5	71%	57	38	19	33%

Based on: Ministry of Education, Culture, Sports, Science and Technology Japan 2004.

Relevance and impact of gender issues on forestry

Main issues

Special considerations for rural women's participation in forestry

In Japan's rural area, 10,000 women were engaged in forestry in 2000, accounting for 14.3% of the total population engaged in forestry (Ministry of Foreign Affairs of Japan, 2000). The percentage of women workers to the total is low due to the hard working conditions in forestry-related work, but we still need to be concerned about women's important role in sustaining forestry including their major role in management. Moreover, they have greatly contributed to the management of life in rural areas and maintenance and stimulation of the local community. Therefore, there is high anticipation for women's participation in the rural society.

The basic plan formulated on the "Basic Law on Forest and Forestry" enacted in 2001 stipulated the promotion of women's participation in forestry. Since then, a legal framework for the participation of women in forestry has been established. In line with the basic plan, comprehensive measures have been taken for the creation of a gender-equal society in rural areas. In May 2001, the Ministry of Agriculture, Forestry and Fisheries established the headquarters for the promotion of gender equality. To make the efforts fruitful, the ministry has been holding local conferences, collecting proposals from the public and conducting related activities for women engaging in forestry. One important principle of the guidelines is that all enterprises benefiting from the Ministry of Agriculture, Forestry and Fisheries support programs should adopt measures aimed at creating a gender-equal society in rural areas, such as efforts to increase women's participation in decision making, and should devise concrete strategies for enhancing these measures.

On the other hand, in rural areas with a declining youth population and a progressively ageing society, it is crucial to promote the settlement of the young generation and to create an environment in which all generations and especially women can live and work comfortably. In order to support activities such as the processing of forestry products and other activities managed by women, the government is promoting measures such as the construction of facilities equipped with child-rearing areas to create an attractive living environment.

Furthermore, extension staff stationed in regional agricultural extension offices are conducting support activities for women who engage in forestry, for instance providing information on technology, management, and finance; carrying out consultations; support for women's group planning to start income-generating activities by providing a wide-range of information and management guidance; giving advice on how to make entries in job journals and account books and analyzing their business based on bookkeeping results; offering support for improving employment conditions, and so forth (Ministry of Foreign Affairs of Japan, 2000).

In this way, women will be positioned as important participants in Japan's forestry. Although progress has been made in enhancing measures aimed at the formation of a gender-equal society in rural areas in which men and women recognize each other as partners, in future, comprehensive measures should be aimed at hastening the formation of a gender-equal society in rural areas and not neglecting women's participation in forestry.

The ageing society and gender imbalance

It is surprising that a Japanese woman bore on average only 1.8 children during her lifetime in 1980. Since then the figure fell to its lowest level at 1.3 in 2004. The total population, now slowing to a maximum figure of around 128 million, will start to fall (without immigration) to 118 million in 2030 and 101 million in 2050 (Roberts et al. 2006). The ageing society is a phenomenon Japan will reach much earlier than other countries. Now at 17%, persons over 65 will constitute 33% of the population by 2050 (Hunter 2002).

The official Japanese Government view of the problem is that the low fertility rate is due to the delay of marriage and an increasing proportion of people never marrying. Iwasawa (2001) argues that the decline in traditional arranged marriages has only been replaced imperfectly by the Western dating culture, so males especially are unduly passive in finding a partner. Careers now look more promising for females than formerly. Since as in most societies the care of the elderly falls on the shoulders of women, and young Japanese women are less willing than their forebears, eldest sons have difficulty in finding brides. The ageing society problem may get worse.

According to the results of ESCAP World Population Prospects 2004, the Japanese population will decline after 2010 due to the low fertility rate; at the same time the sex ratio will decrease to 94. This means that the female population will be more constant than the male population and the gender imbalance will intensify.

This population scenario is important to observe and predict for the forestry sector. Many studies deduce that there will be a lower labor force in forestry and the supply and demand for logs and timber in Japan will decline, so there may be fewer women forestry activities in future as well.

Low ratio of women in managerial positions

Women occupied around 7 percent of the total seats in parliament in 2004 (a slight increase) while at the ministerial level, women held 13 percent of total positions, a dramatic increase, but still much lower than the average in East Asia and the Pacific. The reasons for the lower number of women in managerial positions are: "women do not have the knowledge, experience, or analytical abilities essential for the position" and "women work a shorter years and retire before reaching the managerial level." This situation has not changed since the enactment of the Equal Employment Opportunity Law. In addition, in a survey on how companies utilize women's labor, it was revealed that 88.6% of companies "do nothing" to appoint women to higher positions. Most companies (89.3% of those surveyed) "have not established a plan to utilize women's labor", while 84.7% "do not educate middle managerial staff and male employees on the importance of utilizing women's labor." It seems that companies are doing little to place women in managerial positions, and such inaction is a clear problem (Kanatani Chieko 2001).

The ILO survey (1995) showed the ratio of female managerial workers in Japan to be the lowest among 21 surveyed countries, and from this result, it can be said that the number of women with a high level of responsibility in the work field is very low in Japan. The situation has not changed much in this decade.

Women's positions in management do not correspond to the work they perform in forestry in Japan as well. A look at the ratio of women who are actually employers or own-account workers in forestry in contrast to the number of female employers or own-account workers in respective industries, shows that there is a far smaller ratio in forestry than in total industry. Compared with many other countries this is also the lowest figure. Consequently in forestry, it is supposed that women's position in management does not correspond to the work they perform in terms of management responsibility (Prime Minister's Office of Japan, 2000).

A Women's Initiative (WIAJ) has begun holding seminars and workshops to promote the utilization of women's labor in companies. Moreover the Basic Plan for Gender Equality has a target that women hold at least 30 percent of leadership positions in all fields of society by 2020. So in future, measures to promote women's participation in policy making and a significant increase in the number of managerial positions for women will be important issues. This will promote women's participation in forestry-related management activities as well.

Limited statistical data on gender issues related to forestry

Gender statistical data (sex disaggregated data, gender differentiated information) related to forestry management and education are very limited and out of date in Japan. There is a lack of information related to forestry on the gender-differentiated effects of policy measures and gender-differentiated activities or projects as well. It is apparent that existing data sources provide only indications and insights of the overall picture of historical gender structures in forestry ten years ago.

There are many reasons. First, the forestry sector is no longer a major industry in Japan. Japan has become more reliant on imported wood to satisfy domestic demand and because of new technologies firewood is seldom used for energy nowadays. Second, because of working conditions and gender role characteristics, women are not suitable for most of the wood logging and processing work, and only occupy a relatively higher percentage in wooden furniture and related wood work. Third, forest management are takes place in mountain areas where gradients are very steep and flooding is frequent, so women can only contribute to service work like cooking for forestry workers. Therefore the female labor force in forestry is negligible in Japan and statistical data are hard to obtain or non-existent.

These constraints prevented extrapolation of the data in a wider sense, or the ability to draw sufficiently robust conclusions on present gender structures and impact on the various sectors of forestry in Japan.

Key points to retain

Women represent 41 percent of the total Japanese labor force; 17 percent in the forest sector is below this average. Women in the forestry sector are primarily employed in wood industry. The forestry sector is no longer a major industry in Japan. It is deduced that there will be a smaller labor force in forestry. So the number of women involved in forestry work will continue to decline in future as well, but their participation in forestry related management or business activities will be promoted.

Mongolia³

Resource utilization

Forest resources

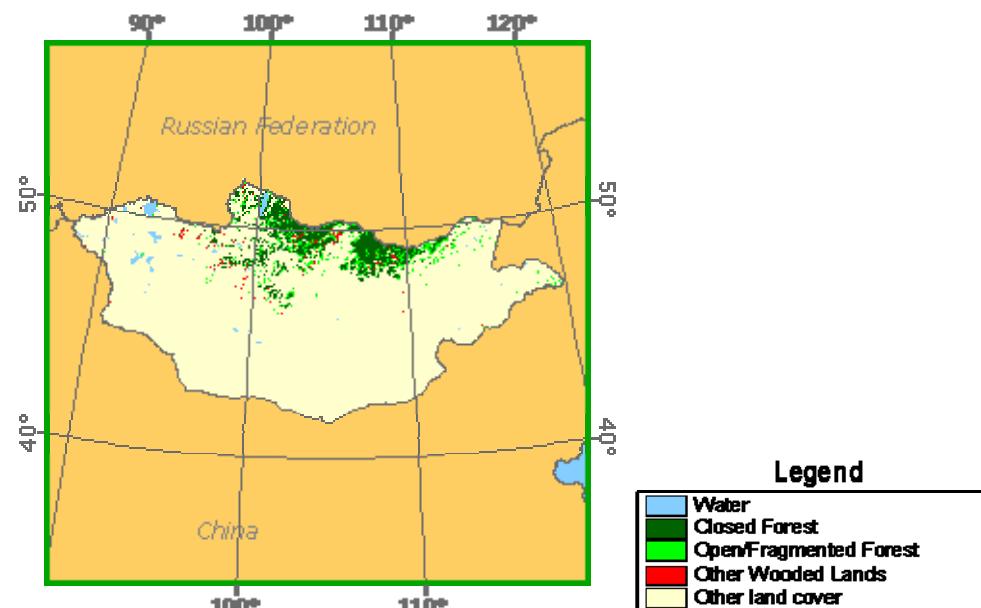


Figure 10. Mongolian forest cover map

Source: Global Forest Cover map produced as part of FRA 2000.

Mongolia's forests are comprised primarily of coniferous trees. The total forest area in 2005 was 10.252 million hectares, 6.5 percent of the total land area (Table 13). The area of exploitable forests has been estimated to be about 5 million hectares, located mainly in the northern parts of the country (Figure 10). Significant areas of arid forests and shrublands for timber harvesting are found in the southern and southwestern parts of the country. All forest lands in Mongolia formally belong to the State. The environmental protection functions of forests are generally given more emphasis by the government than economic functions. The forests are recognized as being very important for the protection of soil, pasture, water resources and wildlife and for climate amelioration. Because of the harsh climatic conditions, Mongolia is prone to various natural disasters which cause extensive damage to the economy and natural environment. Approximately 6 million hectares of forests were damaged by fires from 1995 to 1999. Ecotourism has great potential in Mongolia.

