Gender Analysis of Labor in Sri Lanka's Estate Sector

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The World Bank

September 22, 2006

[*] We want to thank Ambar Narayan and Dina Umali. The findings, interpretations, and conclusions expressed in this paper are those of the authors. They do not necessary represent the view of the World Bank.

Introduction

Although Sri Lanka leads the South Asia region in many dimensions of gender equality—particularly in health and education—recent country gender assessments have identified employment as a key area of sex-based inequality.[1] According to these studies and other literature on labor market dynamics in Sri Lanka, women have higher unemployment rates than men, are on the losing end of wage gaps, and are under-represented in higher-paying jobs that require advanced skills training and/or are endowed with decision-making authority over others in the workplace.

This paper examines whether the estate sector shows the same patterns in gender-based disparities that are found in other sectors of Sri Lanka's economy. Multivariate analysis of gender-disaggregated data suggests that—as in Sri Lanka's labor market generally—women are underrepresented in higher-status, higher-paying positions. In contrast to aggregate patterns of labor market dynamics, however, in the estate sector women do not face higher unemployment rates, nor are they paid lower wages than men when comparably employed. Below, this paper describes the data, methods, and results of the analysis after first reviewing relevant literature on gender disparities in employment in Sri Lanka, as well as discussing the context of work and gender in the country's estate sector.

Gender-based patterns of labor market activity in Sri Lanka

High unemployment rates, declining labor force participation for women

In spite of leading South Asia in female educational attainment at the primary, secondary, and tertiary levels, Sri Lanka's rates of female labor force participation are only moderate for the region. Even when accounting for underestimation of female labor force participation in labor force surveys—due to the relative invisibility of jobs in the informal sector, which tend to have high concentrations of women—rates of economic activity Sri Lankan females, age 15 and above, are significantly lower than among males and have been declining since the turn of the century (Table 1), from 37.6 percent in 1999 to 34.7 percent in 2004, while men's have hovered around 75 percent (ADB 2004; Sri Lanka Labor Force Survey, various years).

Table 1. Percent of population to be economically active, by gender group and pooled

	Percent of male population (age 15+)	Percent of female population (age 15+)	Percent of total population (age 15+)
Bangladesh 1999-00	87.2	55.9	72.1
India 2001	78.4	37.7	58.7
Maldives 2000	71.7	37.4	54.8
Pakistan 1999-00	83.2	16.3	50.4
Sri Lanka 2000 *	75.7	36.5	55.6

Source: International Labor Organization (ILO) LABORSTA.
* Northern and Eastern Provinces excluded.

[1] See, for example, Asian Development Bank 2004; UNESCAP 2005. CENWOR 2001b.

Female open unemployment rates are among the highest in the region, moreover (Table 2). With the exception of Pakistan, unemployment rates for women in other South Asian countries are both lower in absolute terms and there are smaller gender gaps in unemployment. For example, for the year 2000: 4.3 percent for both males and females in India; 4.2 and 4.9 percent for males and females, respectively, in Bangladesh; and only 0.9 and 0.8 percent unemployment for males and females, respectively, in Maldives. In Sri Lanka, unemployment has tended to be at least twice as high for women as for men, with gaps even more pronounced in the Northern and Eastern Provinces. According to the national labor force survey (which excludes the Northern and Eastern Provinces), in 2004 total unemployment rates were 13.5 percent of the female population and 6.5 percent of the male population. Such high female unemployment rates suggest widespread gender discrimination in Sri Lanka's labor markets; many women who choose to participate in the labor market are turned away.

Table 2. Total unemployment among population age 15 years and above in South Asian countries (in 2000 and most recent figures available per country), separated by gender

	2000		2002-04	
	% of male population	% of female population	% of male population	% of female population
Bangladesh	3.2	3.3	4.2 (2003)	4.9 (2003)
India	4.3	4.3	--	--
Maldives	0.9	0.8	--	--
Pakistan	6.1	17.3	6.7 (2002)	16.5 (2002)
Sri Lanka **	6.4	11.1	6.0 (2004)	13.5 (2004)

* Northern and Eastern Provinces excluded. Source: International Labor Organization (ILO) LABORSTA.

