



UNRISD

UNITED NATIONS RESEARCH INSTITUTE FOR SOCIAL DEVELOPMENT

The Political and Social Economy of Care: Nicaragua Research Report 2

Isolda Espinosa González

September 2008

The **United Nations Research Institute for Social Development (UNRISD)** is an autonomous agency engaging in multidisciplinary research on the social dimensions of contemporary problems affecting development. Its work is guided by the conviction that, for effective development policies to be formulated, an understanding of the social and political context is crucial. The Institute attempts to provide governments, development agencies, grassroots organizations and scholars with a better understanding of how development policies and processes of economic, social and environmental change affect different social groups. Working through an extensive network of national research centres, UNRISD aims to promote original research and strengthen research capacity in developing countries.

Research programmes include: Civil Society and Social Movements; Democracy, Governance and Well-Being; Gender and Development; Identities, Conflict and Cohesion; Markets, Business and Regulation; and Social Policy and Development.

A list of the Institute's free and priced publications can be obtained by contacting the Reference Centre.

UNRISD, Palais des Nations
1211 Geneva 10, Switzerland

Tel: (41 22) 9173020

Fax: (41 22) 9170650

E-mail: info@unrisd.org

Web: <http://www.unrisd.org>

Copyright © United Nations Research Institute for Social Development (UNRISD).

This is not a formal UNRISD publication. The responsibility for opinions expressed in signed studies rests solely with their author(s), and availability on the UNRISD Web site (<http://www.unrisd.org>) does not constitute an endorsement by UNRISD of the opinions expressed in them. No publication or distribution of these papers is permitted without the prior authorization of the author(s), except for personal use.

TABLE OF CONTENTS

1. INTRODUCTION.....	4
2. WHAT DO WE MEAN BY WORK AND CARE WORK?	5
3. WHAT IS THE SOCIO-DEMOGRAPHIC AND ECONOMIC PROFILE OF THE STUDY POPULATION?	7
4. WORK-CARE REGIMES OF THE 15 TO 64 YEARS OLD POPULATION	14
5. WHAT IS THE VALUE OF UNPAID CARE WORK IN NICARAGUA?	29
6. IN CONCLUSION	33

1. INTRODUCTION

What do we know about how Nicaraguans use time and, in particular, their time devoted to care? If responding to this question is important under any welfare and care regime, it is especially important when there are market and State “failures” in meeting the basic needs of the population. In this context, one would expect a much larger role of the unpaid work carried out in households and communities.

From the very inception of economics as a discipline, the central corpus of its work has been developed with a view to understanding capitalist production (Hausman 1984 and Albelda 1997, cited in Carrasco 2006). Thus, “work” has been defined to include only those activities that are actual or potential objects of commerce. This concept of work has profoundly affected the recognition of women’s contribution to the economy and to the society.

Feminist economics regards this approach as incomplete, since a society’s survival depends not only on its pattern of economic production, but also on social reproduction¹ pattern, that includes unpaid service production for household’s consumption. Under prevailing theoretical approaches, the invisibility of reproductive work has also rendered reproductive work—and those who perform it—socially invisible. More specifically, what is obscured is the relationship between production and reproduction characteristics of the capitalist system (Picchio 1994).

For feminist economics, social reproduction requires a set of activities generally designated as work, most of which fall outside what is typically defined as being part of “the economy.” The most important of these activities, in terms of both content and time consumed, are (unpaid) domestic work and caregiving (Carrasco, 2006).

Historically, care work has been provided by women within the household on an unpaid basis. However, it may be supplemented by paid work performed in the home, paid work in the public or private service sectors, and volunteer work. According to Picchio (1999), however, the ultimate responsibility for reconciling these forms of work, and for dealing with their less-than-sufficient yield, continues to be borne by those who perform unpaid work within the family—especially women.

To address care work in Nicaragua, this chapter (a) categorises work-care regimes in Nicaragua according to the different ways in which households combine activity in the labour market with unpaid care work, and the manner in which they allocate these activities among their members; and (b) estimates the contribution to the national economy made by women’s unpaid care work, in order to reveal this hidden cost of economic production.

To this end, we have analysed data from the time-use section of the 1998 National Standard of Living Survey (Encuesta Nacional de Medición del Nivel de Vida, or

¹ The term “social reproduction” is used to refer broadly to the reproduction of the ideological and material conditions that sustain a social system. “Reproduction of the work force” refers to the daily maintenance of workers and future workers, as well as to the process of educating and training them. “Care work” is a similar concept.

EMNV for its Spanish acronym) conducted by Nicaragua's National Institute of Statistics and Census (Instituto Nacional de Estadísticas y Censos, or INEC).

The study sample², which is representative of the national population, comprises 8,756 persons of at least 6 years of age who were regular residents of the 2,325 selected housing units surveyed between April and August for the time-use section of the 1998 EMNV. Each of these individuals was asked 25 questions, in order to establish whether he/she had carried out certain activities the *day prior* to the interview. The time spent in various daily activities was also checked, ensuring that they totalled 24 hours. The population's socio-demographic and economic characteristics were registered on other sections of the 1998 EMNV.

It should be noted that obtaining information on time use by asking about pre-defined activities is problematic, inasmuch as activities not addressed by the questions (e.g., care of older adults) may be inadvertently omitted. In addition, the reliance on respondents' memory increases the chance that responses will reflect what respondents "normally" do (or think they should do), rather than what they actually did on the reference day. Basing the reports on respondents' memory also affects the quality of the data on the time devoted to different activities, since respondents have a tendency to round off times.

Furthermore, the fact that the number of questions concerning different activities was not constant may have affected the final time-use data. For example, there were four questions on household work, but only one on childcare. (In the latter case, no details were solicited regarding the specific activities involved, or to determine whether the children cared for were members of the household, as opposed to members of other households.) Responses thus reflected only what the respondents themselves considered to be childcare and their subjective perceptions of time.

Despite these limitations, and as shown in the chapter more broadly, the data collected through the survey are valid and extremely useful, not only for assessing actual time use in Nicaragua, but for public policy making that would hopefully deal with the many tensions involved in balancing paid work and unpaid care work.

2. WHAT DO WE MEAN BY WORK AND CARE WORK?

There are two basic definitions that are important for this study: work and care work. The definition of work used by the Nicaraguan government is based on the standards and guidelines of the System of National Accounts (SNA)³. The labour force statistics consider that work the persons doing productive activities within the SNA production boundary. The SNA defines productive activities as those carried out

² The sample design involved a systematic selection with a probability proportional to size of the segment, conducted in two stages and independently in each domain of the study (total, urban and rural). The primary sampling unit of the sample was the census segment (average of 60 households) and the secondary unit was the specific household.