³ Based on: FAO internal website>Forestry Department country profiles.

Table 13. Characteristics of forest and other wooded land

FRA 2005 categories	Area (1000 hectares)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Primary	5,540	4,923	4,733	3,019	1,401	1,102
Modified natural	5,922	5,667	5,407	3,241	1,624	1,273
Productive plantation	30	75	112	-	-	-
Protective plantation	-	-	-	4	9	13
Total	11,492	10,665	10,252	6,264	3,034	2,388

Source: FAO, Global Forest Resources Assessment 2005.

Products

Timber production in Mongolia at one time reached around 2 million m³ but dropped to less than 0.5 million m³ by 2005 (Table 14). The former Soviet Union was the main trading partner. Log exports were banned in 1995. Since then, exports of processed products have shifted to China and other Asian countries. The legal timber industry has now largely collapsed.

Table 14. Removal and value of forest wood products

FRA 2005 categories	Volume (1000 m ³)			Value (1000 US\$)		
	1990	2000	2005	1990	2000	2005
Industrial roundwood	584	100	37	1,051	180	67
Woodfuel	500	348	411	300	209	247
Total	1,084	448	448	1,351	389	314

Source: FAO, Global Forest Resources Assessment 2005.

Management

Objectives, plans and trends

The principal objective of forest management in Mongolia is to protect and develop the existing forests to ensure their maximum contribution to soil and watershed protection and the conservation of existing ecosystems. At the same time, forests are also expected to meet people's needs for industrial wood, fuelwood and minor forest products.

Changes in forest management in Mongolia largely centre on reversing trends in forest and land degradation and increasing areas of forest under formal management regimes. The Forest Law of 1995 is designed to provide greater regulation of forests, while focusing efforts on protection and restoration. The post-1990 shift from centralized planning towards a market economy has seen greater emphasis placed on non-State efforts in forest management including the privatization of a number of forest management agencies and the initiation of

efforts in community forest management. But recently forest management in Mongolia has remained largely centralized. So far, there are no specific financial incentives with regard to forestry. But actions directed to ensure protection of forest ecology, reforestation and tree planting in desert areas have increased during recent years.

Public participation

Participatory forestry is a relatively new development in Mongolia. In the past several years the government has taken preliminary steps to explore alternative forms of land tenure. One such effort has encompassed the development of community forest management. Since 1998 the government has ceded modest areas of forests to management by community collectives. So far, six communities have been involved and contracted to manage a total of nearly 40 000 hectares under 20-40 year user rights. The government plans to further develop community forestry efforts in areas surrounding settlements. The other major aspect of community participation in forest management is the utilization of Citizens Representatives *Khurals* to grant licences to use forests for specific periods. *Khurals* are open to the participation of all citizens and thus give some degree of participation in local forest management decisions.

Gender roles

History

The main political figures in Mongol history have tended to be men. But it would be a mistake to infer that in history the Mongol was unappreciative of female wisdom and that women did not have authority. On the contrary, women enjoyed a substantially stronger social position among the Mongols than in the civilized and more male-dominated states. One example of the comparatively strong position of women among the Old Mongols was the belief that it was advantageous if a man's wife was somewhat older than her man, so that she could be wiser than him, and be able to guide him in worldly matters. Consistent with this, it was considered unmanly and a sign of immaturity if a Mongol man did not listen to the advice of his woman.

Nevertheless, before 1921, Mongolia was a feudal society where women had limited rights, especially during the Manchu period. The 1921 revolution and the establishment of a socialist society from 1924 onwards radically changed the position of women. It gave them increased access to education and health care and equal rights within the law.

The socialist period saw an increase in female participation in decision-making and public life. In 1931, 30 percent of local government officials, including two *aimag* (provincial) governors, were women. Later on, quotas of female representation were legally guaranteed in parliament, in ministerial posts and at government and *aimag* levels, though there were proportionately fewer women than men to be found in the most senior posts.

Employment was guaranteed by the state for both men and women and conditions were

established to enable women to undertake work outside the home. An official list of jobs and standards for women (prepared in 1964 and 1985) showed that pay was similar for men and women. By the late 1980s, women in Mongolia had achieved a measure of equality and education greater than many other Asian countries.

Current status

There appears to be relative gender equality in Mongolia compared to many other countries. However, evidence from recent studies and a gender analysis of national statistics show that the impacts of the economic transition have been different for women and men. The social costs have been borne unevenly by different groups within Mongolia's population and social inequality is growing which is also creating gender gaps that are new to Mongolia.

A disproportionate number of female-headed households are living in poverty and this proportion is growing. Although the volume of paid and unpaid productive work that is regarded as women's responsibility has increased, some traditional work divisions are strictly maintained. As a result of this flexibility in some work activities (where women and boys take on men's work) and continuing rigidity in others (where women's tasks remain theirs alone despite an increase in workload), the overall work load has intensified for women. This means that women are less able to take up alternative economic opportunities and that their health and education are compromised. The birth rate has fallen sharply because of women's increasing reluctance to add the extra burden of motherhood to an already uncertain future (UNIFEM, 2001).

Migration has been a common response to poverty and has disrupted social networks and left women under additional pressure to manage their multiple responsibilities within and outside the household with little help from traditional support networks (*khureel*). Initially as livestock herds were privatized, thousands of families lost their jobs in state-owned enterprises and then were forced to return to urban areas for employment as three successive harsh winters from 1999–2001 wiped out their herds. Women and girls often led this retreat in the hope that jobs in the service sectors would still be available. Employment opportunities, however, remain limited and have increased poor female-headed households.

Despite the shift to a free market economy and the passing of equity legislation, distortions in the labor market remain. These have led to discrimination against women, a persistent wage gap across all sectors, inefficiencies in investments in education, and the loss of potential contributions from women to economic growth.

Trends

The strategy of the Mongolian government about gender issues will focus on (National Statistical Office of Mongolia, 2003):

- 1) Training in gender analysis: Applied policy-relevant training and research on gender should

be supported; 2) Reducing cost/benefit ratios for education: increase immediate benefits for girls and change perceptions of longer-term benefits especially for boys; 3) Economic empowerment measures: promoting the economic activities of women and changing or enforcing legislation aimed to prevent gender-based discrimination in the workplace; 4) domestic violence prevention and support programs: information, education and communication programs on domestic violence as well as increased support for shelters and counseling. Strengthen public and private mechanisms for support and remedy; 5) reproductive health promotion: information, education and communication programs on reproductive health targeted at teenagers and low-income groups as well as increased availability of birth control; 6) support for political participation of women's groups: support for community-based organizations mandated to conduct gender analysis of policy-relevant issues and to promote women's interests.

Gender structure

Population and gender structure

Historical population and gender demographics

According to the demographic data reported by the World Bank Group between 1980 and 2004 in Mongolia (Table 15), the Mongolian population increased from 1.7 million to 2.5 million, but the growth rate slowed down as a result of the family planning program and economic transition. Women made up 49.9 percent of the total population and 40 percent of the total labor force until 2004. The literacy rate of women is still below that of men but reached 97.5 percent during these years. Regarding access to policy making, women occupied around 11 percent of the total seats in parliament, which has decreased during the last decade due to the impact of economic transition and retrenchment of staff. At the ministerial level, women held only 6 percent of total positions.

Table 15. Historical Mongolian population and gender statistical data

	1980	1990	2000	2004
Population total (millions)	1.7	2.1	2.4	2.5
Female (% of total)	49.9	50.1	49.9	49.9
Urban population (% of total)	52	57	57	57
Urban population growth (annual %)	4	2	1	1
Labor force, female (% of total labor force)	40	41	40	40
Male literacy rate (% of age 15+)	..	..	..	98.0
Female literacy rate (% of age 15+)	..	..	..	97.5
Total fertility rate (births per woman)	5.4	4.0	2.6	2.4
Women in parliament (% of total seats occupied in the Lower or Single House)	..	25	8	11
Women in ministerial level positions (%)	..	..	0	6

Source: The World Bank Group.

According to the Women's Information and Research Centre, Mongolian women are likely to

be in the minority in senior positions or management roles, but become more dominant in numbers in some other sectors (Table 16). Nevertheless, if employment is within the state sector (such as education, healthcare and social services), retrenchment of staff and cuts in sector budgets, have affected women more than men.

Table 16. Male-female positions in the labor hierarchy

Levels	Male (percent)	Female (percent)
Decision-making	13.0	6.8
Executive	37.4	43.8
Assistant	49.6	49.2

Source: Women's Information and Research Centre, 1998.

Current status and prospects for population and gender demographics to 2020

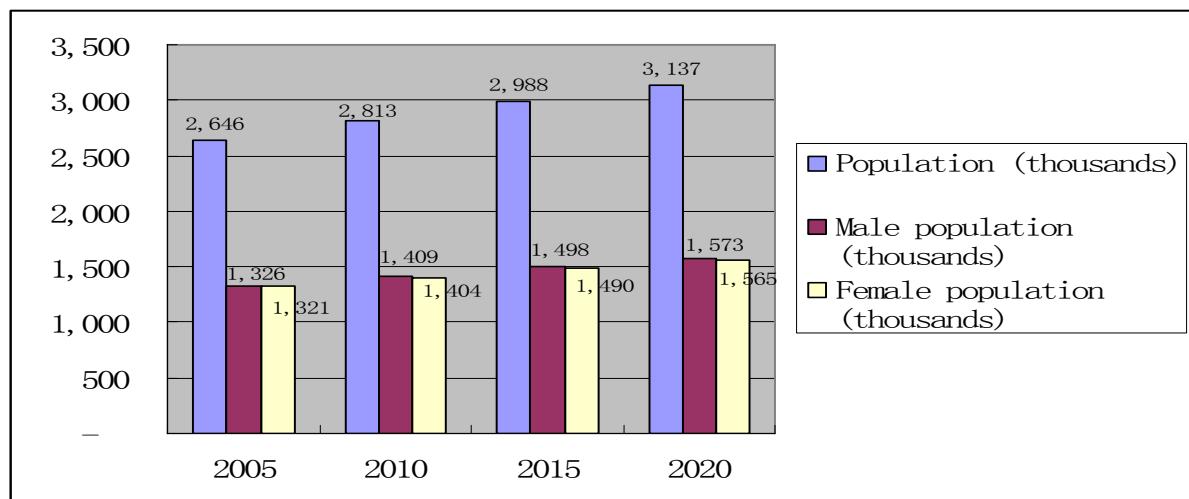


Figure 11. Mongolian population and gender demographic prospect

Based on: Population Division of ESCAP, World Population Prospects: The 2004 Revision.