Disparities in Employment in Higher-Status, Higher-Skilled, and Higher-Paying Jobs

Women in Sri Lanka who obtain employment tend to have jobs as factory workers in manufacturing (particularly in the textiles industry), as migrant domestic workers (primarily to other countries)[2], and as manual laborers in the estate sector and in other areas of agriculture. In fact, female contributions to the first three of these labor market sectors have served as the lifeline of the country's export-oriented economy (ADB 2004: 16; Maimbo et al. 2005; UNECE 1991: 929). Females also comprise the huge majority of those employed in Sri Lanka as teachers, nurses, social workers, and clerical/support staff for those (mostly male) in higher-status occupations. Men, on the other hand, dominate those occupations which require high degrees of educational and advanced skills training, especially in the physical sciences and technological fields (e.g., as engineers and information technology specialists) and posts with decision-making authority (e.g., members of parliament, local government officials, and industry management). In 2002, 21.4 percent of senior officials and managers were female (or 0.86 percent of the female labor force, compared to 1.53 percent of the male labor force; in 2003, when including Eastern but not Northern provinces, only 18.7 percent of these higher-level jobs were held by females; and in 2004, when the 3rd quarter survey included all

[2] For more focused research on female Sri Lankans out-migrating to serve as domestic workers, see for example Athukorala 1990; Maimbo et al. 2005; Jayaweera et al. 2002; Haddad 1999; Shah et al. 1991; Yeoh et al. 1999.

districts, 23.5 percent of managers and senior officials were female. In the same quarter, females comprised 20 percent proprietors and managers of enterprises. Men also consistently make up the majority of employees in financial intermediation and real estate, renting and business activities; public administration and defense; construction; and wholesale and retail trade.[3] One of the few high-status professions in which male and female rates of employment are roughly equal is that of medical, dental, veterinary and related workers (Sri Lanka Department of Census and Statistics: Population Census, various years).

The stark division of occupation types between gender groups indicates the emergence of a strong and persistent pattern of occupational segregation, whereby men disproportionately predominate in jobs that offer higher incomes, more alternatives to low-skilled manual labor, and greater decision-making responsibilities.[4] Previous studies have found occupational segregation in Sri Lanka to derive more from gender stereotyping and discrimination ("glass ceilings" and "sticky floors" in upward employment opportunities) than from gender differences in human capital attainments required for work in these fields (Aturupane 1996; Gunewardena 2005). In this sense, Sri Lanka is no different from most countries in the world—developing and developed alike—in which gender biases relegate women to jobs associated with nurturing and homemaking, such as nursing, weaving and embroidery in textile production, and caring for small children. Across cultures and political economies, men tend to predominate in occupations associated with high physical and intellectual demands—particularly those involving complex machinery, science and technology—and jobs endowed with leadership responsibilities, including making decisions about the work of others.[5] Consequently, men they rise to positions of authority more quickly than women, even in job types where workers tend to be female.

Research on women's employment in Sri Lanka also finds that cultural and household factors play as significant a role in determining women's employment decisions as do factors related to education and to economic need (Malhotra and DeGraff 1997; Malhotra and Mather 1997). Across all sectors of the economy, moreover, women must contend with a persistent male-biased wage gap, in spite of receiving a higher increase in earnings for an additional year of education than men with the same education level (Gunewardena 2002). Even in the formal employment sector, which is more subject to regulation than the informal sector, there are sizable gender wage differentials across ethnic groups that are not explained by sex-based differences in productive skills; pooling ethnic groups, the average disparity in hourly wages is a 15 percent premium paid to men (Ajwad and Kurukulasuriya 2002).

[3] Sri Lanka Department of Census and Statistics, 1996-2004. *Quarterly Reports of the Sri Lanka Labour Force Survey*. Colombo: Department of Census and Statistics.

[4] Stoeckel, John and N. L. Sirisena. 1988 "Gender-Specific Socioeconomic Impacts of Development Programs in Sri Lanka." *The Journal of Developing Areas* 23(October):31-42; Department of Census and Statistics, *Sri Lanka Labour Force Survey*, various years (1990-2004), Columbo, Sri Lanka.

[5] See, for example, theoretical and empirical literature by Bielby and Baron 1986a, 1986b; England et al. 1988; Kanter 1975; Lapidus 1978; Og 1991; Preston 1994; Reskin 1988, 1993; Reskin and Roos 1990; Semyonov 1980; Solotaroff 2005.

Gender-Based Patterns in Agricultural Employment

Most workers employed in agriculture are female, even in agricultural jobs requiring higher education and skills training. Women now are the slight majority of entrants into agricultural program's in Sri Lanka's universities: whereas in 1995-96, 48 percent were women, as of 2001-02, 50.5 are women. This is true also of enrollments: in 1995-96, 42.8 percent, and in 2001-02, 51.7 were female (ADB 2004: 13). Yet, underemployment is endemic for most women occupied in agricultural labor, who engage either in wage labor or are unpaid family workers, and the gender gap in returns to agricultural labor is wide (ABD 2004: 41).