³ The first version of this was published in 1953 by the United Nations Statistical Commission. New versions were approved in 1968 and 1993, based on studying the progress and obstacles countries experienced in implementing the system as well as conceptual breakthroughs. In 1994, the Nicaraguan government decided to adopt the 1993 recommendations.

for purposes of sale or barter in the marketplace, plus all goods and services provided free of charge to individual households, or provided collectively to the community by governmental entities or non-profit institutions serving households (NPISHs).

However, many households—especially in developing countries—produce goods and services which, though used for themselves, could in fact be offered in the marketplace to others. The SNA includes such goods and some such services within its definition of production and the use of such goods can shift between the market and non-market. Here we can mention household agricultural production and warehousing for household consumption; gathering of non-cultivated products; firewood gathering and collection of water; processing of agricultural products and other types of processing, e.g., design and fabrication of clothing, furniture-making; and housing construction.

The SNA, however, excludes domestic and personal services performed by households for their own consumption, such as food preparation; care, education and training of children; care of the ill and the elderly; and cleaning, maintenance and repair of durable goods, etc. Work performed by paid domestic workers is not subject to the exclusion.

Though all of these activities are recognised as being productive in the economic sense (SNA, 1993: 1.21), they are excluded from the accounts, since the fact that they are consumed at the time they are produced makes their relationship to the market a weaker one.

The present study adopted a modified version of the SNA definition of work. Collection of water and wood, which in the SNA are part of work, are excluded here on account of the fact that they are not considered as such in the official statistics of Nicaragua. They are therefore included here as part of unpaid care work. In effect, SNA work covers the following categories:

- Paid work.
- Unpaid work in family or non-family firms or businesses⁴.

Care work, on the other hand, is defined as activities, whether paid or not, which are done for the household-family with the aim of assuring the daily reproduction of its members.

In regard to distinguishing the specific activities involved in care work from those not considered work, there is consensus on the *third person criterion*, which identifies activities carried out by and for household members that result in goods or services capable of being exchanged on the market, and that could be delegated to persons outside the household. Thus, individuals' recreational activities and self-provided personal care—which cannot be delegated—are excluded.

⁴ Although the time-use section of the 1998 EMNV included questions referring specifically to these categories, it also included two questions on family economic activity (both agricultural and non-agricultural), but without inquiring as to whether remuneration was received. To deal at least partially with this situation, we consulted the economic activity section of the survey and used its classification scheme to categorise activities as paid or unpaid.

In view of its objectives, the present study examines only *unpaid care work*. Based on the content of the time-use section of the 1998 EMNV, the activities included are classified in two categories:

- Domestic tasks, including cooking, housecleaning, dishwashing and laundry, ironing, house repairs, and household shopping.
- Care for persons, including childcare and care of the ill. (Adult care more generally is not under examination here). However, the way in which the questions in the time-use section of the 1998 EMNV were formulated makes it impossible to determine whether the persons being cared for did or did not belong to the interviewees' households.

We decided not to include community and related services on account of the fact that, because of the way in which the questions were asked, it is not possible to determine to which category of the SNA they correspond.

3. WHAT IS THE SOCIO-DEMOGRAPHIC AND ECONOMIC PROFILE OF THE STUDY POPULATION?

To study the time use patterns of Nicaraguans, we use a combination of variables, among which sex is the central axis of the analysis given the importance of gender roles for time use. In this section we discuss how the surveyed population looks like according to these variables. Based on this depiction we can tell whether the sample is reliable to learn about the large population and helps make sense of primary results concerning time use.

Below we present the basic socio-demographic and economic profile of the population for which we have information on time use.

3.1. Area of residence

As Table 3.1 indicates, the sample is almost equally distributed between the sexes: 49.7% men and 50.3 women.

Just over half the sample (52.6%) lived in urban areas. However, disaggregation by sex shows the men almost equally distributed between urban and rural areas, while a significant majority of the women reside in urban areas (55.6%).

The greater propensity of rural women to migrate to cities reflects the greater job opportunities available in urban centres, where these women traditionally find work as domestic employees or, more recently, in *maquila* enterprises in free zones.

Table 3.1
Distribución de la Población de 6 años y más
Entrevistada por Sexo y Área de Residencia

Por ciento

Sexo	La República	Área de Residencia		
		Total	Urbana	Rural
Total	100.0	100.0	52.6	47.4
Hombres	49.7	100.0	49.6	50.4
Mujeres	50.3	100.0	55.6	44.4

Source: Author, based on data from time-use section of 1998 EMNV conducted by INEC.

3.2. Age groups

The age groups used to analyse the information appearing in Table 3.2 are based on the combination of official Nicaraguan definitions of childhood (0 to 17) and of women's reproductive age (15 to 49). Though the behaviour of the retirement-age population (65+) is also of interest, it was necessary to aggregate this group with the 50-64 group, since the number of observations in the 65+ population constituted less than 5% of the total population interviewed.

Table 3.2
Distribution of the population 6 years and older
interviewed, by sex and age group

Per cent

Sexo	Total	Age Group		
		6 a 17	18 a 49	50 +
Total	100.0	40.2	46.3	13.5
Men	100.0	41.3	45.1	13.6
Women	100.0	39.2	47.4	13.5

Source: Author, based on data from time-use section of 1998 EMNV conducted by INEC.

As Table 3.2 shows, the sample was concentrated in the first two age groups, with the 18-49 group predominating, especially among women. Thus, slightly less than half of the population interviewed consisted of individuals in the peak reproductive and reproductive age group. The sample in the 50+ group was evenly divided between the sexes, and thus does not reflect women's greater life expectancy.

As to age distribution within the sample, 64.1% of the sample (63.3% of males and 64.9% of females) fell in the 15- to 64-year-old group.

3.3. Marital status

Here we show the proportion of individuals who either were members of conjugal unions at the time of the interview – whether married or not⁵–, had been in the past (i.e., were currently separated, divorced or widowed) or never had been (single people).

Table 3.3

Distribution of the population 12 years old and older interviewed, by sex and conjugal status

Per cent

Sex	Total	Conjugal Status		
		Married or in conjugal union	Separated, divorced or widowed	Single
Total	100.0	47.7	15.5	36.8
Men	100.0	48.9	7.9	43.2
Women	100.0	46.5	22.9	30.6

Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998, INEC.

The data indicate that slightly under half of the 12-year-old and older population was married or in conjugal unions, and over one third was single. Men and women showed similar representation among married persons and persons in conjugal unions, unlike the figures for other age groups. Interestingly, the proportion of single men is 12 percentage points higher than that of single women. The percentage of separated, divorced or widowed men is approximately one third the percentages of separated/divorced/widowed women. In other words, men who have had a stable couple relationship that ends are unlikely to continue living without a partner.