According to the result of ESCAP World Population Prospects 2004 (Table 17, Figure 11), The Mongolian population will increase from 2.6 million to 3.1 million in the next 20 years. It shows that the sex ratio will slightly increase to 100.5. The fertility rate will constantly decrease.

Table 17. Population and sex ratio prospects to 2020

	2005	2010	2015	2020
Population sex ratio (males per 100 females)	100.3	100.4	100.5	100.5
Population growth rate (%)	1.16	1.22	1.21	0.97
Total fertility rate (children per woman)	2.45	2.21	2.04	1.89

Source: Population Division of ESCAP, World Population Prospects: The 2004 Revision.

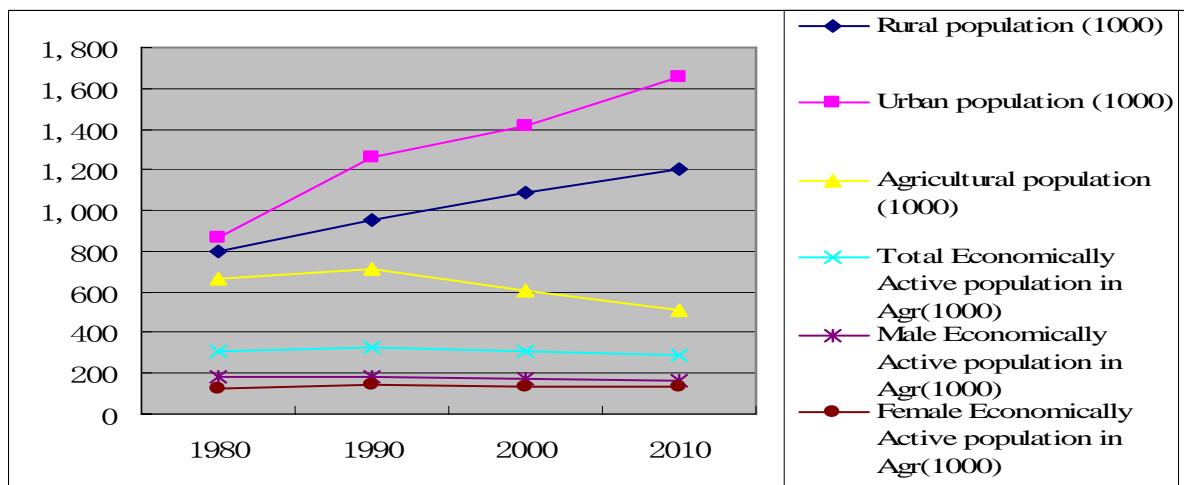


Figure 12. Changes and trends of rural and agricultural population

Based on: FAOSTAT | © FAO Statistics Division 2006.

Analyzing the data of the rural and agricultural population from past to future (see data in Annex Table 4), two trends can be noted: 1) the rural population will constantly increase, while the urban population will sharply increase; and 2) the agricultural population will decrease, but the economically active female population in agriculture will slightly increase while the male population will decrease (Figure 12).

Gender representations in Mongolia forestry

Although both women and men play important, but different roles in the management of natural resources in Mongolia, women's contributions and participation in natural resource use, decision making and implementation have been undervalued. In many cases, in research and in policy making, women's knowledge and abilities are simply forgotten or neglected. The statistical data are very limited as well, especially in the forestry sector because the environmental protection functions of forests are more important than economic functions in Mongolia. The main tasks of Mongolian-related forestry are fuelwood collection and reforestation.

Gender statistics in farming and household work (including firewood collection)

According to the survey of Odgerel (Figure 13), men usually do most of the work outside and away from the home, particularly selecting pastures, haymaking, herding animals, participating in meetings and business management. However, almost all of the men's work is seasonal. In contrast, women's work is continuous during the day and during the year. Although women participate mainly in animal husbandry, processing milk, taking care of children and housekeeping, they also occupy nearly 75 percent in the task of collecting firewood. This information corresponds with national data and the tradition of labor distribution in herding households.

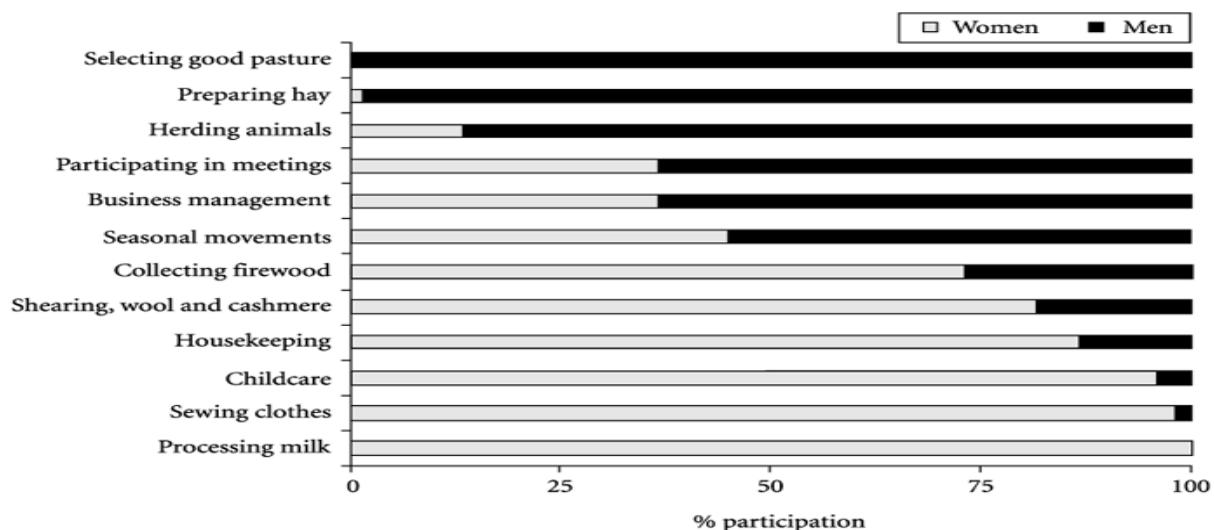


Figure 13. The participation of men and women in farming and household work
Source: Odgerel (2002).

Gender statistics in protection of natural resources (including reforestation)

Mongolians have a long tradition of natural conservation. Women have major roles in protecting forest as well as reforestation and they teach their children how to protect and soundly use nature. Cleaning campsites, rivers, and drinking and washing water areas is usually done by women. But the busy housework hinders women from practising participatory natural resource management.

Table 18 indicates that community members perceive that women play important roles in protecting natural resources. They do 73 percent of the reforestation work which is much greater than men. Also they take the main responsibility for education of their children in protecting natural resources.

Table 18. Sex disaggregated data in the protection and restoration of natural resources

Task	Responses indicating who has responsibility (%)	
	Women	Men
Protecting the environment	68.3	31.7
Reforestation	73.3	26.7
Collecting forage plant seeds	100.0	0.0
Education of children in ecology	66.7	33.3

Source: Odgerel (2002).

Relevance and impact of gender issues on forestry

Main issues

Women take the main responsibility for firewood collection

In Mongolia rural residents close to the forest with no access to electricity burn wood collected from forests. Because of the country's harsh temperatures, heating houses in the winter is an important issue. In wooded areas, residents of *ger* districts spend a fair amount of time collecting firewood. In urban areas, smoke from fires made of wood or coal is one of the main sources of air pollution. Human population numbers are increasing and so is firewood consumption.

The alternative fuel and more efficient stoves like the dung stove are intriguing. They are concerned with the overuse of saxaul and juniper for fuelwood. The Mongolian women were especially interested in learning about new and appropriate technologies, such as dung burning stoves because they take the main responsibility for firewood collection.. They understand that burning juniper and saxaul is not a long-term option. The introduced new technologies could reduce the amount of firewood that women must collect, save time and improve security when women collect wood outside far away from the *ger*.

Besides, although Mongolian women have a great impact on forestry, the heavy daily workload hinders their participation in community decision making and in meetings about natural forestry resource management. From this we can deduce that by decreasing women's workload, it is possible to increase their participation in natural forest resource management.

Women's major contribution to reforestation and educating children about ecology

In Mongolia the environmental protection functions of forests are more important than economic functions. The strategy of the forestry sector focuses on management, protection of the forest ecosystem, prevention of forest fires and an unexported wood production policy. Log exports were banned in 1995. Since then the timber industry has now collapsed. The Government of Mongolia implemented a national program in 1998 for the protection and proper use of forest reserves. A total of 9030 hectares were reforested in 2000. In 2001 the program was renewed. One objective is to reforest 10 000 hectares of land annually (Second National Report, 2002). Mongolia has gained good experience and professional knowledge on reforestation. More than 10 000 people have been educated in various forest specializations and there are currently 3 000 employees in the sector (Implementation of Agenda 21 Mongolia Country Profile, 1996).

Mongolian women play important roles in protecting natural forest resources. Reforestation is usually done by women. Moreover, they take the main responsibility for teaching their children about the environment and the traditional customs of appropriate use and protection of natural resources. Because Mongolians have a long tradition of natural forest conservation,

women have major roles in keeping that tradition as they teach their children how to protect and soundly use nature forest resources.

Impacts of market economy and privatization

Since 1990, Mongolia's structural adjustments to transform the economy — price liberalization, privatization, removal of trade barriers, and downsizing of government — led to massive cutbacks in production and aggravated unemployment and poverty. Many responded to the massive economic change by migrating in search of opportunities, working in the growing informal sector, having fewer children, and trying to eke out a living from herding. There has been a widening 'reverse gender gap' in secondary and tertiary education though enrolment rates of both boys and girls have fallen. In secondary education, gross enrolment rates of girls are 20 percent higher than boys while in tertiary education women now account for 70 percent of all students. The main reasons for the growing gender gap in education have been the withdrawal of boys from school to assist in income-earning activities, mainly herding and the collapse of the vocational education system (i.e. male-oriented education like forestry) (National Statistical Office of Mongolia, 2003).

