

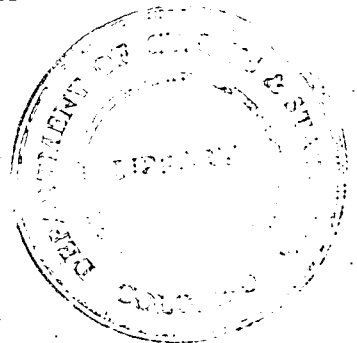
**Monetary Valuation of Unpaid Work
And
Disaggregating GDP by sex
(Case study - 1998)**

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Sri Lanka



Contents

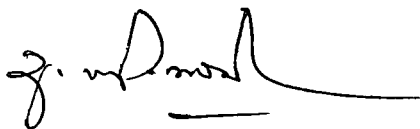
	Page
Forward	
Acknowledgement	
Executive summary	
Introduction	01
Time Use Survey - Methodology	03
Questionnaire	04
Time allocation of total work	05
Paid work	06
Unpaid work	06
Unpaid economic work	08
Unpaid non-economic work	09
Comparison with International data	10
Evaluating unpaid work	12
Three different approaches	
1. Market value – Generalist approach	14
2. Market value – Specialist approach	19
3. Opportunity cost method	22
Comparison of value of unpaid work using different approaches	26
Value of unpaid work as a percentage of GDP	31
Disaggregation of conventional GDP by sex	37
Bibliography	45

Forward

This report is an attempt to give economic valuation to unpaid work, done by both men and women. Time-use patterns of men and women used for this valuation were taken from a case study. This offers some techniques in the valuation of unpaid work and leave room for further refinements, using a nationally representative Time-Use Survey.

Therefore, it is hoped that this can be used as a methodological study for this important task, which has never been attempted in Sri Lanka earlier.

I wish to thank Mrs. Suranjana Vidyaratne, a Director of this Department who has done this research and prepared the report.



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Executive summary

The latest revision of the SNA (System of National Accounts), 1993 recommends the evaluation of subsistence production and defines the production boundaries to include own account primary production. Household maintenance work, however continuous to remain outside the production boundary.

The following table shows how all work is classified

Work	Any activity that can be delegated to a paid worker (Paid work + unpaid economic work + unpaid non-economic work)
Economic work	Work or activity defines as economic under SNA
Non- Economic work	Work or activity defines as non-economic under SNA
Paid work	All paid work are economic work. Value of these activities are included under Current GDP (Gross Domestic Product).
Unpaid work	Unpaid economic work + unpaid non-economic work
Unpaid economic work or subsistence work	Working in the farm or agriculture enterprise owned by one of household members/ doing home based non-agricultural work such as mat weaving, coir work, food processing etc. Value of these activities are supposed to be included under Current GDP, although in practice it is only partially captured.
Unpaid non-economic work or household work	Cooking, cleaning and maintenance of house, washing, mending cloths, taking care of children, taking care of sick and elderly, teaching supervising children's school work, taking them to classes etc. Value of these activities are not included under Current GDP.

It is possible to construct satellite accounts for unpaid non-economic work or household maintenance activities, although it has not been attempted in Sri Lanka as yet. In this study I have attempted to

- assign an economic value to unpaid household work done by women and men, using three different valuation methods.
- present current GDP by sex.
- show how women's contribution to total GDP is increased when the value of unpaid household work (unaccounted GDP) is added.

All of which has not been attempted in Sri Lanka earlier.

For this purpose, time-use pattern of men and women derived from a case study, (Table 6) was used. If this table can be replaced with data from a nationally representative Time-Use Survey, to get more realistic time use patterns, same methodology used in this study can be adopted for valuation of unpaid work for the whole country. However time use surveys are very much complex and different from general household surveys such as labour force surveys, Income and Expenditure Surveys etc.

Non availability of reliable wage rates for women and men by industrial sector also caused problems when doing this study. Because of all the above limitations the current exercise may be taken as a methodological example.

Main findings

- Average value of unpaid work done by women in these two villages were Rs. 4191 per month as compared with Rs. 1579 for men. Breakdown of total unpaid work into unpaid economic work and unpaid non-economic work in monetary terms valued to be Rs. 645 and Rs. 3546 respectively for women. Corresponding values for men were calculated to be Rs. 1005 and Rs. 574 respectively using generalist approach of valuation.

- Using specialist approach of valuation these values were Rs. 5038 per month for women and Rs. 1887 for men. Breakdown of total unpaid work into unpaid economic work and unpaid non-economic work in monetary terms valued to be Rs. 677 and Rs. 4361 respectively for women. Corresponding values for men were calculated to be Rs. 950 and Rs. 937 respectively.
- Value of unpaid economic work as a percentage of GDP was estimated to be 9.6 percent (3.9 percent by women and 5.7 percent by men). Value of Unpaid non-economic work was 24.9 percent (21.7 by women and 3.2 percent by men), according to the generalist approach of valuation.
- Current GDP disaggregated by sex shows that women's contribution is 23.4 percent and men's contribution is 76.6 percent.
- When the value of unpaid non-economic work is added to current GDP and disaggregated by sex, percentage share of women's contribution was increased to 36.1 percent (from 23.4 percent) and that of men was decreased to 63.9 percent (from 76.6 percent), according to the generalist approach of valuation.

Table – Current GDP and unaccounted GDP (value of unpaid non-economic work) by sex

*Sri Lanka (1998)	Current GDP			Unaccounted GDP			Total GDP (Revised)		
	Total	Female	Male	Total	Female	Male	Total	Female	Male
(Million Rs)	1,011,349	236,617	774,731	252,078	219,287	32,791	1,263,427	455,905	807,522
%	100.0	23.4	76.6	100.0	87.0	13.0	100.0	36.1	63.9

Source: * Based on Time-Use Survey (case study), 1998

Monetary Valuation of Unpaid Work And Disaggregation of GDP by sex

Introduction

In the ancient societies both men and women did work to supply food and other essentials required by the family. Women were always contributing to the needs of the family but at a different level as compared with men. They were engaged in cultivation and other economic activities closer to home while engaged in household activities such as cooking, cleaning, washing, nursing and educating children, looking after young children and elders etc. Men were also engaged in economic work, may be in distant places, which involved more time. Both women and men were engaged in subsistence work during that period and were not paid. Later, when market economy concept was introduced to the world of work, men were more involved in paid work out side the house, while a majority of women were continued to be involved in subsistence work. They were engaged in informal sector activities, agriculture as well as non-agriculture in addition to their household work most of which were unpaid.

Formal records on work done by women and men during ancient times were not available. Gradually when statistical theory was developed, necessity to record statistics on work was realized. United Nations initially developed the concepts and definitions of work in order to help the individual countries to conduct labour force surveys. Subsequently, it was realized that economic valuation of all production and services of a country was necessary in order to monitor the development of the country. For this purpose United Nations developed a handbook called System of National Accounts (SNA). This system defines economic activities, which is used by countries to estimate their National Accounts. Unpaid work such as subsistence agricultural work, home based industries etc. are considered as economic activities by SNA while household work such as cooking, cleaning, washing, nursing and

educating children, looking after young children and elders etc. were totally excluded. These activities therefore are not measured in terms of labour hours or economic valuation. Therefore it is later understood that women's full participation towards a country's economy and development is not fully shown, in the existing national accounts.

Unpaid work which is defined as economic work under SNA are subsistence farming, which includes transplanting, weeding, harvesting etc., cultivation of home garden, livestock rearing, household based industries, etc. Though the definition covers these activities as economic activities and persons engaged in these activities are to be classified as 'employed', in practice this happens only partially. Due to the complexity of the way these are carried out and due to other reasons, this picture is not fully depicted in a country's labour statistics. The activities which belong to the informal sector, which do not have a proper operating place, carried out intermittently with other house keeping work, not recognized as economic work by the operators themselves, were rarely identified as economic work both by the respondents as well as by data collection officers. Therefore the employment data available on unpaid economic work lack the desirable standards of accuracy. The complexity is even more pronounced when economic and social phenomena are closely interrelated.