Table 3.4

Distribution of the population 15 years old and older interviewed, by sex and conjugal status

Per cent

Sex	Total	Conjugal Status		
		Married or in conjugal union	Separated, divorced or widowed	Single
Total	100.0	54.4	17.6	28.1
Hombres	100.0	56.2	8.9	34.9
Mujeres	100.0	52.6	25.9	21.5

Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998, INEC.

⁵ Nicaragua's legislation grants equal rights to all couples, regardless of the type of conjugal union of which they are a part.

In Nicaragua, information on conjugal status is sought on individuals 12-years-old and older, as a result of the early average age at which women enter a first union.⁶ However, inclusion of the under-15 population affects the data on conjugal status, increasing the relative weight of single persons and reducing that of the other categories.

As Table 3.4 shows, more than half of the 15+ population is married or in conjugal unions—7 percentage points higher than the data in Table 3.3. The proportion of the separated/divorced/widowed population is 2 percentage points above the figures in that table, while the proportion of single people is nearly 9 points lower.

3.4. Types of households/families

Respondents were categorised according to the type of household to which they belonged. The categorisation was based on the stage of the household member's life cycle. Three groups were defined: children (under 18), adults (18-64) and older adults (65 and over). The various possible combinations of these groups produced seven types of households: adults and children; children, adults and older adults; adults only; adults and older adults; only older adults; older adults and children; and children only. Table I.5 shows the distribution of the population only for the first three types of households, since the last four together represent a mere 3.1% of the total.

Table 3.5

Distribution of the population 6 years old and older interviewed, by sex and type of household

Sex	Total	Type of household			
		Adults and children	Children, adults and older adults	Adults only	Other
Total	100.0	75.9	16.3	4.5	3.3
Men	100.0	75.7	15.7	5.3	3.3
Women	100.0	76.1	16.9	3.7	3.3

Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998, INEC.

As may be seen, slightly over three quarters of the respondents belong to households composed of adults and children, without significant differences according to sex. The other household types to which respondents belong, in descending order of incidence among respondents, were as follows. A total of 16.3% of respondents belong to three-generation households (children, adults and older adults), with women more likely than men to be members of such households. Adults-only households account for less than 5% of respondents, and (unlike the previous group) men are more likely than women to belong to such households.

⁶ According to the Encuesta de Demografía y Salud [Demographic and Health Survey] (ENDESA), the median age of first unions among the population was 18.2 years in 2001.

3.5. Number of children under 6 in the household

Table 3.6 shows the distribution of the surveyed population by the number of children under 6 in the household, which is a key classification for the present study.

Two fifths of the population live in households without children under 6. The rest are evenly divided between households with one such child and households with two or more. The distribution of women and men in the latter categories is the same.

Table 3.6

Distribution of the population 6 years old and older interviewed, by sex and number of children under 6 years old in household

Sex	Total	Number of children under 6 years in household		
		None	One	Two or more
Total	100.0	39.9	30.0	30.1
Men	100.0	40.8	29.6	29.6
Women	100.0	39.1	30.4	30.5

Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998, INEC.

3.6. Economic activity status

The economic activity categories in tables 3.7 and 3.8 are those used in traditional labour statistics, which are based on SNA definitions of production, and which consider persons who have performed some "work" during the previous week to be *employed*, those who have not worked, but have sought work, to be *unemployed*, and those who neither worked nor actively sought work to be economically *inactive*.

Nicaragua defines the working-age population as 10 to 64. However, the 1998 EMNV investigated the economic activity status of the population from age 6 and over, in order to investigate the extent of child labour in the country. As is customary, the *calendar week prior to* the interview was the reference period used. For the time use section of the survey, however, the reference period was the *day prior to* the interview. This discrepancy explains some apparent inconsistencies, such as the phenomenon of individuals who were unemployed (the previous week) performing paid work (the previous day).

Table 3.7

Distribution of the population 6 years old and older interviewed, by sex and economic activity status

Per cent

Sex	Total	Economic activity status		
		Employed	Unemployed	Inactive
Total	100.0	44.4	5.2	50.4
Men	100.0	60.8	5.8	33.3
Women	100.0	28.2	4.5	67.3

Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998, INEC.

One half of the population interviewed was economically inactive, and less than one half were employed, but there are significant differences by sex. A majority (60.8%) of men were employed, and only one third were economically inactive, while less than one third of women were employed, and 67.3% were economically inactive. The unemployed population constituted only 5.2% of the total, with the proportion of men 1.3 percentage points higher than that of women.

Table 3.8

Distribution of the population 15 to 64 years old interviewed, by sex and economic activity status

Per cent

Sex	Total	Economic Activity Status		
		Employed	Unemployed	Inactive
Total	100.0	60.4	6.9	32.7
Men	100.0	82.1	7.9	10.1
Women	100.0	39.4	6.0	54.6

Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998, INEC.

In the 15- to 64-year-old population (i.e., the population capable of fully engaging in work), the proportion of employed individuals is 16.0 percentage points higher than the figures in Table 3.7, with a greater rise in the figure for men than for women (21.3 points and 11.2 points), while the economically inactive population drops by 17.7 points (the figure for men this time falling more than for women—23.1 points vs. 12.7 points).

3.7. Household monetary income quintiles

Household monetary income includes all monetary income of household members, whether from work, income from property, current transfers or extraordinary income from sources such as inheritances or insurance payments. The income ranges defining the quintiles are shown following.

Quintil	Rango	
1 (màs pobre)	0	410
2	415	950
3	955	1.612
4	1.620	2.997
5 (màs rico)	3.000	140.333

As may be seen, quintile 1 includes households without any monetary income during the calendar month prior to the interview. This quintile is explained largely by the fact that the survey was conducted between April and August, before the harvest of annual and perennial crops—the time when households whose sole economic activity is agricultural receive the income from the sale of their products.

To understand what the above figures mean, note that in 1998 the poverty line⁷ was C\$355.00 per person, and the nation's average household size was 5.4 individuals. Thus, an average household required monthly monetary income of C\$1,917.00 or more to cover its basic consumption needs and not be classified as poor.⁸ This means that the households in quintiles 1, 2 and 3 and some of those in quintile 4 do not have the necessary financial resources to cover their basic consumption needs.

Table 3.9 shows no significant differences in the distribution of men and women by household income quintile. However, there is a very slightly greater tendency for women to live in households in quintiles 3 and 5.

Table 3.9

Distribution of the population 6 years old and older interviewed, by sex and income quintile of household

Sex	Total	Household income quintile					<i>Per cent</i>
		1	2	3	4	5	
Total	100.0	19.9	19.9	20.6	20.3	19.4	
Men	100.0	19.9	20.6	20.1	20.5	18.9	
Women	100.0	19.8	19.2	21.1	20.1	19.9	

Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998, INEC.