The economic transition has had a major impact on gender issues related to forestry as well. Mongolia's increased informal sector workers are often well educated and are predominantly women. Those who enter the informal sector in Mongolia do so as a survival strategy, in reaction to falling incomes and a decline in the ability of the state to provide economic security. They look to new ways of exploiting and harnessing the environment. Small-scale trading activities, like the collection of berries, nuts and firewood, and their sale, help supplement incomes and provide healthy foodstuffs and fuel for urban and rural consumers alike. So the natural forest provides an untapped resource, which can be drawn upon in times of difficulty.

Mongolia's new constitution allows people to move freely. Mongolians have migrated from cities to the countryside, and especially later in the 1990s, from rural areas to cities. By 2000, some 21 percent of the populace had moved. The opposing trends peaked at different times during the decade of adjustment, and reflected changing stimuli (Human Development Report Mongolia, 2003). Vast migration has led to pollution in urban areas. Yet deforestation becomes one of the main environmental challenges Mongolian faces. Poverty has led to the cutting down of forests on the peripheries of major settlements. At the same time, as women's responsibilities have increased, some traditional work divisions have been strictly maintained and the overall workload for women has increased. This may hinder women from participating in natural forest resource management.

But the overall outlook of the economic transition is positive. Much of the policy, legal, and regulatory framework is in place or close. Substantial basic investments have been undertaken, many by the private sector. The Government has the core capacity to support private sector led development. Private sector capacity, though nascent, has improved. The Government has adopted a poverty reduction strategy and is working to elaborate development objectives.

Civil society, including many NGOs and a progressive media, has increased its influence (Country Strategy and Program 2006-2008: Mongolia). Also it has seen greater emphasis placed on non-State efforts in forest management including the privatization of a number of forest management agencies, the initiation of efforts in community forest management, and creating new opportunities for women's participation. Recent experimentation with new systems of forest land tenure may eventually provide new and innovative means of achieving the country's forest management objectives. In the future this will attract more women involved in forestry management, especially at the community level.

Women's access to policy making

The Constitution of Mongolia states equal rights for men and women. However, women's roles and visibility in public affairs have significantly declined since 1990 (Ginsburg and Gansorig 1996). This precipitous decline is due to the cancellation of the quota system for women in effect during the socialist era. In all government departments there are numbers of women to be found but mainly in lower positions. In professional fields, though women are present, their positions within the power structure overall are lower than men's. The impressive educational achievements of women have not reversed this situation.

Wood collection and reforestation activities which are female-dominated fields in Mongolia are managed and headed mainly by men. Men have a greater role in decision making for forest management, for example, by participating in community meetings and making agreements with community leaders on behalf of their households.

Recently women's participation in natural forest resource management been taken into consideration, and recognition of their work and key contributions is gradually increasing. Women are also slowly receiving more support for their activities. Since the introduction of co-management, herders have become more likely to cooperate in natural resource management. Their knowledge and motivation to protect and restore natural resources such as reforestation have improved. In particular women's roles and participation in natural resource management have increased in communities. Due to the development of women's organizations and women's involvement in community meetings, women's participation in the decision-making and implementation process related to forestry will increase in future. Especially at the community-based level, women will express their opinions and interests in forestry more strongly. But the division of labor between men and women has not changed yet, and the women's agricultural labor burden has tended to increase; this will hinder progress.

Limited statistical data on gender issue-related forestry

The gender statistical data related to the forestry sector are very limited in Mongolia. The statistical data for employees in timber harvesting and wood factories divided by gender are almost non-existent. There is lack of information related to forestry on the gender-differentiated effects of policy measures and gender-differentiated processes of social change after economic transition as well. Existing data sources provide only indications and

insights of the overall picture of gender structures in household forestry activity.

These constraints have prevented extrapolation of the data in a wider sense, or the ability to draw sufficiently robust conclusions on gender structures across the various sectors of forestry in Mongolia. It has also been difficult to undertake meaningful benchmarking of gender equality across various sectors of the industries or organizations in forestry.

In the future it is suggested to promote training in gender analysis and systematically integrating gender statistics in forestry-relevant research and analysis in Mongolia, so as to identify and understand the different and changing roles, responsibilities and interests of women and men in forestry and improve the situation of forest resource management.

Key points to retain

The environmental protection functions of forests have more emphasis in Mongolia. Log exports were banned in 1995 and the legal timber industry has largely collapsed. Women represent 40 percent of the total labor force, but they are responsible for 73 percent of the main forestry activities in Mongolia which are firewood collecting, reforestation, and education. In the future more women are expected to be involved in forestry management as well.

Republic of Korea⁴

Resource utilization

Forest resources

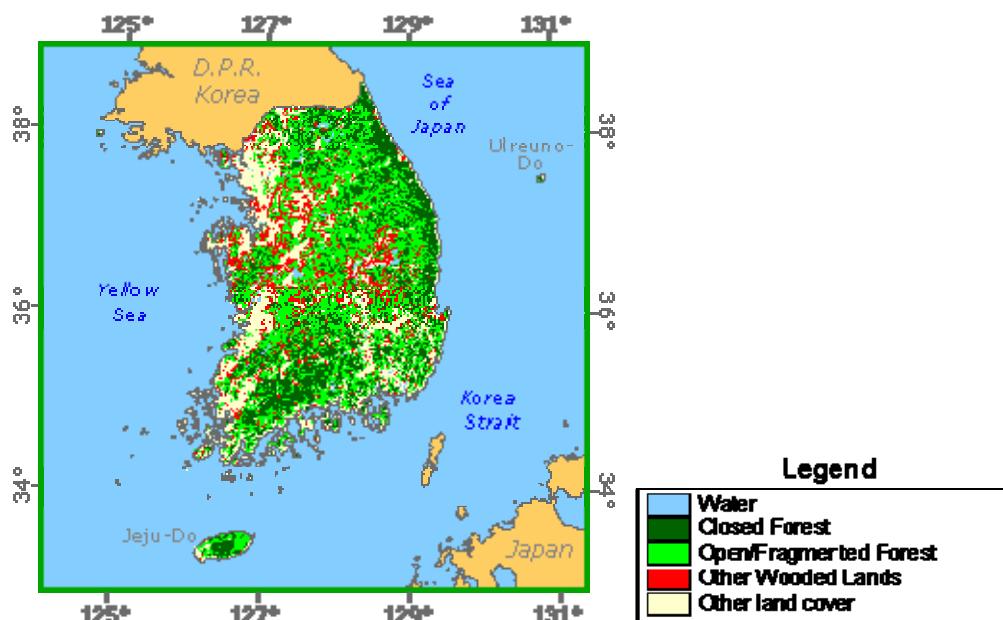


Figure 14. Republic of Korea forest cover map

Source: Global Forest Cover map produced as part of FRA 2000.

Due to its diverse climatic and geographic conditions, the Republic of Korea (ROK) exhibits various types of forests. They can largely be divided into warm-temperate, cool-temperate, and frigid forest zones (Figure 14). Conifers used to cover more than 40 percent of ROK's entire forest lands, but that trend is changing to show higher coverage of broadleaf trees and mixed trees. The total forest land in 2005 was 6.265 million ha (Table 19); 7.7 percent of forests are owned by local governments. Because parts of the forests were appropriated as public facility sites and industrial complexes, the ratio of forest to total land area decreased from 67.1 percent in 1970 to 63.5 percent in 2005. The success of the government's reforestation policy which transformed naked hills into thick forests lost its gloss to a degree due to forest fires and damage brought about by the surge of mountain visitors and hikers.

⁴ Based on: FAO internal website>Forestry Department country profiles.

Table 19. Characteristics of ROK forests

FRA 2005 categories	Area (1000 hectares)		
	1990	2000	2005
Modified natural	5,623	5,112	4,901
Productive plantation	748	1,188	1,364
Total	6,371	6,300	6,265

Source: FAO, Global Forest Resources Assessment 2005.

Products

The removal of wood products in ROK from 1990 to 2005 increased to 4.074 million m³ and so did the value (Table 20). Forestry production has constantly increased in the last two decades. The export of forestry products peaked in 1990 and since then has declined. ROK has largely depended on imported timber products and the current (2004) self-sufficiency rate is merely 6%. Domestic timber demand will continue to increase due to economic development and population growth, and mainly be met by imported timber. ROK has established timber plantations and developed forest resources abroad.

Table 20. Removal and value of forest wood products

FRA 2005 categories	Volume (1000 cubic m ³)			Value (1000 US\$)		
	1990	2000	2005	1990	2000	2005
Industrial roundwood	1,204	1,570	1,754	133,609	128,693	202,667
Woodfuel	2,707	2,449	2,320	15,019	10,033	13,404
Total	3,911	4,019	4,074	148,628	138,726	216,071

Source: FAO, Global Forest Resources Assessment 2005.

Management

Objectives, plans and trends

Following the Korean War and preceding decades of deforestation and forest degradation, management objectives were necessarily aimed at forest restoration and rehabilitation, with a particular emphasis on mitigating and preventing soil erosion. In recent years, the primary objective in managing natural resources, including forests, has been sustainable development as targeted in the Fourth Long-term Forest Plan. In 1994, the Forest Law was amended to reclassify forest lands into three categories — productive, protective (environmental) and convertible (multi-purpose or semi-conservation) forests. This reflects a new emphasis on multiple objectives for forest management. The major goals of the Forestry Promotion and Mountain Village Development Law support this framework by encouraging private forest owners to actively participate in managing forests, and by strengthening government incentive systems to promote further development of national timber resources.

The management emphasis is broadening to aim at achieving a balance between conservation and development. Thus, while establishing commercial forests will remain an important aim, future goals include improving the land-use system, enlarging the forest management structure and infrastructure, and developing and promulgating forest management and silvicultural techniques. The government provides a number of incentives for forest management ranging from financial subsidies to extension.

At the forest level, there has been a move towards devolving responsibility. Since 1978, the government has trained forestry extension agents to liaise with Forestry Cooperatives, with the aim of informing private forest owners of techniques that advance sustainable forest management. In addition, the government is involved in a number of cooperative management projects in private forests to benefit local communities, promote safe forest management, and achieve multiple purpose management. These typically involve non-wood income sources such as mushrooms, mountain vegetables, bee-keeping, and wild flowers. A natural recreation project has also been implemented to promote multiple use management of forests by simultaneously focusing on both farmers' income and the rapidly increasing demand for forest recreation. Around 100 natural recreation forest zones have been established.