The demand and concern for quantitative information on the participation of women in paid and unpaid work and specifically their contribution to development of the country increased during the past two decades. At the world conferences on women in 1975 (Mexico City), in 1985 (Nairobi) and in 1995 (Beijing), emphasis was placed on the "unremunerated contributions of women to agriculture, food production, reproduction and household activities". These conferences recommended that "efforts should be made to measure and reflect these contributions in national accounts and economics statistics". (United Nations, 1986, Paragraph 120). Elson (1996) has illustrated the importance of generating National Accounts, which include women's contribution to the economy through subsistence production, employment in the informal sector and domestic or reproductive work.

Canada is one of the first countries to make statistical efforts to value unpaid work. Since 1970's statistics Canada has developed estimates of the value of non-market activities. As the first practical application, 1996 census integrated questions on time use into its general questionnaire. France utilized the time use patterns of women at different age brackets to predict the availability of skilled workers in the future (Waring, 1996). Some other developed countries such as Australia, Japan have already produced labour time inputs for paid and unpaid work using time use surveys. They also have attempted to measure the monetary value of these using various methods, which have been developed and documented by those countries as well as international institutions such as ILO. These countries work out monetary valuation of unpaid work separately from the System of National Accounts. Such valuations have been compared with Gross Domestic Product (GDP).

In Sri Lanka this area is hardly researched. Limited research is available on time use data using a few case studies. But none of these researchers have attempted economic valuation of unpaid work using time use data. Therefore in this study, an attempt is made firstly to identify all unpaid activities done by women and men, and average hours they spent on each activity and use these information in valuing unpaid work using three different valuation methods. This study was done as a case study. Results derived from this study will throw very valuable insights to the global problem of measuring women's work. More over this will generate a method of valuing women's unpaid work, which can be used for a large Time-use survey data set, which will represent the entire country.

Time use survey – Methodology

Time budgets or time use studies provide a unique source of information on the participation of women and men in paid and unpaid work. In time budget studies, whether one is performing productive activities is not decided on the basis of one or two questions about primary or secondary activity, but derived from a detailed activity list. This method overcomes any cultural pre

conception that women are engaged only in house keeping activities. Time use data representing the entire country is not generally available in official statistics in a majority of developing countries, as in the case of Sri Lanka.

This section discusses about the methodology used in doing this research. A primary data collection has been done from households in two villages located in Horana Divisional Secretarial Division. These two villages had 385 and 247 housing units. The available resources and the time, limited the total sample of housing units selected in the study to be 158. It was decided to select a systematic sample of 86 housing units from Kannanwila village and 72 housing units from Wavulugala Janapadaya.

Questionnaire

A questionnaire was developed to collect the required information. This consisted of 4 sections. Section 1 of the questionnaire was the identification information. Section 2 would record all names of the persons who usually live in that household together with their basic demographic variables such as age, sex, relationship to head of household, level of education, marital status etc. Next section of the questionnaire included general labour force questions. These questions were directly taken from the Quarterly Labour Force Survey (QLFS) questionnaire, conducted by the Department of Census and Statistics. These were the questions, which determine one's labour force status, i.e. whether she/ he is employed, unemployed or economically not active. Section 4 collects information on occupation/ work done, whether work place is situated at home or elsewhere etc. Section 5 is the most important section of this questionnaire, which was designed to collect all the work done by a person within 24 hours of a day. In other words how one utilizes his/ her 24 hours time period within a day. This information was repeatedly asked for 3 days, i.e. 2 week days and one day of the week end from each of those adults. At the end, local market value for each of these work was also collected.

Time allocation of total work

The first step of this study is to find out as accurately as possible, how adult women and men (18 years or more) spend their 24 hour period in an average day.

TOWARDS A DEFINITION OF WORK

Work “refers to the participation of individuals in productive activities for which they either receive remuneration (in cash or in kind) for their participation or are unpaid because they are contributors to a family business enterprise.

It also includes subsistence production of goods for their own households and non-economic activities such as domestic work, family and elder care, construction or repair of owner occupied buildings, and volunteer work for which individuals receive no remuneration.”

The World’s Women 2000, United Nations, 2000, p. 109

Table 1 – Average time spent by adult women and men in different activities in a day

Activity	Women			Men		
	Weekday (hours)	Saturday/ Sunday (hours)	Average day of the week	Weekday (hours)	Saturday/ Sunday (hours)	Average day of the week
Paid work	1.29	1.04	1.24	8.04	6.04	7.53
Unpaid work	9.38	9.09	9.23	2.58	3.27	2.66
Personal	2.51	2.32	2.48	2.47	2.58	2.52
Leisure	9.79	9.93	9.85	9.88	10.78	10.16
Other	1.03	1.62	1.20	1.02	1.33	1.13
Total	24.00	24.00	24.00	24.00	24.00	24.00

The above table shows that, in a weekday on the average women in these 2 villages work (both paid and unpaid) 10.67 hours while men work 10.62 hours. In a weekend the corresponding numbers are 10.13 and 9.31 hours respectively for women and men.

Paid Work

In an average day of a week women work only 1.24 hours on paid work while men work 7.53 hours. This includes the traveling time from home to work place and back. This paid work can be permanent or casual and on monthly, weekly or daily basis. Most of them have to go out of house to do this type of work. Therefore this indicates that more women do not want to or can not afford to go out of house to do paid work because of their other household responsibilities such as childcare, etc.

Unpaid Work

Unpaid work can be divided into two major parts in terms of economic valuations. These are

- (1) activities those are counted as economic work under System of National Accounts (SNA),

Unpaid economic work

subsistence production of goods for their own households (agricultural work, home based industries etc.)

Unpaid non-economic work

domestic work, family and elder care, construction or repair of owner occupied buildings, and volunteer work for which individuals receive no remuneration.

The System of National Accounts:

Work and production boundaries and how it affects labour force statistics

- Work that falls within the SNA production boundary is considered economic in labour force statistics and the person engaged only in such activities is recorded as economically active.
- Work that falls outside the SNA production boundary is considered non-economic in labour force statistics, and the person engaged only in such activities is not recorded as economically active.

The World's Women 2000, United Nations, p. 134

- (2) activities which are not yet considered as economic work under (SNA) such as

House keeping activities

Elderly care

Child care

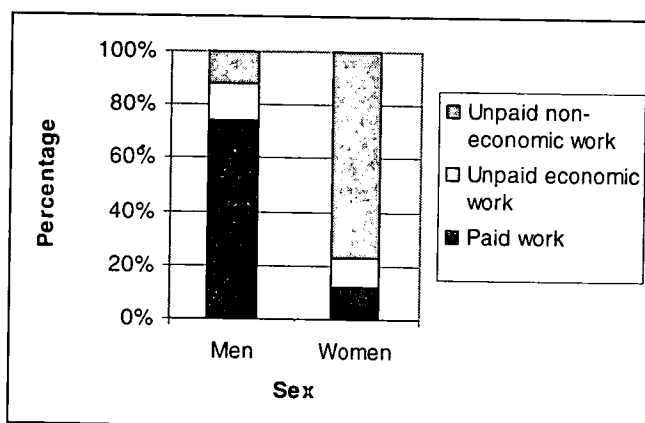
Children's education

Following table shows how women and men are engaged in unpaid work in an average day.