In short, the structure of the survey population matches that of the National Population Census of 1995 reflecting the main demographic and economic trends of the past decade.

⁷ The poverty line is defined in terms of the monthly per capita consumption needed to satisfy minimum caloric requirements (the extreme poverty line), plus an additional amount to cover consumption of essential non-food goods and services, such as housing, transportation, education, health and clothing, as well as daily household expenses.

⁸ According to official 1998 data, 47.9% of the country's population was under the consumption poverty line.

4. WORK-CARE REGIMES OF THE 15 TO 64 YEARS OLD POPULATION

What are the time use patterns of the population aged 15-64 years? These are the ages which cover the peak of productive capacity as well as the reproductive years of women (15-49 years). In order to answer this question we analyse *SNA work*, and *paid work* in particular, together with *unpaid care work*. We subsequently deepen the study by looking at time spend on care of children.

To analyze the way in which the population distributed its time among the different activities in 1998, we use three basic indicators:

- ★ Rate of participation, which shows the proportion of the population that undertakes the given activity, irrespective of the time spent on it.
- ★ Mean time per participant, which refers to the mean number of hours spent per day on the activity by those who undertake the activity.
- ★ Mean population time, which is a synthetic indicator based on the previous two, and is defined as the mean number of hours spent per day on the activity averaged over the full population.

Because the first two indicators refer only to those who undertake the activity, none of them provides sufficient information about the population's time use *by itself*. It is necessary to analyze them together.

Below we present three important findings: The distribution of men's and women's time by type of work and by basic socio-demographic and economic characteristics, and multivariate analysis to establish the strength of the relationship between unpaid care work and care of persons with a range of variables.

4.1. Distribution of time between the main types of work

All the activities that a person does can be classified into three major categories according to the SNA: *SNA work*, *unpaid care work (UCW)* and *personal care or non-productive activities* (see Table 4.1).

As one can see, there are big differences in the participation rates of men and women in *SNA work* and *unpaid care work*. In the first case, the participation rate of men is more than double that of women; in contrast, for UCW women show higher rates of participation. The difference in the rates for women and men are less for unpaid care work than for SNA work. This is probably due to the inclusion of collection of water and wood as part of unpaid care work, as these are activities that in some cases are done by adult men and/or boys.

The participation rates in non-productive activities are 100% for both women and men, which confirms that all do at least one personal activity (sleeping, eating, bathing, etc).

Table 4.1.

Tasas de Participación, Tiempo Promedio de Participantes y Tiempo Promedio de la Población de 15 a 64 años por Sexo, según Categorías del SCN

Concepto	Total	Hombres	Mujeres
Tasas de Participación	<i>Por ciento</i>		
SCN	53.9	74.9	33.7
TCNR	70.8	50.8	90.1
Actividades No Productivas	100.0	100.0	100.0
Tiempo Promedio de Participantes	<i>Horas por día</i>		
SCN	8.2	8.5	7.6
TCNR	5.2	3.0	6.3
Actividades No Productivas	15.9	16.1	15.7
Tiempo Promedio de Población	<i>Horas por día</i>		
SCN	4.4	6.4	2.6
TCNR	3.6	1.5	5.7
Actividades No Productivas	15.9	16.1	15.7

Fuente: Cálculos propios con base en datos de la Sección de Uso del Tiempo de la EMNV 1998.

In terms of the mean time spent on each of the three activity categories, for a particular sex the mean per participant will be bigger than the population mean. This difference increases with lower participation and vice versa. This is the reason that the difference (between the two means) for the mean time spent on SNA work is less for men than for women. In contrast, the gap for mean time spent on UCW is less for women than for men. In the case of non-productive activities the difference is zero, given that the participation rate is 100% for both sexes.

We note that although only a third of women do SNA work, the time that they spend on this work is only 10% less than that of men. In other words, these women are subjected to tension in the use of time that do not face men.

According to Table 4.2, in terms of both total SNA work and each of its components, the participation of men is a little more than double the participation of women.

The difference in the time devoted by participants to paid work is only 8%, but with unpaid SNA work the difference increases to 39%, both in favor of men. The difference increases to 145% and 200%, for paid SNA work and unpaid SNA work respectively, when we consider the mean population time.

Table 4.2.
Tasas de Participación, Tiempo Promedio por Participante y Tiempo Promedio de la Población de 15 a 64 años dedicado al Trabajo SCN, por Sexo

Concepto	Total	Hombres	Mujeres
Tasas de Participación		<i>Por ciento</i>	
SCN	53.9	74.9	33.7
Trabajo Remunerado	42.9	60.1	26.3
Trabajo No Remunerado	9.7	12.9	6.6
Tiempo Promedio por Participante		<i>Horas por día</i>	
SCN	8.2	8.5	7.6
Trabajo Remunerado	8.8	9.0	8.3
Trabajo No Remunerado	6.4	7.1	5.1
Tiempo Promedio de Población		<i>Horas por día</i>	
SCN	4.4	6.4	2.6
Trabajo Remunerado	3.8	5.4	2.2
Trabajo No Remunerado	0.6	0.9	0.3

Fuente: Cálculos propios con base en datos de la Sección de Uso del Tiempo de la EMNV 1998.

With unpaid care work, women have higher participation rates and mean times than men (see Table 4.3). The biggest differences are observed for care of persons and domestic chores, for which the participation rate of women is more than 4 and 2 times respectively that of men. For both sexes, higher rates of participation are recorded for domestic chores.

If we look at participant means, the time spent by women in these same activities is 50% and 100% more than the corresponding times for men. In contrast, for collection of water and wood the differences are less stark (Table 4.3). However, if we take the mean population time, the difference between the time spent by women and men for care of persons and domestic chores increases to 550% and 460% respectively.

Table 4.3.