Public participation

The majority of forest land in ROK is under small private ownership. Seventy-one percent of forest land is privately owned, with more than two million people holding titles to forests. The fragmentary nature of ROK forest ownership means that achieving consistent management of forest units is difficult, but a critical component in achieving goals for sustainable forest management is likely. Much public participation in forest management comes under the auspices of Forest Cooperatives, which provide for collective management of small private forests.

Various stakeholder groups participate in policy formulation and decision-making processes. A number of important groups, including local communities, environmental organizations, model forest managers and educational societies, are presently playing important roles in a drive to develop policy frameworks to support sustainable forest management. Under the current Fourth 10-Year Forest Development Plan, a forest village development program will be expanded nationwide and be focused on forests with high investment values.

Following the Asian economic crisis, the government launched a Forest for Life Project in 1998, to hire unemployed people for silvicultural work including weeding, pruning, thinning and understorey cutting. This project, which ended in 2002, has helped to raise public awareness of sustainable forest management. To help ensure effective implementation of scheduled forest tending activities, the government is promoting a national tending campaign with participating groups. During the tending period (the month of November), various forest-related activities are undertaken in order to improve people's awareness of the importance of managing forests.

Gender roles

History

Like many societies, Korea has been a patriarchal society since the beginning of its history (Nugent, 1998). In traditional Korean society, women were largely confined to the home. From a young age, women were required to learn the Confucian virtues of subordination and endurance to prepare for their future roles as wives and mothers, while being denied any opportunity to participate in activities outside the home. Their role was limited to the management of the large extended family and the producing of a male heir so that the family line might continue unbroken.

At the end of the 18th century, the emergence of practical science introduced the issue of equal human rights and, in a limited way, provided positive views on women's social participation. The introduction of western learning became a prime motivating factor in stressing the equality of humanity and in treating women as human beings. At the end of the 19th century, the opening of Korea to the outside world accelerated women's social participation.

The Constitution of the Republic of Korea promulgated in 1948, guaranteed respect for the dignity of individuals and equality between men and women as a guiding principle under the initiative of democratic legislative measures. Based on this principle, various legislative reforms have been implemented and the status of women in ROK has undergone enormous changes. Accordingly, discrimination against women in political, economic, social, cultural, and other fields has lessened.

A series of successful economic development plans has helped ROK achieve remarkable economic growth and social transformation. However, the progress in improving the status of women has been less impressive. Women have had increasingly greater opportunities to take part in economic activities. But the number of women holding policy-making positions in administration and management is still very small (Young-Joo Paik, 1998).

Current status

The government supported ROK women through the introduction of the Ministry of Gender Equality in January 2001. Furthermore, the government implemented quotas for successful female applicants from 1996 to 2002, which in 2003 were changed to Gender Equality Hiring Goals, which is a short-term plan (effective from 2003 to 2007) that mandates hiring quotas for both genders: if any of the gender does not reach 30% at the time of employment, the 30% quota must be met with those who passed the entrance process. For the period 2003-2007, the quotas for gender equality have been applied to all the open competitive exams for civil service. As a result, more women are becoming civil servants. The increased participation of women has been one of major changes in the structure of the civil service in recent years, and this trend will continue in ROK. At the same time, women's participation in economic

activities has been increased as well.

Besides, with added freedom, many ROK women feel highly pressured because they are burdened with both earning a living and their traditional roles as housewives. Modern ROK women are facing both physical and mental exhaustion due to the demands of society and their families (Yorks, 2003).

Trends

Even though women's socioeconomic activities have increased, their influences on ROK society and government have not been enhanced much. The vast majority of women are in lower-level positions and clerical and secretarial occupations (i.e. low-paying jobs). Women are rare in higher and middle-level positions or in professional and administrative occupations (Kim, 2003). Thus, the target system aimed to increase the ratio of female managers in the government to at least 10% by the end of 2006. The use of policies for gender equality will increase women's representation in the ROK's civil service.

On the other hand, recently the government announced a comprehensive women workforce development plan: Dynamic Women Korea 2010. With a vision of 'Jumping High into Advanced Economy through Utilizing Women Workforce' the Dynamic Women Korea 2010 Plan sets the goals of achieving 55% female participation in economic activity and extending new 600,000 female jobs. 600,000 women jobs will be arranged in the 4 fields of social service, national strategic and local specialization, public and large corporations and small businesses, accordingly, the opportunity for women-power development and employment will be extended.

For the goals, the government is planning to implement 5 fields, 15 major goals and 140 business tasks which will be implemented in the next five years. The 5 fields include: extension of female jobs; women-power development to directly develop and utilize the female workforce; construction of female workforce infrastructure; formation of a basis for compatibility in the workplace and family to support job enlargement; and consolidation of an implementation system to synthetically implement the tasks. The 140 business tasks consist of 62 new tasks to be newly implemented by 13 ministries and local governments, and 78 tasks extended and strengthened from existing tasks.

Together with the comprehensive female workforce development plan, the government also deliberated and confirmed the 2nd Women Policy Basic Plan 2006 Implementation Plan at the women policy mediation committee meeting (Ministry of Gender Equality & Family of Korea).

Gender structure

Population and gender structure

Historical population and gender demographics

The population of ROK increased from 38.1 million to 48.1 million between 1980 and 2004, but the growth rate has slowed especially in recent years (Table 21). Females made up 49.8 percent of the total population and 41 percent of the total labor force in 2004, which has increased but is still less than male counterparts. Regarding policy making, women occupied around 6 percent of the total seats in parliament, which slightly increased during these years but was still much less than the average in East Asia and the Pacific. Women held only 6 percent of all ministerial level positions.

Table 21. Historical ROK population and gender statistical data

	1980	1990	2000	2004
Population total (millions)	38.1	42.9	47.0	48.1
Female (% of total)	49.5	49.7	49.7	49.8
Urban population (% of total)	57	74	80	81
Urban population growth (annual %)	5	4	1	1
Labor force, female (% of total labor force)	37	39	40	41
Total fertility rate (births per woman)	2.8	1.6	1.5	1.2
Women in parliament (% of total seats occupied in the Lower or Single House)	..	2	4	6
Women in ministerial level positions (%)	..	..	..	6

Source: The World Bank Group.

Current status and prospects for population and gender demographics to 2020

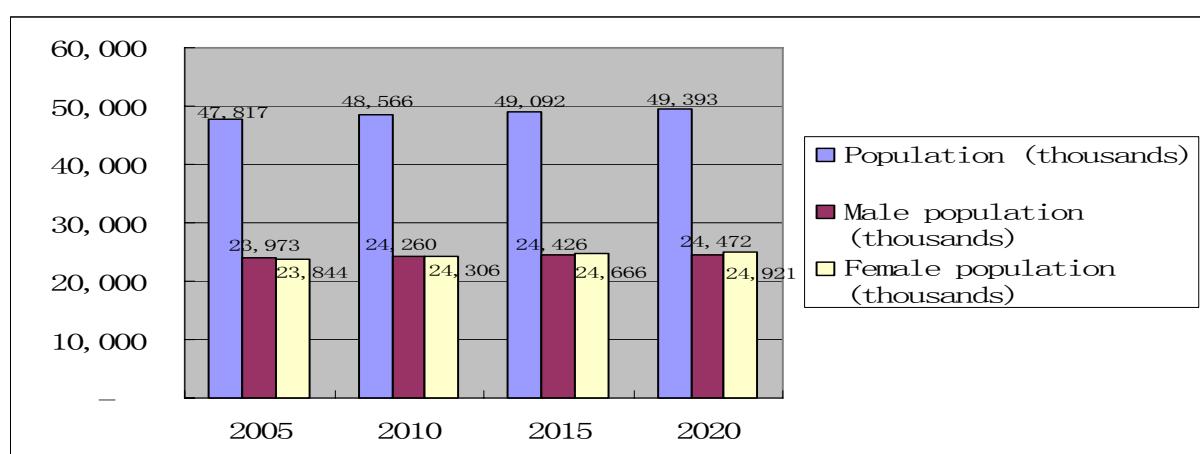


Figure 15. ROK population and gender demographic prospects

Based on: Population Division of ESCAP, World Population Prospects: The 2004 Revision.

According to ESCAP World Population Prospects 2004 (Table 22, Figure 15), the ROK's population will increase from 47.8 million to 49.4 million in the next 20 years but the growth rate will slow down. There will be more women than men. The sex ratio is expected to decrease to 98.2 males per 100 females to 2020. At the same time, the fertility rate is expected to increase.

Table 22. Population and sex ratio prospects to 2020

	2005	2010	2015	2020
Population sex ratio (males per 100 females)	100.5	99.8	99	98.2
Population growth rate (%)	0.44	0.31	0.22	0.12
Total fertility rate (children per woman)	1.23	1.21	1.28	1.35

Source: Population Division of ESCAP, World Population Prospects: The 2004 Revision.

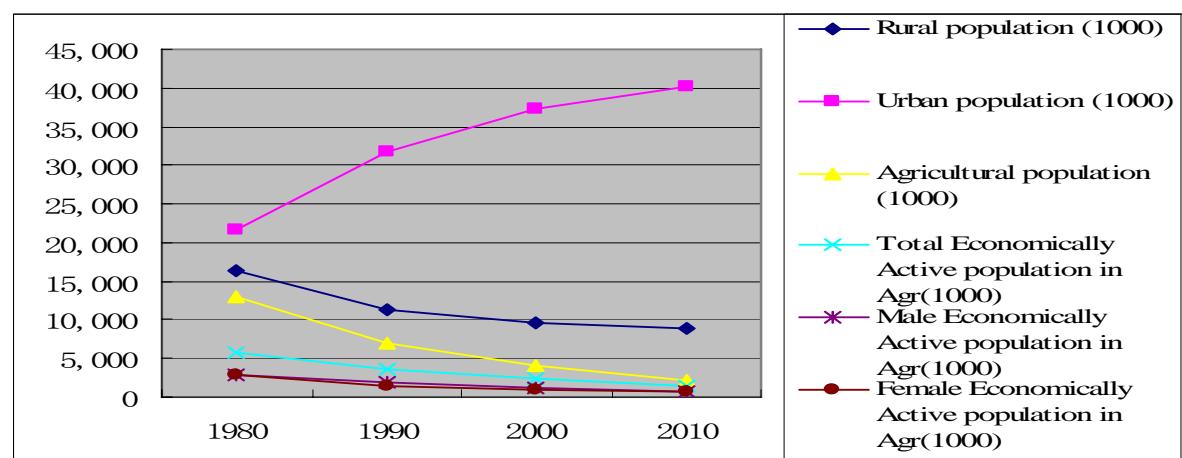


Figure 16. Changes and trends in rural and agricultural populations

Based on: FAOSTAT | © FAO Statistics Division 2006

Analyzing the data of the rural and agricultural population from past to future (see data in Annex Table 5), there are two trends: 1) The rural population constantly decreases while the urban population sharply increases; and 2) the agricultural population will decrease, so both female and male active populations in agriculture will decrease, and there will be almost as many women as men (Figure 16).