Recent trends toward occupational segregation have become more pronounced due to structural changes in the economy and to declining productivity and inadequate incomes in the agricultural sector (ADB 2004; Das et al. 2005). These factors have, in part, caused the percentage of women employed in agriculture, fisheries, and forestry to decline (from 48.6 percent of the female labor force in 1999 to 39.5 percent in 2002), with a concomitant rise in the percentage of women employed in manufacturing (19.3 to 23.9 percent). Though men's employment also has declined in agriculture (from 37.3 percent in 1999 to 31.5 percent in 2002) and increased in manufacturing (from 10.8 to 12.9 percent), the rate of change has been much lower than for women. This trend is counter to that often observed in developing countries, where the women—who generally receive lower salaries than men working in agriculture—assume the agricultural jobs that men leave behind as more attractive employment opportunities arise in urban and rural industry (Lele 1986; Mellor and Johnston 1961; Mellor and Johnston 1984). Research also has found that the percentage of agricultural workers who earn wages (as opposed to unpaid agricultural labor, usually for family enterprises) increases more for women than for men as national income rises over time (Schultz 1990). Of course, women also comprise the lower-paid group in the total industrial workforce of developing nations (Ong 1991).

Background on Sri Lanka's Estate Sector

The legacy of the estate sector in Sri Lanka dates back nearly 150 years. The British launched the industry in early Nineteenth Century with "imported" indentured labor from Southern India. Today's estate population are descendants of this labor, brought into the country until the 1940s. Ethnically this population is classified as Indian Tamils, as oppose to Sri Lankan Tamils who reside in the North and East of the country. The major crop cultivated in the estates is tea, followed by rubber and coconut. Most of Sri Lanka's estate plantations of rubber, tea, coconut, and spices are located in the "wet zone" of Sri Lanka—districts in the southwest part of the country that comprise about one-fifth of the island's total land area.

The estate sector has tended to lag behind the rest of Sri Lanka in educational attainments and health outcomes such as vaccination rates, nutritional status of women and children, and infant and child mortality rates.[6] Preference for boys and fertility rates also are substantially

[6] Department of Census and Statistics. 2002. *Sri Lanka Demographic and Health Survey 2000* (DHS 2000). Colombo: Department of Census and Statistics in collaboration with Ministry of Health Nutrition and Welfare; [cite also SLDHS 1987]; Witwer 1989.

higher in the estate sector, with women in the estates having the highest mean ideal number of children in the nation (3.3 in the late 1980s, whereas for women in Colombo the ideal number of children was 2.8 in the late 1980s).[7]

Poverty in the Estate Sector

The poverty rate in estate sector in 2002 was 30 percent, five percent higher than the average rural poverty rate of 25 percent (World Bank 2006). The estate sector is characterized by immobility, isolation, and marginalization. Due to the nature of industry and the way it was established by the British, estates are often isolated from the rest of the economy. Mountainous areas are appropriate for tea cultivation, and at the same time, they are *remote* and lack accessibility to the outside world. Estate management companies provide housing to workers and their families, a benefit that is conducive of *immobility*. Afraid of losing rights and benefits, many in the estate population remain on the estate and forgo outside opportunities. As in any rural community where social ties are extremely important, moreover, estates are "home" to these populations; they often return to estates after a period of migration. The above factors have led to the *marginalization* of the sector. Citizenship rights were granted to estate migrant workers only recently, in 1988; however, these workers have been living and working in estates for generations.

Employment and Occupational Segregation in the Estate Sector

According to anthropological literature, strict modes of hierarchy govern the estate culture, where stratification occurs according to ethnic background as well as by gender group. Indian Tamils make up the majority of the estate sector population, though only about 5.5 percent of the national population.[8] Yet, the majority of managers in estates are Sinhalese, as opposed to Tamils and Burghers.

Ethnographic research has suggested that different types of manual labor on the estates are relegated to the different gender groups, depending not only on the physical strength required for the particular type of manual task, but seemingly on its fundamental importance maximizing the yield of the tea plant as well:

> If left unpruned, the tea bush will not be a bush but a tree, producing flowers and seeds instead of a flush of pluckable buds. Pruning stimulates growth yet keeps it in a permanent vegetative state. Finally, pruning maintains the bush at a height that lends

[7] There thus has been little improvement since the late 1980s, when the total fertility rate (TFR) was 3.3 lifetime births per woman and well below 3.0 in other parts of the country, with Colombo having the lowest TFR of 2.1. The gap between estate and non-estate outcomes in women's and girl's health has been consistently pronounced: in 1987, children in the estate sector were at nearly double the risk of mortality as in other parts of the country, with an infant mortality rate of 58 per 1,000 live births and mortality of children under five years of 73 per 1,000 live births. Children on the estates also were least likely to have obtained medical treatment for diarrheal disease.

[8] Indian Tamils are distinct from Sri Lankan Tamils (about 12.7 percent of the national population), though both groups tend to be Hindu.