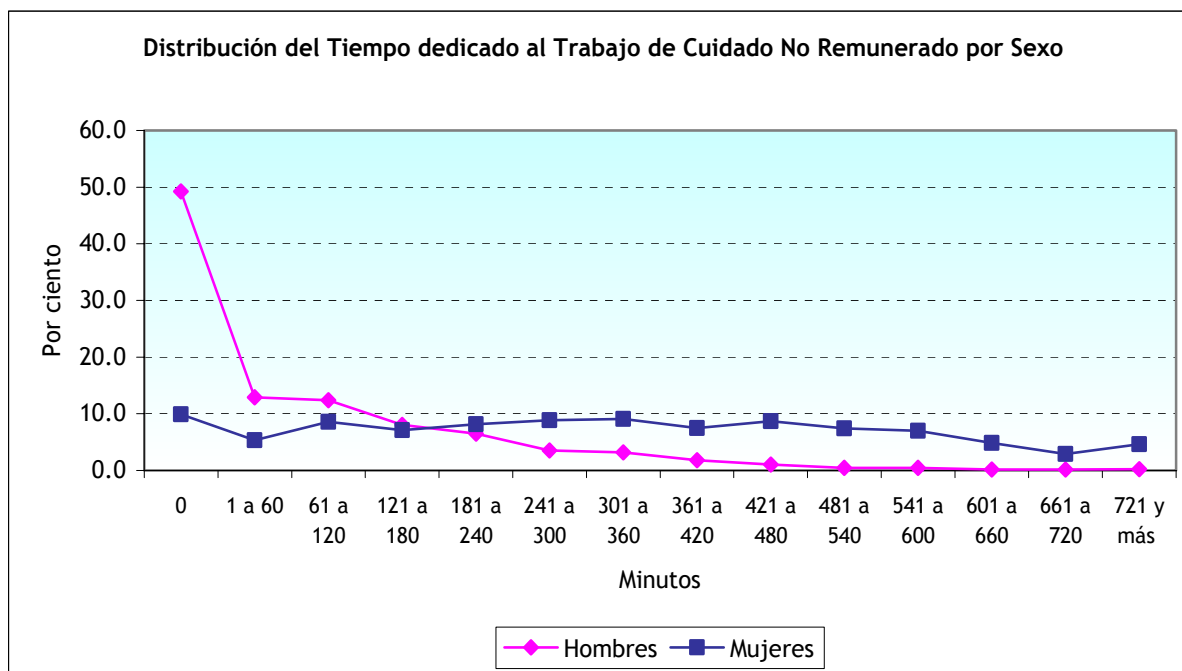
Tasas de Participación, Tiempo Promedio por Participante y Tiempo Promedio de la Población de 15 a 64 años dedicado al Trabajo de Cuidado No Remunerado, por Sexo			
Concepto	Total	Hombres	Mujeres
Tasas de Participación		<i>Por ciento</i>	
TCNR	70.8	50.8	90.1
Cuidado de Personas	22.5	7.9	36.5
Tareas Domésticas	62.0	35.9	87.1
Acarreo de Agua y Leña	25.5	23.5	27.5
Tiempo Promedio por Participante			
TCNR	5.2	3.0	6.3
Cuidado de Personas	2.9	2.1	3.0
Tareas Domésticas	4.1	2.5	4.8
Acarreo de Agua y Leña	1.7	1.9	1.5
Tiempo Promedio de Población			
TCNR	3.6	1.5	5.7
Cuidado de Personas	0.6	0.2	1.1
Tareas Domésticas	2.6	0.9	4.2
Acarreo de Agua y Leña	0.4	0.5	0.4
Fuente: Cálculos propios con base en datos de la Sección de Uso del Tiempo de la EMNV 1998.			

In addition to the enormous gender gaps observed for unpaid care work, for the total and the main components, the low participation and very limited time devoted by men and women to care of persons is worrying. It is less than an hour per day – slightly more than an hour for women and for men only 0.2 hours. Considering the age structure of the Nicaraguan population and the almost non-existent supply of care services, whether public or market, this result suggests that younger people care for themselves. Given the serious implications that this situation could have for Nicaraguan society, it merits in-depth study using a holistic approach.

Figure 4.1 shows the distribution of time devoted to *unpaid care work* by the population in the 15-64 age group. As this figure indicates, nearly 50% of men and 10% of women devoted no time to this type of work during the reference day (the day prior to the interview). Between 1 and 120 minutes of *unpaid care work* is located 25% of the men and 13.9% of the women.

The concentration of men in the first groups, in terms of time devoted to *unpaid care work*, along with the fairly even distribution of women across the time groups (including the last ones), shows the profound gender inequality that exists in this area.

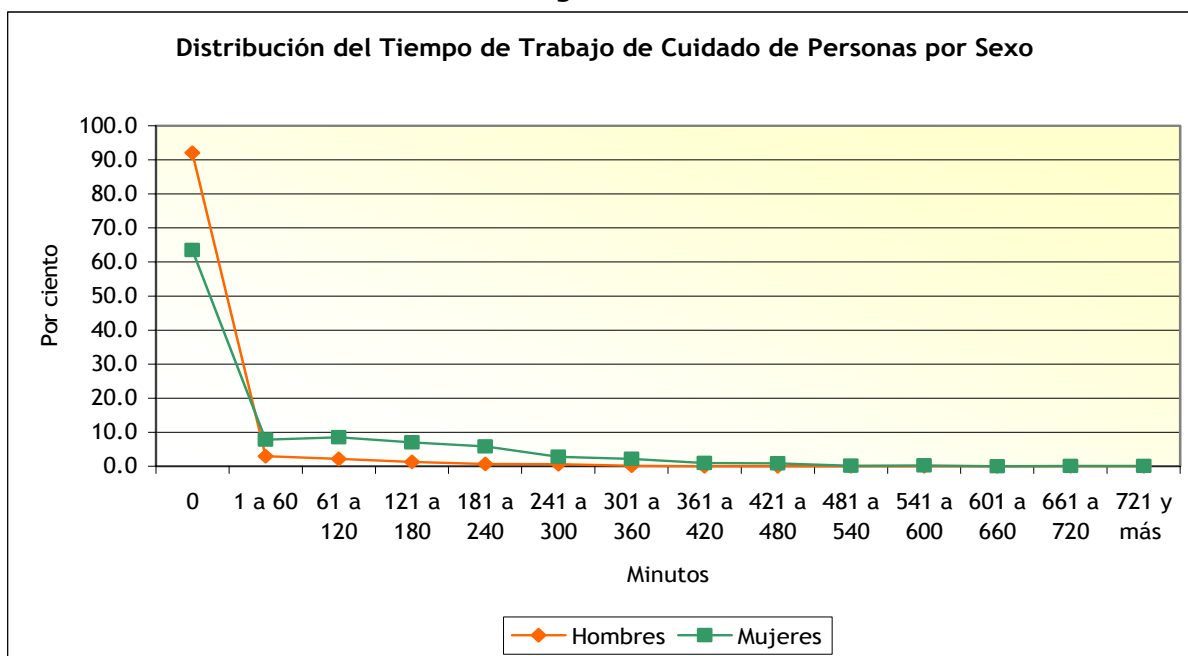
Figure 4.1.



Fuente: Elaboración propia con base en datos de la Sección Uso del Tiempo de la EMNV 1998, INEC.

The distribution of time devoted to *care for persons* by the population in the 15-64 age group shows that 92.1 and 63.5% of men and women, respectively, stated that they had spent no time in *care for persons* (Figure 4.2.). Thus, a majority of the population does not dedicate time to care for persons, whether children or individuals who are ill.