Table 2 – Hours spent on unpaid economic and non-economic work per day by sex

Unpaid Work	Hours worked per day			
	Women	%	Men	%
Unpaid economic work	1.15	12.3	1.42	51.1
Unpaid non-economic work	8.08	87.7	1.24	48.9
Total Unpaid work	9.23	100.0	2.66	100.0

Chart 1: Hours spent on paid and unpaid (economic and non-economic) work per day by sex



On an average day women work 9.23 hours on unpaid basis, while men's component of unpaid work is only 2.66 hours.

Unpaid economic work

Out of women's unpaid work only 12.3 percent are considered as economic activities under the present System of National Accounts (SNA). This share for men is much higher which is 51.1.

Table 3 – Hours spent per day on unpaid economic work by type of activity

Unpaid economic work	Time spent (hours) per day			
	Women	%	Men	%
Agriculture	0.32	27.8	0.56	39.5
Livestock rearing	0.15	12.7	0.25	17.6
Gathering forestry products	0.05	11.3	0.03	2.1
Manufacturing	0.28	21.7	0.13	9.2
Food Processing	0.15	11.3	0.11	7.7
Construction	0.20	15.6	0.34	23.9
Total economic activities	1.15	100.0	1.42	100.0

Among the unpaid economic activities Agriculture (28 percent) and manufacturing (25 percent) are the most prominent activities in the case of women. Equal share (13 percent) of their unpaid economic activity time is spent on food processing and livestock rearing as well. Time distribution for unpaid economic activities among men shows a slightly different picture. They spent more time (39.4 percent) on Agriculture and Construction (23.9 percent).

Unpaid non- economic work

87.7 percent of women's unpaid work is not considered as economic activities according to the present system of economic classification. This share for men is only 48.9.

Table 4 – Time spent on unpaid non-economic work by type of activity and sex

Unpaid non-economic work	Hours worked per day			
	Women	%	Men	%
House keeping activities	6.76	82.9	1.01	74.3
Elderly care	0.10	1.2	0.08	5.9
Child care	0.73	9.0	0.12	8.8
Children education	0.56	6.9	0.15	11.0
Total non-economic work	8.08	100.0	1.24	100.0

Distribution of those activities for women shows that, housekeeping is the largest component percentage share being 83. The second highest component is childcare (9.0 percent). Women spent 6.7 percent of their total unpaid non-economic activities time on children's education as well.

Comparison with International data

Time use survey done in Korea in 1995 (Kim, T.1997) reveled that men worked on an average of 6.76 hours during a weekday while the work time of women was 7.29 hours. This study also reveals that the proportion of household work time to total work time decreased over time.

A similar study done in rural Bangladesh (Hamid, S, 1997) revealed that on the average rural men spent 5.97 hours on work while rural women spent 7.57 hours on work. Men spent 5.39 hours on market work and 0.58 hours on non-market work. In contrast women spent 2.0 hours on market work and 5.57 hours on non-market work.

Time – use survey done in Japan revealed (Oda, K; Sato, S, 1997) that in 1991 on the average, Japanese men worked 5.76 hours in paid work and 0.50 hours in unpaid work per day. These hours for women were 2.98 hours in paid work and 3.95 hours in unpaid work.

Table 5 - Hours spent (per day) on paid and unpaid work

(Hours)

	Japan	U.S.A.	*Canada	Australia	U.K.	Finland
Survey date	1991	1985	1992	1992	1985	1987,88
Male						
Paid work	5.76	4.31	-	4.29	4.39	4.21
Unpaid work	0.50	2.37	2.17	2.54	2.19	2.29
Total (paid work + unpaid work)	6.26	6.68	-	6.83	6.58	6.50
Female						
Paid work	2.98	2.47	-	2.06	2.34	2.46
Unpaid work	3.95	4.46	4.04	5.17	4.38	4.22
Total (paid work + unpaid work)	6.93	6.93	-	7.23	6.72	6.68

Source: * Household's unpaid work measurement and valuation

Others - occasional paper (UNDP)

Table 5 - Contd.

	*Korea (1995)		+Bangladesh (1991/92)		++ Indonesia (1980)		** Sri Lanka (1998)	
	Female	Male	Female	Male	Female	Male	Female	Male
SNA activities (Paid work Unpaid economic work)	4.37	6.98	2.00	5.39	3.50	6.71	2.39	8.95
Non-SNA activities (Unpaid non-economic work)	3.12	0.28	5.59	1.13	5.80	1.03	8.08	1.24
Total (Paid work + Unpaid work)	7.49	7.26	7.59	6.52	9.30	7.74	10.47	10.19

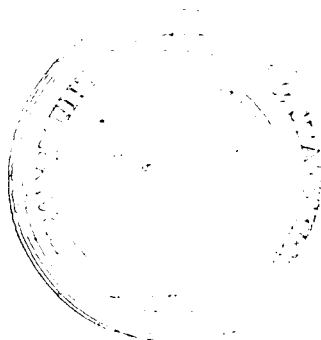
Source:

* Korea national tourism corporation, 1995

+ Women's work and the system of the National accounts survey (rural) -
1991/92

++ Based on survey in rural Pekalongan 1981

** Based on Time-Use Survey (case study), 1998



Evaluating unpaid work

Before starting the discussion on what methodologies used for evaluating unpaid work let us examine the definitions used in this chapter for this purpose.

- Work
- Any activity that can be delegated to a paid worker
 - = Paid work + unpaid economic work + unpaid non-economic work
- Economic work
- Work or activity defines as economic under SNA
- Paid work
- All paid economic work
- Unpaid work
- Unpaid economic work + unpaid non-economic work
- Unpaid economic work or subsistence work
- Working in the farm or agriculture enterprise owned by one of household members/ doing home based non-agricultural work such as mat weaving, coir work, food processing etc.
- Unpaid non-economic work or household work
- Cooking, cleaning and maintenance of house, washing, mending cloths, taking care of children, taking care of sick and elderly, teaching supervising children's school work, taking them to classes etc.

Since the physical outputs of the unpaid work are not sold, there is no price associated with these activities. However, it is extremely necessary to express the value of these in monetary terms so that it enables to compare the imputed value of various unpaid work done by household members with national account aggregates. The monetary valuations going to be derived in this study are input based. This will first determine the labour input and obtain the value of household production based on cost of inputs. Therefore the value of unpaid labour is obtained by imputing a market wage to the hours spent on unpaid work. Market wages will be used in three different ways.

- Market wage – generalist approach
- Market wage – specialist approach
- Opportunity Cost Method

Following table gives the time use of men and women on paid and unpaid work, which was derived from Time-Use survey case study.

Table 6 – Time spent on all unpaid work (per day) by women and men

Unpaid work	Time spent (hours)	
	Women	Men
Unpaid economic work (SNA activities)		
Total	1.15	1.42
Agriculture	0.32	0.56
Livestock rearing	0.15	0.25
Gathering forestry products	0.05	0.03
Manufacturing	0.28	0.13
Food processing	0.15	0.11
Construction	0.20	0.34
Unpaid non-economic work (Non-SNA activities)		
Total	8.08	1.24
Cooking	3.88	0.23
Cleaning	1.43	0.12
Laundry	0.61	0.05
Collecting firewood	0.14	0.02
Collecting water	0.07	0.02
Shopping/ Marketing	0.36	0.28
Other domestic	0.09	0.07
Elderly care and nursing	0.22	0.18
Child care	0.73	0.12
Children's education	0.55	0.15
Total hours spent on unpaid work	9.23	2.66

Class Number	339.31
Accession Number	14898.