> itself to efficient and productive picking. One prunes with a quick, precise, and powerful stroke of arm and wrist, using the knife called a *kavvattu katti*. Because this skill requires considerable muscle strength, only adult males prune. A weak stroke results in splitting the stem; too ungainly or too free a stroke could damage stems that are not meant to be cut by that stroke; an imprecise hack could result in a poorly angled cut. … Digging drains, like pruning, is considered to be hard work and, therefore, is done by men. The skill required for cutting drains is not as exacting as that required in pruning. This difference is reflected in the difference in wages; pruners are paid twelve or even twelve and a half rupees per day, whereas drain diggers earn only nine (Daniel 1993: 580 … 583).

Women, on the other hand, are relegated to the picking of tea leaves, "the central and most conspicuous activity in a tea estate" (Daniel 1993: 590). According to existing literature (primarily ethnographic), therefore, women make up the majority of estate workers, but occupy the lowest tier of plantation work hierarchies. Existing research also cites the female labor force participation rate of estate workers as being much higher than female participation rates in Sri Lanka generally. While male labor force participation rates are comparable throughout all sectors of Sri Lanka, the participation of women in estate sector is much higher than the rest (Table 3). As of 2003-2004, their participation rate is 47 percent, 18 percentage points higher than that of rural women.

Table 3. Labor Force Participation by Sector and Gender

Sector	Male	Female	All
1996/97 (a)			
Urban	63.3	27.0	44.0
Rural	64.3	32.0	47.6
Estate	61.5	53.6	57.4
All Sectors	64.0	32.5	47.6
2003/04 (b)			
Urban	62.9	26.3	42.9
Rural	65.7	29.0	46.4
Estate	64.6	46.7	55.3
All Sectors	65.3	29.5	46.4

Source: Central Bank of Sri Lanka 2005.

Between the management and manual labor 'tiers' of the occupational hierarchy on tea estates are the estate staff, made up of office clerks, store clerks, factory officers, field supervisors, and sometimes truck drivers. One of the objectives of this analysis is to test the hypothesis that women encounter a "glass ceiling" in the context of the estate sector, in which the gender-stratified occupational hierarchies typical of most workplaces are embedded. If the dynamics of job mobility in the estates are typical of such dynamics in other feminized occupations, we expect the following to be true: although women make up the majority of estate sector workers, there are proportionately much fewer females among staff and, in particular, among managers of estates.

Two other labor categories are associated with the estates, yet are separate from plantation production. In addition to engaging in estates' production, the population living in the estate sector works for employers outside the estates, or are self-employed workers

The recent availability of gender-disaggregated data collected from Sri Lanka's rubber and tea plantations (see description in Data section below) allows for testing of the following hypotheses. 1) Mirroring national patterns of unemployment, unemployment rates for women are higher than for men in the estate sector. 2) As in Sri Lanka generally, women in the estate sector are paid lower wages than men for equal work. 3) Women are underrepresented in higher-status jobs, such as managers, in the estate sector; as in other labor sectors where most workers are women, men comprise the majority of those occupied in management and other non-manual, higher-paying jobs.

Data and Methods

Data

The estate household survey is based on a large sample of over 1,007 households in 43 estates. Carried out between October and December of 2005, the survey was conducted in two stages: first, particular estates were selected purposively based on features such as management type, crop, and remoteness; then about 100 primary sampling units (PSUs) were selected from a total of 668 census blocks in these estates. For each PSU, about 10 households were randomly drawn and interviewed. Samples are from districts with a significant estate population: Nuwara Eliya, Badulla, Kandy, Ratnapura, and Kegalle. The crops covered are tea and rubber. It should be noted that the survey was *not designed to be representative of the estate population*; however, it provides meaningful results in the multivariate analysis when we take estate features into account.

Productivity Regressions

The survey data is first used for bivariate analysis to compare male and female participation rates in different types of labor in the estate sector. In order to examine determinants of productivity in estates, the analysis then employs multivariate regressions. The regressions are also useful in ascertaining the links between management practices and productivity of estate workers. It should be noted that the productivity data is available only for field workers. The regression analysis uses only data from the tea estates to allow for sufficient sample size. Please refer to Annex A for models used in the regression, along with coefficients.

Results

Gender Segregation by Employment Type

Bivariate analysis indicates a distinct pattern of labor allocation between male and female workers by type of employment. Overall, men tend to work in outside jobs or as self-employed workers, while women are concentrated in estate work (see Figure 1). This result corroborates ethnographic research (e.g., Daniel 1993) that describes estate production as being performed predominantly by women. To better understand how this pattern occurs, the multivariate analysis will incorporate variables to test different explanations. One hypothesis, among others, is that this gendered employment pattern is the result of intra-household labor allocation and household bargaining. On the other hand, it could result from estate management labor practices, or other factors (such as culture and social traditions) that would preclude or override economically-oriented decision-making by household members.