Figure 4.2.



Fuente: Elaboración propia con base en datos de la Sección Uso del Tiempo de la EMNV 1998, INEC.

On the other hand, 7.9% of the men who devoted time to *care for persons* were concentrated in the 1- to 120-minute group. In contrast, 36.5% of women who stated that they had cared for persons, were in the 1- to 240-minute group.

4.2. Who uses time for what?

In this section we analyze the relationship between the use of time by men and women aged 15-64 years and selected socio-demographic and economic characteristics.

Area of residence

Men's rates of participation in *SNA work* and *paid work* are higher than women's in both urban and rural areas. Within the sexes, rural inhabitants show the highest participation rates in these types of work, suggesting that women have greater opportunities for paid work in the cities. The gender gap in these parameters is greater in the rural population.

Men also spend more hours per day in *SNA work* and *paid work* than do women. It is striking that it is in the rural population that the difference in time devoted to paid work (0.5 hours, or 6% of the day) is the least pronounced.

Table 4.4.

Rates of participation and average time dedicated by 15-64 year old population to selected activities, by area of residence and sex

Area of residence and sex	Rates of participation (percentage)			Average time (hours per day)		
	SNA work	Paid work	UCW	SNA work	Paid work	UCW
Total	53.9	42.9	70.8	8.2	8.8	5.2
Urban	53.5	44.8	67.7	8.4	9.0	5.0
Men	67.7	57.9	44.4	8.8	9.3	2.9
Women	41.4	33.8	87.3	7.8	8.4	5.8
Rural	54.5	40.7	74.5	8.1	8.5	5.4
Men	82.2	62.4	57.2	8.3	8.6	3.0
Women	23.3	16.3	93.8	7.1	8.1	7.0

Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998

The greatest difference between *SNA work* and *paid work* participation rates is seen among rural men, reflecting the extent to which they are active in the unpaid labour market.

As expected, women, and particularly rural women, show the highest amounts of time and rates of participation (over 90%) in *unpaid care work*. Independent of area of residence, they devote twice as long to these activities as is the case for men. Among men, it is rural inhabitants who are most involved in *unpaid care work*, a phenomenon that may reflect the inclusion of water collection and firewood gathering, though the time they spend is comparable to that spent by their urban counterparts.

Rural women devote 20% more time than urban women to *unpaid care work*, probably due to their poorer housing conditions and the greater number of members per household. However, the data suggest that these factors do not affect men's behaviour.

Age group

Rates of participation in *SNA work* and *paid work* show marked differences from one age group to another. Both sexes show the highest participation rates in the 31-49 group, followed by the 50-64 group, the 18-30 and the 15-17 age groups. The average time devoted by men and women shows a similar pattern.

As shown in Table 4.5, the greatest gender difference in *SNA work* is seen in the 18-30 age group, followed very closely by the 50-64 group, which also exhibits the greatest difference between men's and women's participation in *paid work*. In terms of time devoted by the two sexes to these types of work, however, the greatest difference is seen in the 15-17 group.

Table 4.5.

Rates of participation and average time dedicated by 15-64 year old population to selected activities, by age group and sex

Age group and sex	Rates of participation			Average time		
	SNA work	Paid work	UCW	SNA work	Paid work	UCW
	<i>percentage</i>			<i>hours per day</i>		
Total	53.9	42.9	70.8	8.2	8.8	5.2
15 to 17 years old	33.8	17.0	71.8	7.2	8.2	4.5
Men	50.2	25.5	54.8	7.8	8.5	3.0
Women	17.0	8.3	89.3	5.6	7.3	5.5
18 to 30 years old	53.5	40.2	70.3	8.2	8.8	5.3
Men	75.7	57.3	49.5	8.5	9.0	2.9
Women	31.6	23.4	90.7	7.4	8.4	6.6
31 to 49 years old	62.7	55.5	71.3	8.5	8.9	5.3
Men	84.8	76.4	49.5	8.8	9.1	3.0
Women	43.1	36.9	90.5	8.0	8.4	6.4
50 to 64 years old	56.3	49.3	70.3	8.3	8.7	4.9
Men	77.9	70.4	53.1	8.6	8.8	2.9
Women	34.0	27.6	88.0	7.7	8.2	6.2

Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998

SNA work: Work according to the System of National Accounts (SNA) definition

UCW: Unpaid care work, including care for persons and domestic work

The difference between rates of participation in *SNA work* and *paid work* diminishes with advancing age in both men and women, which could indicate that the proportion of unpaid market work diminishes with age.

Women's participation rates in *unpaid care work* do not vary significantly by age group, though slightly higher values are found in the 18-30 and 31-49 groups, which are precisely the groups in which men's participation rates are lowest. The time that men devote to *unpaid care work* is practically invariant with age (2.9 hours per day), and although women's time varies little, it is twice that spent by men.

Conjugal status

As Table 4.6 shows, participation in *SNA work* and *paid work* is greatest among men who are married or in conjugal unions and separated/divorced/widowed women, while the lowest rates are among single men and women.

As concerns time devoted to *SNA work*, men who are married or in conjugal unions, along with separated/divorced/widowed women, report the highest figures, while the lowest are among single persons of both sexes. For *paid work*, the highest times are reported by men who are married or in conjugal unions and separated/divorced/widowed men, and by women who are married or in conjugal

unions and single women. The lowest times are reported by single men and separated/divorced/widowed women.

Table 4.6.

Rates of participation and average time dedicated by 15-64 year old population to selected activities, by conjugal status and sex

Conjugal status and sex	Rates of participation			Average time		
	SNA work	Paid work	UCW	SNA work	Paid work	UCW
	<i>percentage</i>			<i>hours per day</i>		
Total	53.9	42.9	70.8	8.2	8.8	5.2
Married or in conjugal union	58.2	51.0	71.8	8.5	8.9	5.6
Men	84.7	77.1	50.0	8.8	9.0	3.0
Women	32.2	25.4	93.2	7.7	8.4	7.0
Separated, divorced or widowed	52.8	44.0	82.5	8.0	8.5	5.6
Men	75.4	60.0	59.0	8.5	8.9	3.4
Women	46.0	39.2	89.6	7.8	8.2	6.0
Single	46.6	27.5	63.2	7.8	8.6	3.9
Men	60.3	34.8	50.5	8.0	8.7	2.9
Women	25.2	16.0	83.2	7.0	8.4	4.9

Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998

SNA work: Work according to the System of National Accounts (SNA) definition

UCW: Unpaid care work, including care for persons and domestic work

In *unpaid care work*, women's participation rates are higher than men's by at least 50%, and the differential is nearly 100% among the population that is married or in conjugal unions. Separated/divorced/widowed men are most involved in *unpaid care work*—most likely driven by the lack of a partner—while those who are married or in conjugal unions and single men are least involved. Women, who are married or in conjugal unions show the highest rates of participation in *unpaid care work*, and single women the lowest. This confirms that the likelihood of doing *unpaid care work* increases with being female, with having a family, with having a conjugal partner in the case of women, and with not having a stable partner in the case of men.