Gender representations in ROK forestry

Historical trend of gender representations in forestry

According to sex disaggregated forestry data reported by the International Labor Organization, women only occupied 11 percent of wood preparation workers and paper makers, and 6 percent of cabinetmakers in 1983 (Table 23). Since then, women have recorded a growing representation in various occupational roles related to forestry like cabinetmakers and related woodworkers and woodworking-machine operators (Figure 17). By 1990, women comprised

21 percent of wood preparation workers and paper makers, and 19 percent of sawyers, plywood makers and related wood-processing workers. Women are primarily engaged in wood cabinetmaking, treating, or preparation, while fewer are involved in logging. More women have worked as woodworking machine operators recently. Nevertheless, males still dominate in all aspects of forestry employment.

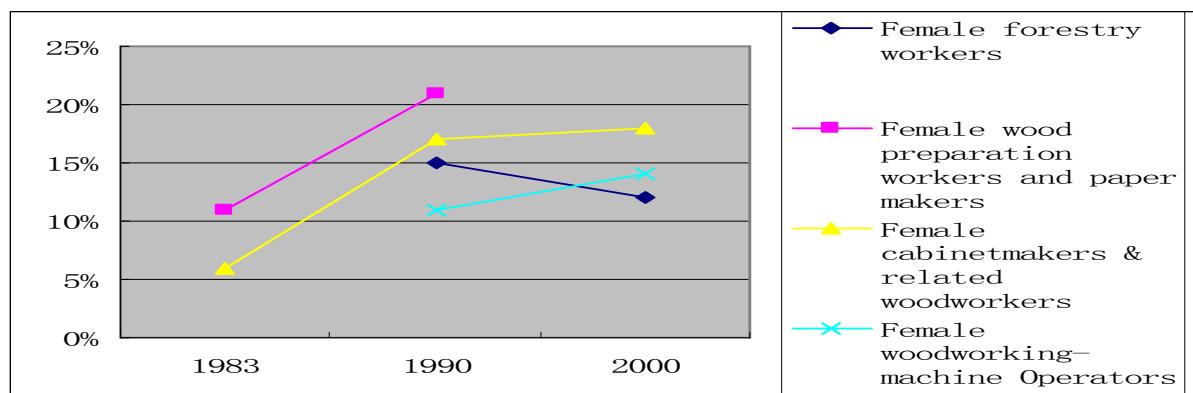


Figure 17. Historical trend of percentage of female workers in ROK forestry

Table 23. Workers in the ROK forest sector

1983	Total	Female	Female %	Male	Male %
Wood preparation workers and paper makers	56,000	6,000	11%	50,000	89%
Cabinetmakers and related woodworkers	72,000	4,000	6%	67,000	93%
1990					
Forestry workers	3,108	451	15%	2,657	85%
Loggers	1,362	160	12%	1,202	88%
Forestry workers except logging	1,746	291	17%	1,455	83%
Wood preparation workers and paper makers	35,703	7,374	21%	28,329	79%
Wood treaters	5,688	814	14%	4,874	86%
Sawyers, plywood makers and related wood-processing workers	16,716	3,255	19%	13,461	81%
Cabinetmakers and related woodworkers	73,026	12,594	17%	60,432	83%
Woodworking-machine operators	4,151	475	11%	3,676	89%
2000					
Forestry workers	6,017	730	12%	5,287	88%
Wood processing and paper making plant operators	15,066	1,776	12%	13,290	88%
Wood treaters, cabinet makers and related trade workers	45,906	8,080	18%	37,826	82%
Woodworking-machine operators	3,989	545	14%	3,444	86%

Based on: ILO LABORSTA Internet 2006.

Sex disaggregated data in forestry in 2000

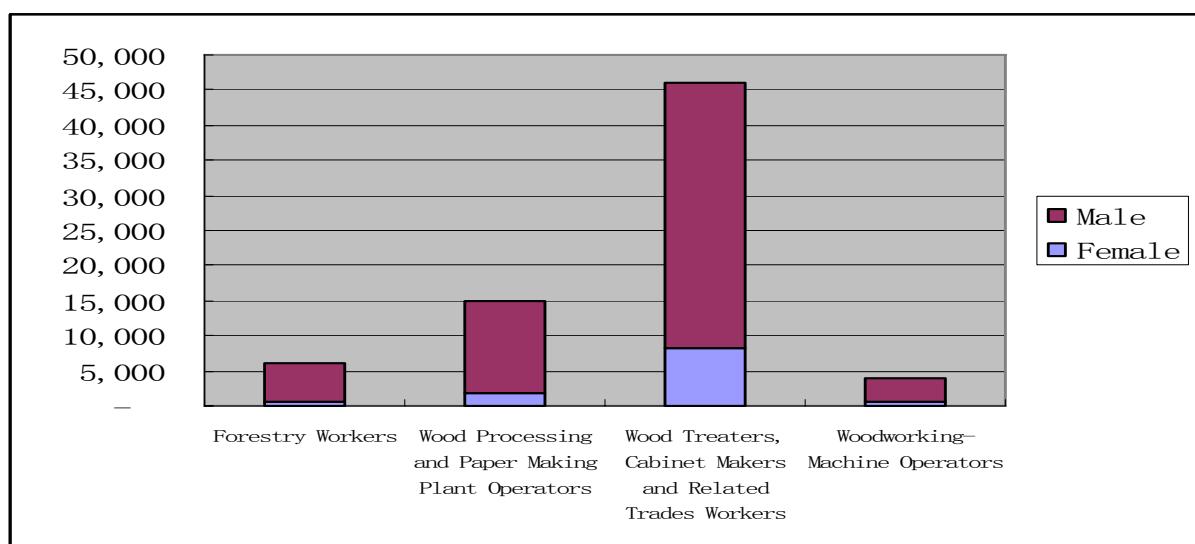


Figure 18. Proportions of female workers of different jobs in forestry in 2000

In 2000 (Figure 18), 730 women worked as forestry workers, representing 12 percent of total workers. Among machine operators, women accounted for 14 percent, while among wood processing and paper making plant operators the figure was 12 percent. Women were primarily engaged in wood treating, cabinet making and related trade work, which accounted for 8080 women representing 18 percent of the total staff.

Relevance and impact of gender issues on forestry

Main issues

Women's participation in forestry activities

As in other north Asia nations, the working population in agricultural as well as mountainous villages has been decreasing and has grown older in ROK. On the other hand, the proportion of women in the overall work force has increased.

The government fully understands that women have played an important role in economic growth. In 2001, the government established the Ministry of Gender Equality in order to promote women's contribution to the development of society and the nation. The Ministry of Gender Equality has tried to strengthen women's roles and has encouraged women's participation in social activities by settlement of gender equality, developing training and education for women, extending maternity leave periods, increasing the number of childcare institutions and increasing the percentage of women's employment. In 1993, only 6 out of 87 (7%) new employees of the Korea Forest Service (KFS) were women, but the percentage of women hired increased to 32% (16 of 50 new employees) in 2003. The percentage of women

employed in the forestry sector is expected to increase in the future.

The KFS has provided technical and financial support to promising foresters who own a certain size of forest land area and are willing to manage the forest in a sustainable and active way. In 1997, there were only two women participating in the program, but this increased to 17 in 2002 and is steadily rising. In the near future, it is expected that more women could participate in the development of forest policy, research and management (National Report to the Fourth Session of the United Nations Forum on Forests, 2004).

Together with the uplifting of living standards, recreational activities are becoming more and more popular in ROK causing a significant increase in the number of forest users. Since 1988, the recreation forest project has been implemented to meet the public demands on forest recreation, environmental education and local income increase. As of 2003, 99 recreation forests amounting to 128,636 ha had been created. A total of 115 recreation forests were planned to be operational nationwide by 2007. In 2003, over 4.3 million people visited recreation forests across the country. Moreover, diverse environmental education programs are provided to enhance visitors' understanding of the forests. Therefore there is a chance for more women to join in forest recreational activities.

The Mountain Village Development Project was initiated by the KFS in 1995 with a view to securing a stable work force for forest management and raising household income to enhance local living standards. For these purposes, more public facilities were built in mountain villages and sawmill construction was encouraged. Many projects including recreation forests, forest road construction, reforestation, forest tending and thinning have been actively undertaken, which women could also participate in. In addition, personnel and product exchange between mountain villages and urban areas has been promoted to facilitate direct dealing of forest products and to raise public awareness on mountain villages. By 2007, 240 model villages were to be developed around the country. The proportion of women in the mountain forest work population will increase.

Environmental education and cultural events are provided to raise awareness on the importance of forests and to provide people with the opportunity to enjoy forests in everyday life. Annually, 50,000 students are selected and they are trained as forest promoters in "Green Schools". Green Schools provide college students and teachers with forest experience and training. In order to meet the growing demands and concern for trees and forests extended by environmental education and recreational activities, a forest museum (0.5 ha) and an arboretum (500 ha) were established within the experimental forest located in Gyeonggi-do in 1987. Since that then nine more local arboreta have been built. They play a significant role in providing biological knowledge and recreational spaces for the public. They also provide job opportunities for women.