Figure 1. Employment pattern between male and female

Source: MOP Estate Survey (2005)

Employment disparities between male and female workers are more evident when looking at earnings (rupees per month). Table 4 displays average monthly earnings for three groups of estate population workers: workers engaging in outside-estate work,[9] workers engaging in estate production, and all workers. Women tend to earn less than men in all groups—even in estate work, where women participate heavily. The initial analysis thus suggests that gender inequality in the estate sector is characterized not by a gap in labor force participation, but by a disparity in earnings. The next section further explores will study this disparity by examining wage comparability and gender segregation. The analysis is limited to work related to estate production.

Table 4. Earnings by gender

	Male	Female	Total
Outside work	4,891	4,189	4,687
Estate work	3,444	3,190	3,305
All workers	4,377	3,509	3,977

Note: Rupees per month. Average over those who are actually employed in respective categories, where earnings are greater than zero.

[9] Yet, these outside-estate workers still live on estates; that is, they are a part of the estate sector population.

Wages and productivity

To examine the comparability of male and female wages in the estates, the analysis next considers the relationship between productivity and daily wages. The fact that data is limited to field workers does not significantly restrict the study, since more than three-fourths of estate workers are field workers. One may hypothesize that wages should reflect an individual's productivity, regardless of gender. This hypothesis can be tested initially by comparing patterns of productivity and wages for each gender group, and then pooling gender groups. Productivity ad wages will be calculated for separate districts because geography may affect productivity, or because wages might be affected by the local cost of living.

Table 5. Productivity and daily wage rates of field workers

	Tea			Rubber		
	Male	Female	Total	Male	Female	Total
Productivity						
Kandy	19.5	18.8	19.0			
Nuwara Eliya	18.3	19.2	19.0			
Badulla	21.8	21.1	21.3			
Ratnapura	15.0	18.8	17.5	8.2	8.2	8.2
Kegalle	23.5	22.4	22.7	8.4	10.4	9.4
Total	19.9	20.0	20.0	8.3	9.4	8.9
Daily wage rate						
Kandy	185	178	180			
Nuwara Eliya	136	136	136			
Badulla	144	145	144			
Ratnapura	143	148	146	142	125	133
Kegalle	125	126	126	128	134	132
Total	141	143	142	135	130	132

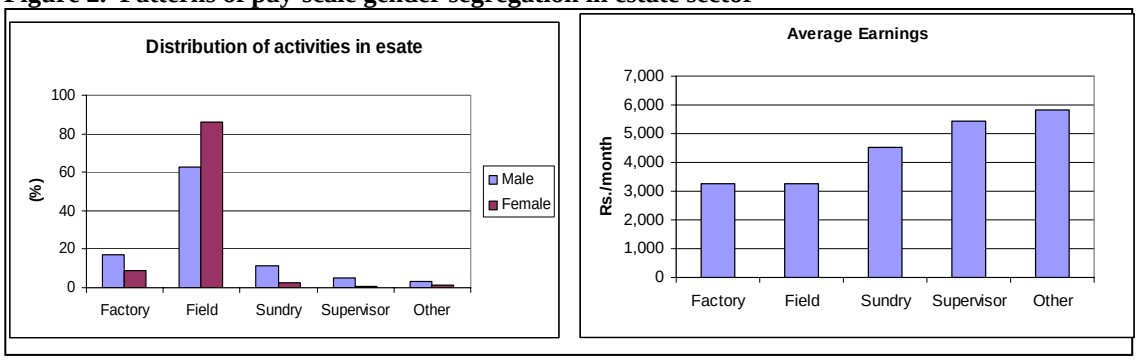
Note: Includes only field workers who quoted daily rates for wages and whose wages are between 100 to 400 rupees. Unit of productivity-- tea: kg of fresh tea leaves per day. rubber: kg of latex per week

The cross-tabulations displayed in Table 5 reveal that women's productivity in tea estates (measured by kilogram of fresh tea lives picked per day) is comparable to that of men in tea production; moreover, in rubber estate work, productivity (measured by kilogram of latex produced per week) is even higher for women than for men. Productivity regressions of field workers in tea estates (see Annex) also confirm that gender of workers does not correlate with their productivity, controlling for individual and estate characteristics. The coefficients of female are insignificant in all models. In both types of estates, wage rates are quite comparable for male and female field workers in most cases. These results suggest that female estate workers are not paid significantly less than their male colleagues who perform the same tasks.

Gender-based Occupational Segregation

Although women's pay is comparable to men's when they are in the same jobs, disparities may occur in gender segregation above and below a 'glass ceiling' of wages. If women work primarily in low-paying estate jobs, though they are paid similarly to men in these jobs, female workers as a whole will average lower earnings than male workers.