The greatest time devoted to *unpaid care work* is seen among separated/divorced/widowed men, and among women in conjugal unions, with the lowest rate being among single men and women as well as men in conjugal unions. These data suggest that for women who have their own family, having a conjugal partner increases *unpaid work time*, while this situation decreases *unpaid work time* for men.

Number of children under 6 in the household

As Table 4.7 shows, men's participation in *SNA work* and *paid work* increases with the presence of children under 6 in the household, especially when there are two or

more children, while women's participation in *SNA work* decreases. There is a slight tendency for the amount of time that men devote to these types of work to increase with an increase in the number of children in the household. For women, the average time devoted to *SNA work* and *paid work* increases from the no-children to one-child group (6% and 3%, respectively, for the two types of work), but diminishes by 10% when there are 2 or more children in the household.

In regard to *unpaid care work*, men's and women's participation rates diminish when the number of children in the household increases from 0 to 1, then increases again when there are 2 or more. The time that men devote to *care work* follows a pattern similar to that described above for participation rates. On the other hand, women's time clearly increases.

It would seem, then, that the presence of children under 6 in the household leads to a reinforcement or resumption of traditional gender roles, as women reduce their participation in *paid work* to devote more time to *unpaid care work*, whereas men do the opposite.

Table 4.7.

Rates of participation and average time dedicated by 15-64 year old population to selected activities, by sex and number of children under 6 years old in household

Sex and number of children under 6 years old	Rates of participation			Average time		
	SNA work	Paid work	UCW	SNA work	Paid work	UCW
	<i>percentage</i>			<i>hours per day</i>		
Total	53.9	42.9	70.8	8.2	8.8	5.2
Men	74.9	60.1	50.8	8.5	9.0	3.0
None	69.5	56.3	55.3	8.4	8.9	3.2
One child	71.5	57.5	47.8	8.4	9.0	2.8
2+	76.4	61.2	50.7	8.6	9.0	3.0
Women	33.7	26.3	90.1	7.6	8.3	6.3
None	42.4	32.9	89.0	7.8	8.7	5.2
One child	33.2	28.1	86.0	8.3	9.0	5.9
2+	33.0	25.4	91.0	7.4	8.2	6.5

Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998

SNA work: Work according to the System of National Accounts (SNA) definition

UCW: Unpaid care work, including care for persons and domestic work

Economic activity status

As might be expected, the employed population of both sexes reports the highest participation rates and average time devoted to *SNA work* and *paid work*. For both types of work, the greatest differences between men's and women's rates are among the unemployed. However, it would be inadvisable to draw any conclusion from this, since this segment represents less than 7% of the total population in the 15-64 age group, and shows participation rates below 5%.

Unemployed men and economically inactive women are the most involved in *unpaid care work*—69.0% and 95.5%, respectively. However, unemployed and employed women's participation rates are high (92.4% and 82.2%), which indicates that these women are doing both types of work. Employed men and women show the lowest participation rates (48.2% and 82.2%). Unemployed men and economically inactive women devote the most time to *unpaid care work* (4.1 and 7.3 hours per day, respectively). Employed men and women show the lowest amounts of time (2.8 hours and 4.7 hours per day, respectively).

Table 4.8.

Rates of participation and average time dedicated by 15-64 year old population to selected activities, by economic activity status and sex

Economic activity status and sex	Rates of participation			Average time		
	SNA work	Paid work	UCW	SNA work	Paid work	UCW
	<i>percentage</i>			<i>hours per day</i>		
Total	53.9	42.9	70.8	8.2	8.8	5.2
Employed	83.9	70.4	59.5	8.5	8.8	3.7
Men	87.1	72.7	48.2	8.7	9.0	2.8
Women	77.4	65.9	82.2	8.0	8.4	4.7
Unemployed	28.2	4.7	79.3	5.2	7.9	5.3
Men	36.1	5.6	69.0	5.7	8.1	4.1
Women	18.2	3.5	92.4	4.0	7.6	6.4
Inactive	4.1	0.0	89.8	3.6	0.0	6.9
Men	6.1	0.0	57.8	3.9	0.0	3.2
Women	3.7	0.0	95.5	3.5	0.0	7.3

Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998

SNA work: Work according to the System of National Accounts (SNA) definition

UCW: Unpaid care work, including care for persons and domestic work

Household monetary income quintile

Men's and women's participation in *SNA work* and *paid work* diminishes as household income increases, though the pattern is clearer for women (Table 4.9). The very limited participation of first-quintile women in *paid work* is striking.

As regards time spent in *SNA work*, there is a tendency for men to do less as one moves from quintile 1 to quintile 5. The pattern for women undulates, increasing and diminishing from one to other quintile, and so on. The time spent by both sexes in *paid work* increases along with household income.

In terms of *unpaid care work*, there is a clear pattern of diminishing participation rates among both men and women with increasing household income. A similar pattern is seen in the time devoted by both sexes to this type of work, although the pattern is more pronounced among women. As mentioned above, these patterns,

particularly evident among women, suggest that domestic workers in the household are assuming some of the care burden.

Table 4.9.

Rates of participation and average time dedicated by 15-64 year old population to selected activities, by household income quintile and sex

Household income quintile and sex	Rates of participation			Average time		
	SNA work	Paid work	UCW	SNA work	Paid work	UCW
	<i>percentage</i>			<i>hours per day</i>		
Total	53.9	42.9	70.8	8.1	8.2	5.2
Quintile 1	49.3	30.5	81.4	8.4	7.7	5.6
Men	84.4	55.3	67.2	8.9	8.0	3.1
Women	16.2	7.2	94.8	8.0	6.0	7.4
Quintile 2	51.8	40.0	75.5	8.5	8.1	5.6
Men	76.8	59.5	56.9	8.4	8.4	3.4
Women	27.8	21.2	93.4	8.6	7.5	6.9
Quintile 3	52.6	44.0	72.7	7.9	8.3	5.0
Men	72.8	61.1	52.2	7.8	8.7	2.8
Women	32.6	26.9	93.0	8.1	7.3	6.2
Quintile 4	54.8	46.8	67.8	8.0	8.3	5.1
Men	71.0	60.7	45.5	7.4	8.6	2.8
Women	39.4	33.8	89.0	8.5	7.6	6.1
Quintile 5	58.6	48.3	62.2	7.8	8.5	4.6
Men	73.0	62.3	40.0	7.5	8.8	2.7
Women	44.6	34.9	83.6	8.2	8.1	5.5

Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998

SNA work: Work according to the System of National Accounts (SNA) definition

UCW: Unpaid care work, including care for persons and domestic work

What are the participation rates for care?