ROK society in the 21st century is characterized by participatory democracy, in which NGOs have a greater role. ROK NGOs have grown rapidly since the country's democracy movement in 1987 that reinforced governance by the people. Management and protection of nature as

well as forests is one of significant concerns of these NGOs. Women play important roles in many NGOs. Recently, there have been many forest movements initiated by civil organizations in ROK, such as Forests for Life (FFL), Northeast Asian Forest Forum (NEAFF), Forests For Peace (FFP), etc. (Korea Forest Serves, 2006).

Women's access to decision making

In March 2004, the Political Party Law was revised to increase women's proportional representation (over 50%) in National Assembly and Do/city counsel elections. In addition, an Article from the above Law encouraged political parties to yield 30% of local constituencies' candidacy to women.

The ROK government has been striving to increase women's participation in various government committees since 1989. The Women's Development Act has provided a solid platform for women's participation in policy making roles. Women's participation in government committees only reached 2.2% in 1984, but the participation rate has considerably increased since 1998 (People's Government era). By 2002, the target participation rate (30%) was reached and currently the government strives to reach the participation rate of 40% in all kinds of government committees, including forestry (Korea Forest Serves, 2006).

ROK women's composition in governmental forestry authority is relatively rare, but has increased steadily. In 2001, female management only made up 4.8% of the total but the rate increased to 5.5% in 2002, 6.4% in 2003, and 7.4% in 2004. Today there are 264 women governmental employees who make up 15.5% of the total. At the central level, women comprise 17%, which is higher than the local level (15.3%). Focusing on the forestry sector, women's composition within governmental forestry authority is around 16% of total governmental employees which is higher than the average (15.5%), but still has much more space to improve (Korean statistical data offered by Kiyeon Ko, 2006).

Public concern about gender issues

Women's Studies as an academic teaching subject came into being in ROK in the middle of the 1970s. The introduction of feminist-oriented Women's Studies into universities was sensational and created a debate concerning the relevance of the Western-born scholarship of Women's Studies to ROK society. The main point was that ROK society is culturally different from Western societies, so that Western theories of feminism could not be applied to ROK women.

Women's Studies have been one of the fastest developing academic fields in ROK. Women's Studies courses have been introduced into and taught at many universities and colleges, even though no college or university has instituted Women's Studies as a major or minor discipline at the undergraduate level.

As recognition of gender issues has grown, so has the need for comprehensive and reliable data on women and their concerns. The Women's Information Center (WIC) was established in 1996 to try and meet the country's critical need for data on women. Since the Center was founded, it has been working with a wide range of government agencies and women's organizations both to improve the collection of data on women and improve their distribution.

The WIC's goals are to facilitate government policy making and women's research and activities by systematically gathering data on women from various fields and organizing, packaging and distributing them to national, regional and world-wide audiences. To facilitate its work, the WIC plans to operate an information network which links women's organizations within the country to each other, to ESCAP's regional Women's Information Network for Asia and Pacific (WINAP) and to women's information networks world-wide. As part of its operations, the WIC identifies users of information about women, assesses their needs, conducts studies on information management, and trains network members to set up and manage a women's information system. The WIC also raises awareness about the need for comprehensive data on women and how they can be used. (Young-Joo Paik, 1998)

ROK has made such progress and contribution to gender issues, but unfortunately, accessing well-organized information on gender issue-related forestry has not been easy. Although the volume of information about women in such fields as politics, business, education, labor and industry has been growing rapidly, information is still widely scattered and badly organized and remedying these problems has not been easy. The value of collecting information specifically about gender is still not widely recognized in ROK and the process of collecting, classifying, analyzing and managing gender information especially in forestry is difficult. It is expected that ROK will make progress in this field in the future.

Key points to retain

Women represent 41 percent of the total ROK labor force, 16 percent in the forestry sector is far below this average. Domestic timber demand continues to increase. Forestry recreation and education projects are being developed. Women have recorded a growing representation in various occupational roles related to the forestry sector such as cabinetmakers, woodworking-machine operators and forest services in the last decade, and this is expected to increase in the future as well.

4. DISCUSSION

Common issues in North Asian forestry

Importance of forest resources in North Asia

In North Asia, forest resources make a very important contribution to economies, societies and the environment. It is an encouraging sign that the forest area in China has been increasing during the past 15 years, so the total forest cover in North Asia is increasing. This increase at the regional level, however, is mainly due to the large investments in forest plantations in most North Asian countries; the loss of natural forests largely through conversion to other land uses continues at a very high rate in several North Asia countries. The four countries discussed in this paper all advocate commitment to the principle of sustainable forest management. The deficit between timber demand and supply, and the balance between environmental and economic functions of forests are significant issues for most North Asian countries. The governments of these countries have tried to promote public participation in forestry over time.

Rapid increase in the number of women in North Asian forestry

Gender roles in North Asia have experienced amazing changes over the past hundred years. In their developmental history, Confucianism has had a great influence in North Asian countries. The introduction of Western learning became a motivating factor in stressing the equality of humanity and positive views on women's social participation. With the opening of North Asian countries to the outside world and economic development, women's social participation was accelerated. The constitutions and legislation of these North Asian countries have made gender equality a basic state policy. Accordingly, discrimination against women in political, economic, social, cultural, and other fields has decreased. As the number of women in higher education level has increased, women in the labor force and women's power in decision making has increased as well. But with social development and transition, new situations and problems will weaken or slow progress in the promotion of gender equality and women's development.

Men still dominate North Asian forestry

Much information from North Asian countries has shown that women are primary users of forests through their involvement in food production, fuelwood and fodder collection. As well as often being the primary forest users, women are active and knowledgeable managers and caretakers of the forests. In forest factories, it seems that women are primarily engaged as wooden furniture makers or preparation workers, while being less involved in logging or timber transport. It is also noted that more women have been working as wood working machine operators recently. Women also make a significant contribution to reforestation and forest protection in most North Asia countries. But available statistics on the forestry sector labor force always confirm that men still dominate the forestry sector workforce in all North

Asian countries, and women's participation rates are relatively very low.

Studies of the impact of gender issues on forestry show that women have a complex relationship with forests and the forestry sector. It is clear that although women are significant users of forest products, and they play an important role in forestry activities, they rarely have input into forestry decision making, either at the senior management level or even at the community level in North Asia. The data and feedback confirmed that roles were overwhelmingly unbalanced in favor of men in forestry sector decision making in all North Asian countries. Although there was evidence that nowadays there are more women with majors in forestry who are likely to be just as qualified as men to hold senior positions in the public sector, the balance still clearly favors men. Women in the forestry sector are primarily employed in institutions or administration as researchers or support roles. The "professional" women foresters who have first-line management positions seem to be invisible. If women are involved in decision making about forests, they could better take account of their needs like access to fuel or fodder, which are otherwise largely ignored by men, and could be more ecologically and socially aware of forest conservation issues.

A quota policy to improve gender ratios has been introduced by North Asian Governments

Thus, some countries have introduced a quota policy to improve the representation of women in forestry management or have begun holding seminars and workshops to promote the utilization of women's labor. Policies geared towards equal opportunities and special facilities for women seem to have been successful to break the gender gaps. Most of the North Asian countries have advanced plans for a future gender equality-related forestry sector but they are usually subordinate to the main target which is more focused on the economic aspect. Furthermore, there is no general principle or short cut for quickly increasing gender representation within the forestry sector, due to the hard working conditions as well as traditional values and perceptions of the role of women in the forestry sector. Nevertheless, if increased women's participation in forest activity is due to the limited labor force under these conditions, this may have a negative impact: increased workloads for women and exploitation of forest resources.

There are some good examples of studies and programs designed to improve the involvement of women in the forestry sector. But these examples cannot easily be replicated because there are many uncertain factors that must be addressed and these will vary from country to country due to the different political, social as well as environmental situations among North Asian countries. It is important to let governments recognize that gender relations influence many aspects of forest administration and control. Moreover, gender responsive forestry policies and programs must explicitly take into account the needs, opinions and interests of both men and women, and must be supported at all societal levels for their implementation to be successful.

There is a need to set up reliable databanks for gender issues in North Asian forestry

With the growing recognition of gender issues in forestry in North Asia, the need for comprehensive and reliable data on men and women and their different roles and concerns in forestry has also grown. But there remains a paucity of information and data. Where data are available, these are largely from government or labor statistic organizations; very little information is available from the private sector and most data are out of date. There are many aspects of gender relations in forestry that are still unexplored, e.g. gender efficiency studies. Although the volume of information about women in such fields as politics, business, education, labor and industry has been growing rapidly in some countries, accessing well-organized information on gender issue-related forestry is not easy in all North Asian countries. The value of collecting information specifically about gender issues is still not widely recognized in North Asian countries. So collecting, classifying, analyzing and managing gender information especially in forestry, and drawing sufficiently robust conclusions on present gender structures and impact on various forestry sectors in the future are very difficult in North Asia.

Comparison among the selected countries in North Asia

Gender development status

Achievements in gender equality differ considerably throughout North Asia, reflecting the overwhelming diversity in human development indicators among countries. The gender equality scorecard is marked by disparity, as illustrated in the human and gender development index rankings of all the Asia and Pacific region countries (Table 24). Japan and ROK in the high human development rank score very well on gender development rank. China and Mongolia fall in the medium human development rank but also record relatively lower achievements in the gender development index; however both recorded improvements in gender development rank in 2004 compared to 2001.

In general, the situation of women in North Asia is shaped more by customary laws and social sanctions than by the universal norms of equality that are promoted in the global development agenda (Balakrishnan, 2005). In China and Mongolia, reforms impose new demands on women's roles in economic and social spheres. It could be expected that, with the development of both countries, gender development will continue to be improved in the future as well. In Japan and ROK, the situation did not change much from 2001 to 2004 and it can be expected that a stable and harmonious gender situation will be developed in the future.

Table 24. Relative status of human development and gender development in selected North Asian countries

North Asia	Human	Human	Gender-related	Gender-related
	Development Index ¹ 2001: Rank	Development Index 2004: Rank	Development Index ² 2001: Rank	Development Index 2004: Rank
China	Medium	Medium	76	71
Japan	High	High	11	12
Mongolia	Medium	Medium	104	94
ROK	High	High	29	29

Sources: UNDP Human Development Report, 2001, pp. 212-213, 241-242; UNDP Human Development Report, 2004, pp. 139-142; 217-220.