Figure 2. Patterns of pay-scale gender segregation in estate sector



This is indeed the pattern visible in Figure 2, which shows distributions of male and female estate workers by job category and of each job's average earnings. Gender segregation by job type appears to be prevalent in estate work. As ethnographic research has asserted, women predominate in field work; as many as 86 percent of female estate workers are field workers. The right-hand chart in Figure 2 indicates that field work is among the lowest-paying work in estates. Few women are employed in the higher-paying jobs, such as sundry workers or supervisors. Although most male estate employees are field workers, men hold a greater variety of jobs within estates, including the most desirable jobs.

Calculating the percentage of female workers among all workers in each job category reveals that gender segregation also varies by type of estate management and type of crop. Overall, gender segregation is less severe in rubber estates, where women account for 25 percent of supervisors, compared to only 5 percent in tea estates. Regional Plantation Company (RPC)-managed estates have done a better job than state-run and private estates in promoting women to supervising positions (Table 6).

Table 6. Percentage of workers that are female, by crop type, management type, and job category

	Tea				Rubber	All			
	RPC	State	Private	Total	RPC	RPC	State	Private	Total
Factory	39	29	44	39	46	40	29	44	40
Field	63	63	68	63	54	62	63	68	62
Sundry	14	0	30	16	36	21	0	30	21
Supervisor	6	0	0	5	25	13	0	0	12
Other	43	20		35		43	20		35
Total	56	47	54	56	49	55	47	54	55

Earlier research has established that regular (or salaried) employment is associated with higher pay and better living conditions for employees' families (World Bank 2006). Looking at the percentage of regular (or salaried) employees by gender, crop, and management type gives a better understanding of the advancement of female workers in estate employment. In general, women also are less likely to be hired as regular or salaried employees (Table 7). Only 11 percent of female workers are salaried, compared to 18 percent of men working for estates. The disparity is most pronounced in state-managed estates, where the percentage of regular employees among men is four times higher than among women (28 vs. 7 percent).

Table 7. Percentage of regular employees (by sex) in estate work

	Tea			Rubber			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
RPC	11.8	9.0	10.2	48.2	27.5	38.0	17.6	11.3	14.1
State	28.1	6.9	18.0				28.1	6.9	18.0
Private	19.4	9.1	14.1				19.4	9.1	14.1
Total	13.3	8.9	10.9	48.2	27.5	38.0	18.3	11.0	14.3

Note: Includes only regular or salaried employees.

Discussion and Conclusion

Compared to other labor sectors in the country, gender equality in employment is relatively high in Sri Lanka's estate sector. Women enjoy high rates of participation in the estate labor force and are paid commensurately. Still, women still face obstacles in estate employment—namely, they move up to higher-level positions (such as in management) and are hired as salaried workers much less frequently than men are. This is in spite of comprising the majority of the estate sector workforce.

There are several possible explanations for sex-based occupational segregation in estate work. One derives from the fact that, compared to manufacturing, the estate sector uses simple technology. The organization of estate labor provides a less obvious, measurable differentiation between type of labor than does the organization of work in manufacturing; in other words, the connection between job grade, remuneration and type of work is harder to understand. Estate management thus faces a greater challenge than managers in other sectors to offer differential pay rates and job grades just because the workers are women.

On the other hand, the estate sector may be a special case. Other sectors with similar modes of work organization and that employ similar levels of technology in production as the estate sector may not display the same patterns of gender segregation in occupational opportunities—particularly in terms of upward mobility into higher-level jobs and salaried positions. This suggests the worth of further comparative research on gender segregation in Sri Lanka's other job sectors. Another path to better understanding the processes of gender-based patterns in estate sector employment is to monitor any changes in these patterns as the estate sector integrates itself into the rest of the national economy.

Annex: Multivariate Regression: Productivity of Field Workers in Tea Estates

	(1)	(2)	(3)
Age	-0.024	-0.021	0.013
	(0.22)	(0.20)	(0.12)
Age squared	0.000	0.000	0.000
	(0.33)	(0.34)	(0.06)
Indian Tamil	3.062	2.797	2.818
	(5.79)**	(5.13)**	(5.08)**
Female		0.285	0.327
		(0.66)	(0.75)
District dummy: Kagalle		0.862	0.258
		(0.41)	(0.14)
District dummy: Nuwara		-2.450	-2.788
		(2.67)**	(4.47)**
District dummy: Ratnapura		-5.075	-4.551
	(6.23)**	(5.65)**	(4.92)**
Estate's management: Private	2.748	3.426	2.374
	(2.34)*	(2.77)**	(1.70)
Estate's management: State	-2.352	-1.764	-2.103
	(2.65)**	(1.26)	(1.94)
Live in estate over 20 years	-1.390	-1.368	-1.417
	(2.52)*	(2.46)*	(2.55)*
HH size	0.227	0.264	0.254
	(2.32)*	(2.64)**	(2.55)*
HH is member of trade unions or political parties		1.787	1.879
		(2.34)*	(2.42)*
HH receive income from entrepreneurial sources		-0.652	-0.504
		(1.02)	(0.78)
HH receive income from outside wages and salaries		-1.463	-1.476
		(3.35)**	(3.39)**
HH met with mgt in the past 2 years		0.918	0.711
		(2.08)*	(1.60)
HH met with union leaders in the past 2 years		-0.614	-0.490
		(1.33)	(1.06)
Community: unions/political the most important group			0.500
			(1.24)
Receive attendance incentive			0.459
			(0.75)
Ratio of workers receiving incentive in community		-0.061	
		(0.05)	
Constant	19.231	17.338	16.312
	(8.94)**	(7.67)**	(7.11)**
Observations	743	743	733
R-squared	0.12	0.15	0.15