1. Market value – Generalist approach

This method performs valuation by using the wages of workers who could perform all these activities within the household by a substitute household worker. Wage used here are based on the wages of household servants or locally available person, who could perform the same task. A problem pointed with regard to this method is that servants do not perform all unpaid work in the household and that this method may not be appropriate for assessing some work. Assigning of domestic servant's wages to housewives services is debated by several authors (Goldschmidt, L; Clermont, 1987). They argued that level of responsibility of housewives in performing these activities are higher than of domestic servants. They questioned as to how social and personal aspect of some domestic activities such as maternal care etc. is captured by purely on economic terms. Anyhow, in this study we try to capture only economic contribution and the latter concern is out of scope. Wage rates were obtained from the respondents themselves at the time of data collection and averaged out over all respondents to get the average rate for each activity which are tabulated below.

Table 7 – Hourly rate to be paid for a domestic helper for each activity – 1998

Unpaid work	Rate per hour (Rs)	
	Women	Men
Economic work		
Agriculture	17	22
Livestock rearing	14	22
Gathering forestry products	17	24
Manufacturing	17	24
Food processing	17	26
Construction	29	31
Non-economic work		
Cooking	14	20
Cleaning	14	19
Laundry	14	21
Collecting firewood	11	-
Collecting water	14	-
Shopping/ Marketing	14	19
Elderly care and nursing	14	24
Other domestic	14	-
Child care	14	-
Children's education	24	28

Source: Case study done in 2 villages

These wage rates clearly show that wage of domestic servant depends on the type of activity (economic and non-economic) and sex of the person. If a domestic female servant is hired to do domestic non-economic work, hourly rate or wage is more or less the same except for educating children, which requires specialized skill. Wage of unpaid economic work are always higher compared with non-economic work. This difference is more for females than males. The reason for this may be that non-economic work considered to be a female job. Amongst the economic work, wage for construction seems to be the highest for both sexes. Wage rate for children's education and construction were the highest because these activities are needed certain skills, which could

not be performed by any local person. Collecting firewood, which is regarded as predominantly female activity by the society has the lowest value. Hiring a male domestic servant to do unpaid household work is non-existence or very rare in this community as well as in Sri Lanka. As such informal wages of a male worker in a local institution supplying this service have to be obtained. Comparison of wage rates of other countries which used this method shows that wages for domestic workers are amongst the lowest. Skills required by a domestic servant can be acquired at home.

In this study it was found that female/ male wages rate is lowest (0.60) for nursing and elderly care and highest (0.75) for cleaning/ shopping/ marketing among unpaid non-economic work. In the case of unpaid economic work it was lowest for food processing (0.64) and highest for agricultural work (0.78).

A similar study done in Bangladesh (Hamid, S, 1997) has shown a similar pattern with regard to the wage rate differentials for males and females. She says informal wages for house repair were the highest because of the certain degree of market oriented skills needed for this activity. She also says that water collection has the least because this activity regarded no special skills and could be performed by almost anyone. In her study she found that the rates of female/ male wage rate was 0.50 in the informal sector, 0.60 in the non-agricultural sector and 0.66 in the agricultural sector. Informal wage rates in their study was found to be 80 percent of formal wage rates in both agriculture and non-agriculture sectors.

Wages of substitute household workers were used in several studies done in Nepal, 1980 (Acharya and Bennett, 1981 and 1983), Pakistan, 1975 – 76 (Alauddin, 1980) Chile, 1983 (Martinez Espinoza, 1983) Venezuela, 1982 (Valecillos et al., 1983) and Lebanon, 1980 (Lorfing and Khalaf, 1985). Pakistan, Chile and Venezuela studies covered only urban households and used wages of substitutes for the valuation of domestic activities. However without taking straightforward wages (polyvalent substitute's wages), they have combined wages of polyvalent and specialized substitutes with wages

paid in the market enterprises for activities which were similar to those performed by housewives.

Nepal and Lebanon studies dealt with only rural households. Since there was no market in rural areas for such domestic activities, they found it difficult to establish a realistic wage for those. In Lebanon, Lorfing and Khalaf used the wages of agricultural workers while in Nepal Acharya and Bennett used the wages of substitutes only for evaluation of construction activities.

The values given in Table 7 for each activity is multiplied by the hours worked tabulated in Table 6 in order to arrive at an economic value per day for that activity. Values thus obtained adjusted for one month for both men and women are tabulated below.

Table 8 – Value of unpaid work done by women and men using generalist approach

Unpaid work	Value per month (Rs.)	
	Women	Men
Unpaid economic work	645	1005
Agriculture	163	363
Livestock rearing	63	158
Gathering forestry products	26	14
Manufacturing	143	94
Food processing	77	78
Construction	174	298
Unpaid non-economic work	3546	574
Cooking	1630	138
Cleaning	601	68
Laundry	256	32
Collecting firewood	46	0
Collecting water	29	0
Shopping/ Marketing	151	160
Elderly care and nursing	38	50
Other domestic	92	0
Child care	307	0
Children's education	396	126
Total	4191	1579

It is revealed from the above table that on the average the value of unpaid work done by women in these two villages were Rs. 4191 per month as compared with Rs. 1579 for men. Breakdown of total unpaid work into unpaid economic work and unpaid non-economic work in monetary terms valued to Rs. 645 and Rs. 3546 respectively for women. Corresponding values for men were calculated to be Rs. 1005 and Rs. 574 respectively.

2. Market value – Specialist approach

In this approach each activity or work is valued at a price, which have to be paid to persons who are specialized in performing those tasks (activities) in the society. This valuation method evaluate household's unpaid work by matching it with the wage of professionals for that activity. However, there is a disparity in productivity between households and professionals due to differences in economics of scale and in the capital equipment ratio. These differences were not taken into account and salaries paid to different occupations were used. But since it is difficult to set uniform standards for selecting occupations that provide similar services as household's unpaid work, unpaid work was matched within the scope of availability of such occupation statistics.

Table 9 – Occupations matched with unpaid work

Type of activity (unpaid work)	Corresponding occupation
Cooking/ serving	Restaurant cook
Washing	Laundry man
Shopping/ marketing	
Nursing/ elderly care	Nurse assistant
Child care	Day care teacher
Children's education	Primary school teacher
Agriculture work	Agriculture labour

Since there were no occupations corresponding to collection of firewood and water, average wage of a general labourer was used for those. International Standards of Occupational Classification (ISOC) was used in Labour Force Survey of Sri Lanka. Due to the limitation of overall sample size certain occupations which are not in common would have been under represented in the Labour Force Survey. If number of cases were small in a particular occupation that was combined with similar occupation in that group to derive the corresponding occupation and also calculating the wage rate. A study done in Japan (Oda, K; Sato, S. 1997) has used similar corresponding occupations



and average wages for men and women of those occupations were derived from their basic survey of the Ministry of Labour.

Based on monthly salaries of these corresponding occupations, derived from the Quarterly Labour Force Survey, which were matched to unpaid work, rate per hour was calculated and shown below.

Table 10 – Wage rates derived from specialist approach by activity – 1998

Unpaid work	Rate per hour (Rs.)	
	Women	Men
Unpaid economic work		
Agriculture	18	22
Livestock rearing	18	22
Gathering forestry products	17	26
Manufacturing	20	25
Food processing	19	22
Construction	24	26
Unpaid non-economic work		
Cooking	18	25
Cleaning	16	24
Laundry	16	23
Collecting firewood	14	21
Collecting water	14	21
Shopping/ Marketing	14	23
Elderly care and nursing	30	32
Other domestic	15	23
Child care	14	20
Children's education	34	36

Source: Quarterly Labour Force Survey (1998)

Department of Census and Statistics

Since Labour Force Survey covers persons employed in formal sector as well as informal sector wage rates given above are a combination of both. For example chef who works in (organized) formal sector is paid much higher

salary than a cook in an informal eating place or restaurant where both perform the same activity. Both are specialized in that trade but degree of specialization is very much different.