¹ The Human Development Index (HDI) measures average achievements in three basic areas: a) a long and healthy life (measured by life expectancy); b) knowledge (measured by adult literacy rate and combined primary, secondary and tertiary gross enrolment ratio); and c) a decent standard of living (measured by GDP per capita [purchasing power parity in US\$]).

² The Gender-related Development Index (GDI) adjusts the average achievements measured by the HDI to reflect inequalities between men and women in the same areas. Rank 1 is better than rank 2.

Gender issues in forestry work

The wood industry work of this study refers to timber felling and logging, timber collecting and log transporting, charcoal making and firewood cutting, and reforestation. It is different in the selected countries due to the availability of statistical data and the ways of collecting them. The data could only give a general idea of the differences among the selected countries.

Comparing the gender issues of forestry work in the four selected countries by sex disaggregated data (Table 25), the data show that: 1) China accounts for the highest number of forestry workers in North Asia. Chinese women represent 29 percent of its total forestry workers, which is relatively higher than Japan and ROK; 2) women's participation is similar in Japan and ROK, with women representing 12 percent of the total; 3) the situation of Mongolia is rather different. The environmental protection functions of forests are given more emphasis by the government. Log exports were banned in 1995, and the legal timber industry has now collapsed. So it should be analyzed separately from other countries. The main tasks of forestry work are firewood collecting and reforestation. It should be noticed that women comprise 73 percent in both activities.

Table 25. Forestry workers divided by sex in the selected North Asian countries

Forestry workers	Female	Male	Female %	Male %
China ¹	243,944	610,487	29%	71%
Japan ²	8,006	59,552	12%	88%
Mongolia ³			73%	27%
ROK ⁴	730	5,287	12%	88%

¹ Statistical data for Chinese forestry workers included timber fellers and loggers, timber collectors and log transporters of state-owned enterprises, and workers of national forestry centres in 2005.

² Statistical data for Japanese forestry workers included workers in silviculture, timber fellers and loggers, timber collectors and log transporters, charcoal makers and firewood cutters, and other forestry workers in 2000.

³ Statistic data for Mongolian forestry workers included workers in firewood collection and reforestation in 2002

⁴ Statistical data for ROK forestry workers included workers in silviculture, timber fellers and loggers, timber collectors and log transporters, charcoal makers and firewood cutters, and other forestry workers in 2000.

Because gender issues in forestry work in North Asia are decided more by the working conditions and traditional gender role characteristics than by political philosophy and educational achievements, it is likely that the situation will not change much in the future as it has not changed much during the past decade. Clearly women's participation in reforestation work is expected to increase.

Gender issues in wood industry work

The wood industry work of this study included wood processing, wooden furniture making and related work.

Comparing the gender issues of the wood industry work in the four selected countries by sex disaggregated data (Table 26), the data show that: 1) China, because of its high population, accounts for the highest number of people working in the wood and timber industry in North Asia. Chinese women represent 20 percent of its total wood industry workers, which is the highest in the selected countries as well; 2) The women's participation situation in Japan is relatively higher than the ROK, in which women represent 19 percent of the total; and 3) Mongolia's wood industry has already collapsed as mentioned above so there are no data available.

Table 26. Wood industry workers divided by sex in the selected North Asian countries

China 2000	Total	Female	Male	Female %	Male %
Wood processing and artificial boards	5,602,240	1,109,570	4,492,670	20%	80%
Japan 2000					
Wood industry workers	32,521	6,177	19%	26,344	81%
Wooden furniture makers and related workers	146,140	26,963	18%	119,177	82%
Japan: Sum	178,661	33,140	19%	145,521	81%
ROK 2000					
Wood processing and paper making plant operators	15,066	1,776	12%	13,290	88%
Wood treaters, cabinet makers and related trades workers	45,906	8,080	18%	37,826	82%
Woodworking-machine operators	3,989	545	14%	3,444	86%
ROK: Sum	64,961	10,401	16%	54,560	84%

Based on: ILO LABORSTA Internet 2006.

For the outlook, it is meaningful to note: 1) In China, a growing deficit between timber demand and supply is the significant issue for forestry so more people should be attracted to work in the forestry industry in future. Due to the labor shortage, it is expected that more women will be involved in wood industry work; 2) In Japan, the forestry sector is not a major industry any longer, because Japan has become more reliant on importing wood to meet domestic demand. Many studies deduce that the supply and demand of logs and timber in Japan will continue to decline and Japan will need less labor in forestry. Women's participation in wood industry work may continue to decrease in the future too; 3) In ROK, domestic timber demand continues to increase. Women have recorded a growing representation in various occupational roles related to wood industry work like cabinetmakers and related woodwork, and woodworking-machine operators in the last decade; this is expected to increase in the future as well.

Recommendations

Recommendations for policy makers

- Countries and institutions should establish policies and enact laws that provide more opportunities and facilities to accelerate female participation in forestry
- The legal aspects of gender equality in forestry have to be addressed in a more

- holistic and realistic manner, not only on a quota or quantity basis
- The scope of rural development policies should be widened to encourage women to use forest resources sustainably and increase women's access to forest for income-generating activities to improve their livelihoods and those of rural communities

Recommendations for management

- Forest management agencies should begin a process that will lead to greater emphasis on gender issues in forestry
- Management responsibilities for forestry professionals should be expanded to include the study of gender issues on forestry
- Communities, local people's organizations and NGOs should be involved in designing and implementing strengthening strategies where it is necessary to enhance women's participation in forestry
- Communities, local people's organizations and NGOs should always involve women in planning and decision-making activities instead of merely the implementation of community forestry programs
- Countries of North Asia should impress on the public and private sector the need to comply with existing legislation and to provide data in their annual reporting on gender and forestry
- A more positive and attractive image of women's participation in the forest sector as well as female role models are promoted in the media to encourage more women to become actively involved in the forestry sector and to attract public concern on this issue
- Developing international and regional workshops on gender and forestry, and introducing gender concerns at related conferences

Recommendations for training and education in forestry

- Training of women foresters and women forestry workers
- In the forest community where local knowledge and experience is inadequate, practical training and new technical information should be provided to local women to ensure sustainable and efficient use of forest resources and to increase income levels from forest activity
- Universities, colleges and local training centres should include gender issues in their education programs

Recommendations for scientific research

- International, governmental, non-governmental and research organizations must conduct gender-sensitive studies and include the gender question in future surveys related to the forestry sector
- Research should focus on case studies, especially in the different impact of gender

issues on forestry between different regions

- Specific research should be conducted on the role of gender in forest resource management and women's access to forest as well as women's access to decision-making related forestry
- Baselines and benchmarks should be established to measure changes in gender balance within the forestry sector in North Asia according to Western counterparts
- Governments of North Asian countries should budget for gender-specific research within the forestry sector by allocating resources to mainstream gender issues into high-level research and policy analysis

Recommendations for surveying and collecting reliable data and information

- Better linkages should be developed among the numerous networks and organizations already dealing with gender statistical data related to forestry
- FAO and other international organizations should gather, analyze and distribute information concerning gender issues on forestry in North Asia
- Countries of North Asia should increase the availability, access and use of gender statistics specifically for forestry. Sex disaggregated data and gender differentiated information must be included in the national and industry statistics
- Countries of North Asia should produce national reports of the current situation as well as prospects for gender and forestry

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6. ANNEX: MISCELLANEOUS TABULAR DATA

Table 1. Rural and agricultural population and sex disaggregated data in China

	1980	1990	2000	2010	2020
Rural population (1000)	803,092	838,785	818,974	748,653	663,881
Urban population (1000)	201,075	322,598	463,499	624,251	774,311
Agricultural population (1000)	741,631	834,688	853,771	834,439	..
Total economically active population in agriculture (1000)	407,187	493,124	511,001	503,393	..
Male economically active population in agriculture (1000)	221,290	259,535	267,106	263,571	..
Female economically active population in agriculture (1000)	185,895	233,589	243,895	239,821	..

Based on: FAOSTAT | © FAO Statistics Division 2006.

Table 2. Number of students with majors in forestry at Beijing Forestry University

Year of entrance	Total Students	Female	%
1988	28	7	25
1989	45	16	36
1990	29	6	21
1991	36	4	11
1992	30	9	30
1993	26	9	35
1994	22	10	45
1995	28	6	21
1996	53	22	42
1997	---	---	---
1998	---	---	---
1999	85	32	38
2000	90	26	29
2001	92	44	48
2002	96	46	48
2003	84	40	48
2004	105	55	52
2005	128	46	36
2006	88	45	51

Table 3. Rural and agricultural population and sex disaggregated data in Japan

	1980	1990	2000	2010	2020
Rural population (1000)	47,230	45,621	44,240	42,847	38,640
Urban population (1000)	69,577	77,916	82,794	85,150	86,977
Agricultural population (1000)	12,270	8,613	4,920	2,714	
Total economically active population in agriculture (1000)	6,269	4,669	2,770	1,492	
Male economically active population in agriculture (1000)	3,341	2,541	1,563	874	
Female economically active population in agriculture (1000)	2,928	2,128	1,207	618	

Based on: FAOSTAT | © FAO Statistics Division 2006.

Table 4. Rural and agricultural population and sex disaggregated data in Mongolia

	1980	1990	2000	2010	2020
Rural population (1000)	797	952	1,085	1,202	1,235
Urban population (1000)	866	1,264	1,415	1,658	1,988
Agricultural population (1000)	662	709	607	512	
Total economically active population in agriculture (1000)	307	326	310	292	
Male economically active population in agriculture (1000)	180	183	172	159	
Female active population in agriculture (1000)	127	143	138	133	

Based on: FAOSTAT | © FAO Statistics Division 2006.

Table 5. Rural and agricultural population and sex disaggregated data in ROK

	1980	1990	2000	2010	2020
Rural population (1000)	16,447	11,213	9,545	8,881	7,955
Urban population (1000)	21,677	31,656	37,291	40,200	42,070
Agricultural population (1000)	12,935	6,917	4,109	2,246	
Total economically active population in agriculture (1000)	5,767	3,555	2,387	1,398	
Male economically active population in agriculture (1000)	2,949	1,993	1,310	754	
Female economically active population in agriculture (1000)	2,818	1,562	1,077	644	

Based on: FAOSTAT | © FAO Statistics Division 2006.