Absolute value of t statistics in parentheses

* significant at 5%; ** significant at 1%

References

Ajwad, Mohamed Ihsan and Pradeep Kurukulasuriya. 2002. "Ethnic and Gender Wage Disparities in Sri Lanka, Volume 1." *Policy Research Working Paper*, no. WPS 2859. Washington, DC. The World Bank.

Asian Development Bank. 2004. *Country Gender Assessment: Sri Lanka*. Manila, Philippines: Asian Development Bank.

Athukorala, Premachandra. 1990. "International Contract Migration and the Reintegration of Return Migrants: The Experience of Sri Lanka. *International Migration Review* 24(2): 323-346.

Aturupane, Harsha. 1996. Unemployment among Educated Women. Colombo: Department of National Planning, Ministry of Finance and Planning.

Bielby, William T. and James Baron. 1986a. "Men and Women at Work: Sex Segregation and Statistical Discrimination." *American Journal of Sociology* 91(4): 759-99.

_____. 1986b."Sex Segregation within Occupations."*American Economic Review* 76(2):43-47.

Center for Women's Research (CENWOR). 2001a. "Women Migrant Workers of Sri Lanka." Sourced from: <http:/www.cenwor.lk/migworkersstat.html.>

Central Bank of Sri Lanka. 2005. *The Consumer Finances and Socio Economic Survey Report 2003/04 Part I*. Colombo: Central Bank of Sri Lanka.

_____. 2001b. *Sri Lanka Shadow Report on the UN Convention on the Elimination of All Forms of Discrimination against Women*.

Daniel, E, Valentine. 1993. "Tea Talk: Violent Measures in the Discursive Practices of Sri Lanka's Estate Tamils." *Comparative Studies in Society and History* 35(3): 568-600.

Das, Maitreyi and Rasmus Heltberg (World Bank). 2005. "Ethnicity and Employment in Sri Lanka during a Decade of Conflict, 1992-2002," presented at the Annual Meeting of the Population Association of America.

Department of Census and Statistics. 2002. *Bulletin of Labour Force Statistics of Northern and Eastern Provinces – 2002*. Colombo, Sri Lanka: Department of Census and Statistics.

_____. 1996-2004. *Quarterly Reports of the Sri Lanka Labour Force Survey*. Colombo, Sri Lanka: Department of Census and Statistics.

England, P., L., G. Farkas, B. Kilbourne, and T. Dou. 1988. "Explaining Occupational Sex Segregation and Wages: Findings from a Model with Fixed Effects." *American Sociological Review* 53: 544-558.

Fernando, Jude. 1997. "Nongovernmental Organizations, Micro-Credit, and Empowerment of Women." *Annals of the American Academy of Political and Social Science, Vol. 554, The Role of NGOs: Charity and Empowerment* (Nov): 150-177.

Gunewardena, Dileni. 2005. "The Gender Wage Gap in Sri Lanka." Poverty Monitoring, Measurement and Analysis (PMMA) Network.

_____. 2002. "Reducing the Gender Wage Gap in Sri Lanka: Is Education Enough?" *Sri Lanka Economic Journal* 3(2).

Haddad, Reem. 1999. "A Modern-Day 'Slave Trade': Sri Lankan Workers in Lebanon." *Middle East Report* No. 211, Traffic and Transiting: New Perspectives on Labor Migration, (Summer 1999): 39-41.

Jayaweera, Swarna and Thana Sanmugan. 2001a. *Impact of Macro-economic Reforms on Sri Lanka Garment and Textile Workers* (Study Series No. 20). Colombo: Centre for Women's Research.

_____. 2001b. *Women in Garment and Textile Industries in Sri Lanka: Gender Roles and Relations*. (Study Series No. 21). Colombo: Centre for Women's Research.

Jayaweera, Swarna, Dias Malsiri, and Wanasundera Leelangi. 2002. *Returnee Migrant Women in Two Locations: Sri Lanka* (Study Series No. 26). Colombo: Centre for Women's Research.