Hourly rate obtained from Table 10 for each work is multiplied by the number of hours spent on that activity from Table 6 to derive a price for unpaid work per hour. These values calculated separately for women and men, per month are given in the table below.

Table 11 – Value of unpaid work done by women and men using specialist approach

Type of work	Value (in Rs.) per month	
	Women	Men
Unpaid economic work	677	950
Agriculture	173	363
Livestock rearing	81	158
Gathering forestry products	26	16
Manufacturing	168	98
Food processing	86	66
Construction	144	250
Unpaid non-economic work	4361	937
Cooking	2095	173
Cleaning	686	86
Laundry	293	35
Collecting firewood	59	13
Collecting water	29	13
Shopping/ Marketing	151	193
Other domestic	81	67
Elderly care and nursing	99	124
Child care	307	72
Children's education	561	162
Total hours spent on unpaid work	5038	1887

Source: Time Use Survey – 1998

Dommen, E. (1974) recommends that in output related evaluations, wages of workers performing comparable work (requiring similar level of skills) be used as an alternative for activities where the market price cannot be satisfactorily determined.

Validity of this evaluation method was discussed by Lussella Goldschmidt and Claremont (1979). In industrialized economics, they say it is not so valid because it disregards important differences in the circumstances in which households and market enterprises operate. Households furnish small scale personalized services, they have low overhead and distribution costs and their productive activities are determined, practically by non-economic considerations such as social roles, personal tasks etc. On the other hand market enterprises operate according to the economic considerations in order to maximize their profits. Their investments in labour saving, capital equipments are high.

In contrast to this, in developing countries where modern sector employment opportunities are limited, the situation is different. Service enterprises usually operate in the informal sector and they use equipment similar to that used in households, labour productivity is also close to that of the household. Since labour supply is large, workers wages remain close to those of domestic servants. Therefore it appears preferable to use this method in developing countries where informal market sector is fairly large.

3. Opportunity cost method

In the opportunity cost method, labour inputs put into domestic activities are assigned an imputed value, which is the wage of she/ he should have earned if she/he had worked in the market paid job. The approach used here is to evaluate women's and men's activities in their own houses based on what the same person would have earned in her/ his non-domestic occupation. For example an hour of domestic activity of a school teacher would be priced at the same amount as teachers normally would earn in an hour teaching to

children. In a way this is a hypothetical substitution of an unpaid work by a wage worker. This raises more problems in developing countries than developed countries. In developing countries where employment opportunities are not widely available, one could argue that whether she/ he could be able to find some employment even if she/he is not engaged in such domestic activities. If a person is engaged in paid employment while engaged in domestic activities, it is easier to find opportunity cost because she/he already has a wage. But if the person is on full time domestic activities, there is no observable market wage and situation will be more difficult. To solve this problem, Goldschmidt, L; (1979) suggest to use the wages of workers with similar characteristics (sex, age, education etc.). This method is desired from economic research on consumer behaviour and time allocation (Becker, 1965, Lancaster, 1966 and followers of the "New Home Economics" school of thought). These are constructed on the assumption that households allocate time so as to maximize returns. As a result, it is assumed that if a household member performs housework in the household rather than doing paid work, it is because over all return expected from unpaid household work are seen as equal or higher than those from paid work.

In this approach, value assigned to domestic work, which is unpaid, varies according to the average income (from her paid work) of the person who performs it. The disadvantage in this method is because the same type of domestic work is valued differently depending on who does it. On the other hand it shows that the circumstance where a person with high income will price her unpaid work higher than a person with lower average income. However it has its own limitations because it can not be assured always that opportunities for additional work is always available specially in developing countries like Sri Lanka. Another weak point in this approach is it cannot be applied to those who do not have any other occupation in addition to work in their home. It is therefore going to be a hypothetical substitution of an unpaid worker by a wage worker.

A study done in Chile, 1981 (Pardo, 1983, Pardo and Cruz, 1983) using opportunity cost approach has not used the "pure" opportunity cost. For

employed housewives they have not used the actual wages they earn in the market. Instead they have used average wage in their occupation. For other housewives (unemployed or others) they have used the average wage of all employed females. A study done in Mexico 1977 – 78 (Pedrero Netio, 1983) have used a slightly different method. He has used average wages of females with same level of educational as the housewives under consideration as I have done in my study.

In this study wages of a person with similar level of education is used. An average employee earnings derived from Quarterly Labour Force Survey by level of education for both women and men was calculated as shown below.

Table 12 – Average earnings (per hour) by level of education and sex

Level of education	Average earnings per hour (Rs.)	
	Women	Men
All groups	22	27
No schooling	12	16
Year 1 – 5	13	19
Year 6 – 10	16	23
GCE (O/L)	27	33
GCE (A/L)	33	42

Source: Quarterly Labour Force Survey – 1998

Department of Census and Statistics

This reveals that a woman who has passed GCE (A/L) could have earned Rs.33 per hour if she could use her time spent on unpaid work on paid work which comply with her level of education. In other words one hour spent by her on unpaid work could be valued at Rs.33. This will be the opportunity cost for that person and does not vary from activity to activity. Unpaid work done by women and men from the time use study by level of education are shown below.

Table 13 – Time spent on unpaid work by level of education and sex

Level of education	Average time spent on unpaid work per day (hour)					
	Women			Men		
	Total	Unpaid eco. work	Unpaid non-eco. work	Total	Unpaid eco. work	Unpaid non-eco. work
No schooling	6.91	2.20	4.71	-	-	-
Year 1 – 5	8.95	1.34	7.61	3.36	2.02	1.34
Year 6 – 10	9.03	0.92	8.11	2.28	1.06	1.22
GCE (O/L)	9.87	0.84	9.03	3.30	1.91	1.39
GCE (A/L) & above	9.32	0.63	8.69	1.63	0.46	1.17
Total	9.23	1.01	8.22	2.63	1.36	1.27

Average time spent (Table 13) multiplied by earnings per hour (Table 12) for a particular level of education will be the estimated value of unpaid work per day. Monthly value of unpaid work is calculated based on this and is presented below.

Table 14 – Value of unpaid work done by women and men using opportunity cost approach

Level of education	Value of unpaid work per month (Rs.)					
	Women			Men		
	Total	Unpaid eco. work	Unpaid non- eco. work	Total	Unpaid eco. work	Unpaid non- eco. work
No schooling	2488	792	1696	-	-	-
Year 1 – 5	3491	523	2968	1915	1151	764
Year 6 – 10	4334	442	3893	1573	731	842
GCE (O/L)	7995	680	7314	3267	1891	1376
GCE (A/L) & above	9227	624	8603	2054	580	1474

Perdrero Neito estimated housewives of Mexico City produced an estimated income equivalent to two times (193%) of the income produced by the women in labour force of that city.

In a Philippine study opportunity cost has been derived in a different way. They have used the wage rates of employed household members (parents and children) for defining the opportunity cost of time of all the household members. On this basis it was found out that in Laguna rural households the domestic work father, mother and children generated an income in kind equivalent to their cash income from paid employment (Evenson, R., 1975 – 76).

Comparison of value of unpaid work using different approaches

The volume of inputs is the significant element in these evaluations. All three approaches used the labour time input, but valued using three different approaches. In opportunity cost approach, wage rate does not vary from activity to activity. Therefore for comparison of wage rates, opportunity cost approach was not shown below.

Table 15 – Wage rate per hour for two approaches

Unpaid work	Market value – Generalist approach		Market value – Specialist approach	
	Women (Rs)	Men (Rs)	Women (Rs)	Men (Rs)
Economic work				
Agriculture	17	22	18	22
Livestock rearing	14	22	18	22
Gathering forestry products	17	24	17	26
Manufacturing	17	24	20	25
Food processing	17	26	19	22
Construction	29	31	24	26
Non-economic work				
Cooking	14	20	18	25
Cleaning	14	19	16	24
Laundry	14	21	16	23
Collecting firewood	11	-	14	21
Collecting water	14	-	14	21
Shopping/ Marketing	14	19	14	23
Elderly care and nursing	14	24	30	32
Other domestic	14	-	15	23
Child care	14	-	14	20
Children's education	24	28	34	36

With respect to the wage rates, market value – specialist approach always, gives a higher wage rate than market value – generalist approach for non-economic activities, for both women and men. But the rate of increase is higher for men than women. In the case of unpaid economic activities, wage rates of specialist approach is slightly higher than that of generalist approach but the difference is not as significant as in the case of non-economic activities, for both women and men.

Similar comparison made in rural Bangladesh (Hamid, S., 1997) states that informal wages are always higher than the wages from opportunity cost method. She says, the option to use opportunity cost as an equivalent wage rate was examined for applicability in rural Bangladesh and it was found that the concept of opportunity cost in the rural areas is vague. Informal wage rates in their turn were found to be 80 percent of formal wage rates in both agricultural and non-agricultural sectors.

Comparison of values assigned to unpaid work on the basis of per person per month for women and men using two approaches are given in Table 16.

Table 16 – Comparison of assessed value of unpaid work based on two approaches – 1998

Unpaid work	Value of unpaid work per person per month (Rs)			
	Market value – Generalist approach		Market value – Specialist approach	
	Women	Men	Women	Men
Unpaid economic work	645	1005	677	950
Agriculture	163	363	173	363
Livestock rearing	63	158	81	158
Gathering forestry products	26	14	26	16
Manufacturing	143	94	168	98
Food processing	77	78	86	66
Construction	174	298	144	250
Unpaid non-economic work	3546	574	4361	937
Cooking	1630	138	2095	173
Cleaning	601	68	686	86
Laundry	256	32	293	35
Collecting firewood	46	-	59	13
Collecting water	29	-	29	13
Shopping/ Marketing	151	160	151	193
Elderly care and nursing	38	50	81	67
Other domestic	92	-	99	124
Child care	307	-	307	72
Children's education	396	126	561	162
Total	4191	1579	5038	1887

Estimated value of unpaid work done by women per month using 2 approaches were Rs.4191 and Rs.5038. These values for men were Rs.1579 and Rs.1887.

Table 17 - Method of valuation used by different countries

Country	Method of valuation used (value of labour input)					
	Wages of substitute household worker (generalist approach)		Wages of professional worker (specialist approach)		Opportunity cost method	
	Year	Author	Year	Author	Year	Author
Asia						
Lebanon	1980	Lorfin and Khalaf, 1985				
Nepal	1980	Acharya and Bennett, 1981 and 1983				
Pakistan	1975-76	Alauddin, 1980				
Philippine	1975-77	Evenson, Popkin and King-Quizon, 1980			1975-77	Evenson, Popkin and King-Quizon, 1980; King, 1978; King and Evenson, 1983; Ybanez-Gonzalo and Evenson, 1978
Malaysia					1976-77	Kusnic and Davanzo, 1980

Table 17 – contd.

Country	Method of valuation used (value of labour input)					
	Wages of substitute household worker (generalist approach)		Wages of professional worker (specialist approach)		Opportunity cost method	
	Year	Author	Year	Author	Year	Author
Latin America						
Chile			1981	Pardo, 1983; Pardo and Cruz, 1983	1981	Pardo, 1983; Pardo and Cruz, 1983
Chile	1983	Martinez Espinoza, 1983	1983	Martinez Espinoza, 1983	1983	Martinez Espinoza, 1983
Mexico	1970	Rendon, 1979				
Mexico	1970, 1977-78	Pedrero Nieto, 1983			1970, 1977-78	Pedrero Nieto, 1983
Venezuela	1982	Valecillos et al., 1983	1982	Valecillos et al., 1983	1982	Valecillos et al., 1983
Dommen			1974			

Value of unpaid work as a percentage of GDP

Theoretically all unpaid economic activities should have been included under conventional GDP, although in practice there are evidences that not all such economic activities are captured and hence not included under SNA. To avoid double counting of unpaid economic activities which are already (though

practically in practice) supposed to have been counted in conventional GDP, **this study therefore took into account only unpaid non-economic activities which are surely left out from conventional GDP estimates.** It is beyond this study to evaluate the underestimates of unpaid economic activities already counted in conventional GDP estimate.

The study found that women in those two villages spend nearly 8.22 hours daily on housework (unpaid non-economic activities) and about another 1.01 hour on subsistence production (unpaid economic activities). Hours spend by men for these categories were 1.27 hours and 1.36 hours respectively. In order to make an annual estimate of unpaid non-economic work, the following assumptions have to be made.

Average monthly values of unpaid economic activities and unpaid non-economic activities done by women and men aged 18 years and over estimated from this case study were used in estimating the total annual value of unpaid work. The underlying assumption here is that all men and women 18 years and over do the same hours of unpaid work as done by men and women in these two villages. Work done by less than 18 years old men and women are excluded in the estimate. Women and men who are 18 years and above (in 1998) were obtained from Quarterly Labour Force Survey.

Based on these assumptions, it was calculated using generalist approach of valuation, that unpaid non-economic activities done by +women generate Rs.219,287 (millions) annually. While unpaid economic activities generate Rs.39,887 (millions) annually. These components for *men estimated to be Rs.32,791 (millions) and Rs.57,413 (millions) respectively, which are given in Table 16.

+ Women 18 years and above estimated from Quarterly Labour Force Survey
= 5,153,395

* Men 18 years and above estimated from Quarterly Labour Force Survey
= 4,760,633

Table 18 – Assessed value of unpaid work and as a percentage of GDP – 1998

Million Rs.

	Market value – Generalist approach		Market value – Specialist approach	
	Women	Men	Women	Men
Assessed value of Unpaid economic work	39,887	57,413	41,866	54,271
As a % of GDP	3.9	5.7	4.1	5.4
Assessed value of Unpaid non-economic work	219,287	32,791	269,687	53,529
As a % of GDP	21.7	3.2	26.7	5.3
Cooking				
As a % of GDP	10.0	0.8	12.8	1.0
Cleaning				
As a % of GDP	3.7	0.4	4.2	0.5
Laundry				
As a % of GDP	1.6	0.2	1.8	0.2
Collecting firewood				
As a % of GDP	0.3	-	0.4	0.1
Collecting water				
As a % of GDP	0.2	-	0.2	0.1
Shopping/ Marketing				
As a % of GDP	0.9	0.9	0.9	1.1
Elderly care and nursing				
As a % of GDP	0.2	0.3	0.5	0.4
Other domestic				
As a % of GDP	0.6	-	0.6	0.7
Child care				
As a % of GDP	1.9	-	1.9	0.4
Children's education				
As a % of GDP	2.4	0.7	3.4	0.9

Value of GDP in 1998 – 1,011,349 (million Rs.)

Corresponding assessed values using specialist approach of valuation are also given in Table 18.

In Sri Lanka, according to this study value of unpaid economic work using generalist approach as a percentage of GDP was estimated to be 9.5 percent of which 3.9 percent was contributed by women and 5.6 percent was contributed by men. But when unpaid non-economic work is considered this contribution was 24.8 percent and the contributions made by women and men were 21.6 percent and 3.2 percent respectively. If the market value specialist approach was used these percentages were even higher 9.4 percent (4.1 percent from women and 5.3 percent from men) for unpaid economic work and 31.8 percent (26.6 from women and 5.2 from men) for unpaid non-economic work.