Jayaweera, Swarna, Sanmugam Thana, and Amarasuriya Harini. 2003. *Impact of Macroeconomic Reforms in Sri Lanka—Reduction in Public Sector Employment*. Colombo: Centre for Women's Research.

Johnston, B. and J. Mellor. 1961. "The Role of Agriculture in Economic Development." *American Economic Review* 51: 566-93.

Kanter, Rosabeth Moss. 1975a. *Another Voice*. Garden City, New York: Anchor Books.

Lapidus, G. 1978. *Women in Soviet society: equality, development, and social change.* Berkeley: University of California Press.

Lele, Uma. 1986. "Women and Structural Transformation." *Economic Development and Cultural Change* 34(2): 195-221.

Maimbo, Samuel Munzele, Richard Adams, Reena Aggarwal, and Nikos Passas. 2005. *Migrant Labor Remittances in the South Asia Region*. Washington, DC: The World Bank.

Malhotra, Anju and Deborah S. DeGraff. 1997. "Entry Versus Success in the Labor Force: Young Women's Employment in Sri Lanka. *World Development* 25(3): 379-394.

Malhotra, Anju and Mark Mather. 1997. "Do Schooling and Work Empower Women in Developing Countries? Gender and Domestic Decisions in Sri Lanka." *Sociological Forum* 12(4): 599-630.

Mellor, J. and B. Johnston. 1984. "The World Food Equation: Interrelations Among Development, Employment, and Food Consumption." *Journal of Economic Literature* 22 531-574.

Ong, Aihwa. 1991. "The Gender and Labor Politics of Postmodernity." *Annual Review of Anthropology* 20 (279-309).

Preston, Anne E. 1994. "Why Have All the Women Gone? A Stud of Exit of Women from the Science and Engineering Professions?" *The American Economic Review* 84(5): 1446-1462.

Reskin, Barbara. 1988. "Bringing the Men Back In: Sex Differentiation and the Devaluation of Women's Work." *Gender and Society*: 2(1): 58-81.

_____. 1993. "Sex Segregation in the Workplace." *Annual Review of Sociology* 19: 241-70.

Reskin, Barbara and Patricia Roos. 1990. *Job Queues, Gender Queues*. Philadelphia: Temple University Press.

Semyonov, Moshe. 1980. "The Social Context of Women's Labor Force Participation: A Comparative Analysis." *The American Journal of Sociology* 86(3): 534-50.

Schultz, T. Paul. 1990. "Women's Changing Participation in the Labor Force: A World Perspective." *Economic Development and Cultural Change* 38(3): 457-488.

Shah, Nasra M , Sulayman S. Al-Qudsi, and Makhdoom A. Shah. 1991. "Asian Women Workers in Kuwait." International Migration Review 25(3): 464-486.

Solotaroff, Jennifer. 2005. The Entrenchment of Gender Inequalities in Urban China's Workplace Hierarchies. PhD diss., Stanford Univ.

Stoeckel, John and N. L. Sirisena. 1988 "Gender-Specific Socioeconomic Impacts of Development Programs in Sri Lanka." *The Journal of Developing Areas* 23(October): 31-42.

United Nations (UN). 2005. Source:
http://unstats.un.org/unsd/demographic/products/indwm/table2b.htm.

United Nations Development Program (UNDP). 2004. *Human Development Report 2004*. Sourced from: <http://hdr.undp.org/statistics/data/country_fact_sheets/cty_fs_LKA.html>

United Nations Economic Commission for Europe (UNECE). 1991. "Informal Expert Group Meeting on International Migration: United Nations Economic Commission for Europe." *International Migration Review* 25(4) [Special Issue: U.N. International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families]: 920-945.

United Nations Environmental Program (UNEP). 2004. *Globalis*. Source:
<http://globalis.gvu.unu.edu/>

United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). 2005. *Asia and the Pacific Beijing + 10: Selected Issues* (Presentations from High-Level Intergovernmental Meeting to Review Regional Implementation of the Beijing Platform for Action and its Regional and Global Outcomes.) New York: United Nations ESCAP.

United Nations Millennium Project (UNMP) Report 2005. "Taking Action: Achieving Gender Equality and Empowering Women." Taskforce on Education and Gender Equality. Sourced from <http://unmp.forumone.com/eng_html_02.html January 2005>.

Witwer, M. 1989. "Sri Lanka Family Size Declines; Estates Show Greatest Health Needs." *International Family Planning Perspectives* 15(3): 113115.

World Bank. 2006. *Sri Lanka Poverty Assessment*. Washington, DC: World Bank.

Yeoh, Brenda S. A., Shirlena Huang, and Joaquin Gonzalez III. 1999. *International Migration Review* 33(1) : 114-136.