Out of non-economic work, highest contribution to GDP came from cooking (10.8 from generalist approach and 13.8 from specialist approach). Sex wise data shows that women's contribution from cooking was 10.0 percent while men's was only 0.8 according to generalist approach. Cleaning was the second highest contribution to GDP (4.1) of which 3.7 from women and 0.4 from men.

These percentages using opportunity cost approach was not calculated in this study, as this method was not seen as realistic and practical for our country, where educated unemployment rate is higher for both males and females and opportunities are limited to engaged in paid activities even if they are not engaged in unpaid activities.

A similar study done in Japan estimated the value of unpaid work as 14.6 percent of GDP using generalist approach and 18.3 percent using specialist approach as at 1991. (Oda, K; Sato, S; 1997). This also reveals that number of hours of unpaid work stands at about 50 percent of the number of hours of paid labour. Assessed value of unpaid work by sex reveals that women account for approximately 90 percent of the total value, in 1981 and it has decreased to 85.3 percent in 1991, which shows that percentage share of value of unpaid work for men is at a rising trend.

A comparison made across countries reveals that in Canada (household unpaid work; measurement and valuation, 1992), value of unpaid work as a percentage of GDP was estimated to be 54.2 percent using opportunity cost method and 43 percent using market value – specialist approach and 34 percent using market value – generalist approach in 1992. In Australia (occasional paper (UNDP) and household population in OCED countries 1992) in the same year these percentages were 69 percent, 52 percent and 54 percent respectively. Among developing countries a study done in Bangladesh estimated value of unpaid work as TK 187 billion which was estimated to be 23 percent of national income in 1989/ 90 (Hamid, S., 1997). Another important point raised by her is that own account primary production or unpaid economic activities, which is included in SNA production boundary by United Nations valued to be 1 percent of GDP, while housework or unpaid non-economic activities which lies completely outside the boundaries contributes 22 percent of GDP of that country.

A few more studies from developing countries reveals that in Venezuela (Valecillos et al; 1983), adults into domestic activities, in the ten largest cities, when expressed as a percentage of national income are evaluated at;

22 percent when based on wages of substitute household workers and average wages of females in service occupations;

32 percent when based on wages for equivalent market functions;

41 percent when based on average wages in their occupation for employed housewives and average wages of all female workers for housewives not in the labour force.

ILO publication No.14 on work and development says several quantitative observations can however be made about the value of unpaid labour inputs into domestic activities but general quantitative conclusions cannot be drawn. It says macro economic evaluations set the value of household labour inputs at a minimum of about 20 percent and at a maximum of about 50 percent of the national income.

It should be stated here that according to this study unpaid economic and non-economic work valued to be 34.3 percent according to generalist approach and 41.2 percent of GDP according to specialist approach, fell within this ILO limit, although this was based on certain assumptions when availability data was limited.

Table 19 – International comparison of value of unpaid work as a percentage of GDP

Assessed value of Unpaid work	Market value – Generalist approach			Market value – Specialist approach			Opportunity cost method		
	Total	Men	Women	Total	Men	Women	Total	Men	Women
Japan (1991)									
%	18.3	15.8	2.5						
+Canada (1990)									
%	34.0			43.0			54.2		
Australia (1992)									
%	54.0			52.0			69.0		
Bangladesh (1989/90) (TK billion)	1087								
%	23.0								
Venezuela (1983)									
%	22.0			32.0			41.0		
ILO									
%	34.3			41.2					
Sri Lanka (1998) (million Rs.)	349378	90204	259177	419353	107800	311553			
%	34.5	8.9	25.6	52.2	10.7	41.5			

Source:

+ Household unpaid work measurement and valuation - 1990

Other countries – Occasional paper (UNDP) and household production in OECD countries

Note: Unpaid work in Japan does not include house-maintenance, gardening and travel.

Disaggregation of conventional GDP by sex

All countries use SNA to evaluate national income estimates by industrial sectors such as manufacturing, construction, trade, utilities (electricity, gas, water etc.) transport, finance. An attempt has been made here to divide sectoral value added into female and male, based on sectoral labour force participation data and thereafter weighted to adjust it for gender wage differentials. At least most developing countries, it is not possible to make one-to-one identification between the production and the producer at national level. Therefore production of the sex of the person for item by item cannot be identified. Following methodology therefore used to divide the conventional GDP by sex of the person who produce it.

Let us take one sector, namely agricultural sector of the economy of the country.

Let

Number of females employed in agricultural sector in 1998	=	E_{fa}
Hours worked (per week) by employed females in agricultural sector in 1998	=	h_{fa}
Number of males employed in agricultural sector in 1998	=	E_{ma}
Hours worked (per week) by employed males in agricultural sector in 1998	=	h_{ma}
Average monthly salary of females in agricultural sector	=	S_{fa}
Average monthly salary of males in agricultural sector	=	S_{ma}

Labour hours put by employed females in agricultural sector in 1998 = $E_{fa} \times h_{fa}$

Labour hours put by employed males in agricultural sector in 1998 = $E_{ma} \times h_{ma}$

N_a is GDP from agriculture sector, in 1998 and N_{ma} is the contribution by males and N_{fa} is the contribution by females to GDP from agriculture sector

$$N_a = N_{ma} + N_{fa} \quad \text{_____} \quad 1$$

$$\frac{N_{ma}}{N_{fa}} = \frac{S_{ma} \times E_{ma} \times h_{ma}}{S_{fa} \times E_{fa} \times h_{fa}} \quad \text{_____} \quad 2$$

Using the following known factors from surveys and records, which are tabulated in Table 20, Table 21 and Table 22 we can solve equations 1 and 2.

$$N_a = \frac{E_{fa} \times h_{fa} \times S_{fa}}{E_{ma} \times h_{ma} \times S_{ma}}$$

**Table 20 – Average hours worked by employed men and women per week
by industrial sector – 1998**

Major industrial group	Hours per week	
	Female	Male
Agriculture etc.	30.8 (h_{fa})	36.3 (h_{ma})
Manufacturing	40.5	42.8
Construction	41.2	35.4
Trade & hotels etc.	41.0	46.3
Transport, storage & communication	45.4	46.4
Insurance & real estate	36.0	40.8
Personal services	38.8	43.7
Other	74.5	87.3

Source: Quarterly Labour Force Survey – 1998

Department of Census and Statistics

Table 21 – Employed persons (18 years and over) and GDP (at current prices) by industry – 1998

Industry	Employed persons in '000		GDP at current prices in million rupees* Total
	Female	Male	
Agriculture etc.	860 (E _{fa})	1392 (E _{ma})	175,375
Manufacturing	525	514	185,035
Construction	8	334	67,924
Trade & hotels etc.	186	606	260,087**
Transport, storage & communication	14	288	105,093
Insurance & real estate	33	96	70,449
Personal services	409	686	117,897
Other	8	88	29,489
Total	2045	4005	1,011,349

Note: 1. Percentage in each industrial category was obtained from Annual report of Sri Lanka Labour Force Survey – 2000

2. This percentage was multiplied by employed persons in 1998, obtained from Quarterly Labour Force Survey in order to get employed in 1998 by industry.
3. Import duties were added to GDP of trade and hotels etc.
4. Other category includes mining and quarrying and electricity, gas and water.

Wage rates for women and men by industrial sector, which was needed for this estimation was obtained from Quarterly Labour Force Survey. This survey collects monthly earnings from paid employees, which are shown in Table 22.

Table 22 – Monthly average earnings of paid employees by industrial sector – 1998

Industrial sector	Monthly average earnings (Rs)	
	Female	Male
Agriculture etc.	1739 (s_{fa})	2368 (s_{ma})
Manufacturing	2693	4001
Construction	3225	3527
Trade & hotels etc.	3958	4110
Transport, storage & communication	5854	4785
Insurance & real estate	6687	8527
Personal services	4549	4992
Other	2458	3312
Total	3196	4004

Source: Quarterly Labour Force Survey (all 4 quarters) – 1998

Using the information of Table 20, 21 and 22 and using the equation 1 and 2 we can disaggregate conventional GDP by sex. The results thus obtained for each industrial sector are tabulated below.

Table 23 – Conventional GDP at current market prices, disaggregated by sex – 1998

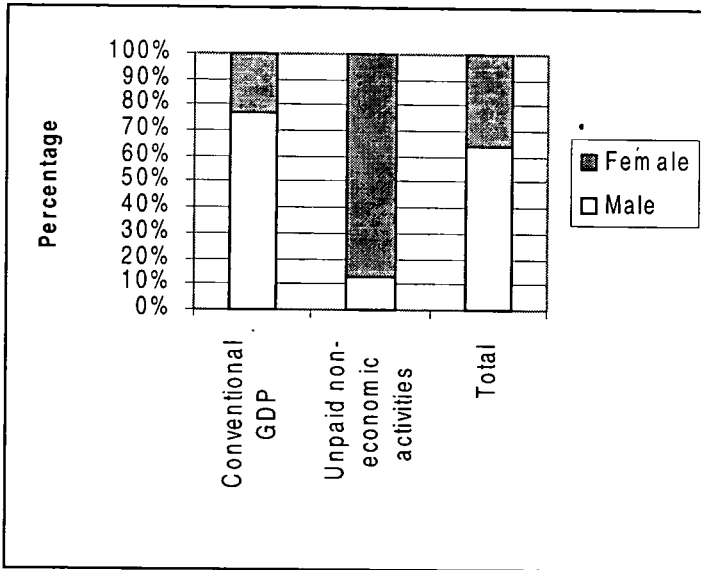
Industrial sector	GDP at current market prices in million rupees		
	Total	Female	Male
Agriculture etc.	175,375 100	48,756 27.8	126,619 72.2
Manufacturing	185,035 100	72,941 39.4	112,094 60.6
Construction	67,924 100	1,688 2.5	66,236 97.5
Trade & hotels etc.	260,087 100	53,951 20.7	206,136 79.3
Transport, storage & communication	105,093 100	5,779 5.5	99,314 94.5
Insurance & real estate	70,449 100	13,536 19.2	56,913 80.3
Personal services	117,897 100	38,361 32.5	79,536 67.5
Other	29,489 100	1,606 5.4	27,884 94.6
Total	1,011,349 100	236,618 23.4	774,731 76.6

Table 24 – Gender contributions to GDP and household maintenance satellite accounts – 1998
(In million rupees)

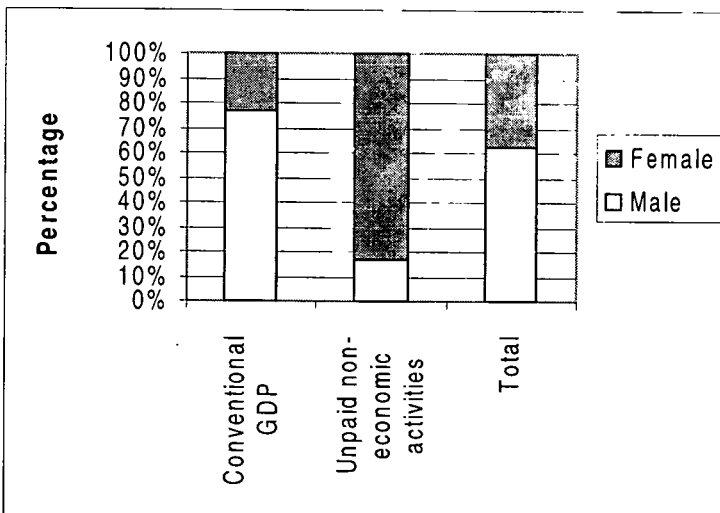
Sector	Generalist approach			Specialist approach		
	Total	Female	Male	Total	Female	Male
1. Conventional GDP	1,011,349	236,618	774,731	1,011,349	236,618	774,731
Percentage	100.0	23.4	76.6	100.0	23.4	76.6
Agriculture etc.	175,375	48,756	126,619	175,375	48,756	126,619
Manufacturing	185,035	72,941	112,094	185,035	72,941	112,094
Construction	67,924	1,688	66,236	67,924	1,688	66,236
Trade & hotels etc.	260,087	53,951	206,136	260,087	53,951	206,136
Transport, storage & commu.	105,093	5,779	99,314	105,093	5,779	99,314
Insurance & real estate	70,449	13,536	56,913	70,449	13,536	56,913
Personal services	117,897	38,361	79,536	117,897	38,361	79,536
Other	29,489	1,606	27,883	29,489	1,606	27,883
2. Unpaid economic activities	97,300	39,887	57,413	96,137	41,866	54,271
Percentage	100.0	41.0	59.0	100.0	43.5	56.5
3. Unpaid non-economic activities	252,078	219,287	32,791	323,216	269,687	53,529
Percentage	100.0	87.0	13.0	100.0	83.4	16.6
Cooking	108,684	100,800	7,884	139,439	129,556	9,883
Cleaning	41,051	37,166	3,885	47,336	42,423	4,913
Laundry	17,659	15,831	1,828	20,118	18,119	1,999
Collecting firewood	2,845	2,845	-	4,392	3,649	743
Collecting water	1,793	1,793	-	2,536	1,793	743
Shopping/ Marketing	18,478	9,338	9,140	20,364	9,338	11,026
Elderly care and nursing	5,206	2,350	2,856	8,837	5,009	3,828
Other domestic	5,689	5,689	-	13,206	6,122	7,084
Child care	18,985	18,985	-	23,098	18,985	4,113
Children's education	31,687	24,489	7,198	43,948	34,693	9,255
Total of 1 & 3	1,263,427	455,905	807,522	1,334,565	506,305	828,260
Percentage	100.0	36.1	63.9	100.0	37.9	62.1

Note: 2. Unpaid economic activities were not added, because conventional GDP should theoretically cover this component although there is an underestimation.

**Chart 2: GDP (conventional and revised) share by sex
(using Generalist approach)**



**Chart 3: GDP (conventional and revised) share by sex
(using specialist approach)**



Conventional GDP disaggregated by sex shows that women's contribution to this is 23.4 percent and men's contribution is 76.6 percent. When unpaid non-economic activities are added to conventional GDP and disaggregated by sex, women's contribution was increased to 36.1 percent and men's contribution was decreased to 63.9 percent, when generalist approach was used.

Table 25 – Conventional GDP, unaccounted GDP (value of unpaid work)

Country	Conventional GDP			Unaccounted GDP			Total GDP (Revised)		
	Total	Female	Male	Total	Female	Male	Total	Female	Male
*Bangladesh (1989/90)									
%	100	25	75	100	97	3	100	41	59
+ Nepal (1993/94)									
(Million Rs)	116128	31886	84242	146365	135773	10592	314295	197845	116450
%	100.0	27.5	72.5	100.0	92.8	7.2	100.0	62.9	37.1
**Japan (1991)									
(Thousand million Yen – RC-G)				66728	59684	7044			
%				100.0	85.3	14.7			
++Sri Lanka (1998)									
(Million Rs)	1011349	236617	774731	252078	219287	32791	1263427	455905	807522
%	100.0	23.4	76.6	100.0	87.0	13.0	100.0	36.1	63.9

Source:

* Non market work and National Income (case study), 1989/90 – S. Hamid

+ GDP economic survey, 1993/94

** Monetary valuation of unpaid work, 1991

++ Based on Time-Use Survey (case study), 1998

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