Just as one commonly estimates the “rate of economic dependency”, the UNRISD project on the Political and Social Economy of Care developed the *rate of care dependency*. This is defined as the proportion of the population that, on account of its age (under 15 years and more than 64 years) depends on care provided by people aged 15-64 years, who are considered capable of caring both for themselves and, in addition, caring for younger and older people.

The rate of care dependency is defined solely on the basis of the age of people. Give that there can be person between the ages of 15-64 years who also require care because they are ill or disabled, whether temporarily or permanently, this rate will tend to underestimate the real need for care. In addition, the quantity of care required by younger and older people depends on their specific age and health situation. These weaknesses of the indicator become more relevant where there is an epidemic or pandemic which primarily affects the population 15-64 years, such as in the case of HIV/AIDS. Finally, the care dependency rate does not take into consideration that people aged 15-64 years also need care.

In order to reduce some of these weaknesses, in the calculation of the care dependency rate we weigh according to age group, distinguishing in this way between people who require intensive care and those who require less. The population aged 13-14 years is not included in the calculation as the amount of care that they are able to give is similar to that which they can provide for themselves (see Table 4.10).

Table 4.10.
Tasa de Dependencia de Cuidado (TDC)

Grupo de Edad	Población 1995	Ponderación	Población Ponderada	%
A 00 a 06	970,547	1.0	970,547.0	26.66
B 07 a 12	753,197	0.5	376,598.5	10.34
C 75 a 84	45,269	0.5	22,634.5	0.62
D 85 y más	16,247	1.0	16,247.0	0.45
E 15 a 74	2,254,956	1.0	2,254,956.0	61.93
Total	4,040,216		3,640,983.0	100.00
Tasa Dependencia Cuidado = (A+B+C+D)/E = 0.61				

Fuente: Elaboración propia con base en datos del Censo de Población 1995, INEC.

The care dependency rate for Nicaragua is 0.61. That is, each person providing care is responsible for more than half of the care needed by a dependant person. The age group 0-6 years contributes the most to the care dependency rate, followed by the group aged 7-12 years. This is consistent with the demographic trend of the last decades in which fertility has fallen, but the level remains relatively high.

Nicaragua records the highest care dependency rate when compared with the City of Buenos Aires (0.16), South Korea (0.18), South Africa (0.36), India (0.39) and Tanzania (0.60).

Multi-variate analysis of time use

How do the above variables combine to influence the number of hours spent on unpaid care work in general and care of persons in particular?

To answer this question we use the Tobit model of censored regression. This technique is appropriate when the variables under study are continuous and distributed normally, and there is a censored point (where time is zero). When the variable is censored, the distribution that results is a mix between a continuous distribution and a discrete one, with a likelihood of accumulation at the censored point. The Tobit model estimates the probability of being at the censored low point (or high point) and uses this estimate to correct the linear regression.

Below we present two Tobit estimates, the first for unpaid care work and the second for care of person. For both estimations we use unweighted data and include cases for which time is zero. It is important to note that the definition of unpaid care work

used for the two estimates includes the care of persons, domestic chores and collection of fuel and water.

We define unpaid care work as the dependent variable, and explore the factors that can explain it. The explanatory factors considered are sex (being male), age, age squared, being a child (6-17 years), place of residence (rural area), marital status (being partnered or married), the presence of someone less than six years of age in the household, household income and the natural logarithm of household income.

Unpaid care work (UCW)

All of the variables except being a child and household income are found to be significant at the 95% confidence interval, but the natural logarithm of household income is significant.

Being male has the strongest effect (highest coefficient in absolute terms) on the amount of unpaid care work done. The amount of unpaid care work tends to decrease if the person is male, and as log household income increases. The coefficient of age is positive while that of age-squared is negative. This implies that the time spent on unpaid care work initially increases with age but afterwards declines. All the remaining variables tend to result in an increase in the amount of unpaid care work done.

Table 4.11.

Estimación Tobit del Tiempo de Trabajo de Cuidado No Remunerado						
Variable	Coficiente	Error Típico	t	P > t	Intervalo de Confianza 95%	
Hombre	-4.3127380	0.0945324	-45.62	0.000	-4.4980460	-4.1274300
Rural	0.6973112	0.1009744	6.91	0.000	0.4993756	0.8952467
Unido-casado	0.5814599	0.1224893	4.75	0.000	0.3413496	0.8215703
ln Ingreso del Hogar	-0.5603796	0.0575888	-9.73	0.000	-0.6732683	-0.4474908
Menores 6 años en Hogar	0.2602167	0.0402794	6.46	0.000	0.1812588	0.3391746
Edad	0.1921783	0.0157332	12.21	0.000	0.1613372	0.2230193
Edad Cuadrada	-0.0022111	0.0001724	-12.82	0.000	-0.0025491	-0.0018731
Niño	0.0877233	0.1884553	0.47	0.642	-0.2816973	0.4571439
Ingreso del Hogar	0.0000053	0.0000169	0.31	0.754	-0.0000278	0.0000384
Constante	4.4116400	0.5120024	8.62	0.000	3.4079850	5.4152960
Sigma	3.9348890	0.0401251			3.8562330	4.0135440
Obs. summary:	2734 left-censored observations at treprod2<=0					
	5408 uncensored observations					
	0 right-censored observations					
r(rho)^2 = 0.28989248						

The coefficient of multiple determination can be interpreted as the percentage of variation in the dependent variable explain by the regression. When the adjustment is perfect (all the points match the regression estimates), $R^2 = 1$ or 100%. Alternatively, R^2 corrected is commonly used, which takes into account the size of the sample and the number of parameters in the model. Most importantly, this cannot be "forced" to 1 simply by adding independent variables to the model. In this

case the corrected R^2 of 29% implies that the explanatory power of the model is relatively low.

Based on the above, we can say that in Nicaragua those who spend most time on unpaid care work are women, rural residents, those who are married or partners, members of households where the natural logarithm of household income is lower, and households which include a child under six years. The amount of unpaid care work first increases with age but then declines.

Cuidado de Personas

En este caso, el tiempo dedicado al *cuidado de personas* se definió como la variable dependiente y se mantuvieron las variables independientes del modelo anterior.

De acuerdo con los resultados del Cuadro 4.12., la edad y el ingreso del hogar resultaron no ser significativas al 5 por ciento de nivel de confianza. De las variables significativas, ser hombre, ser niño (6 a 17 años), estar unido o casado y la cantidad de menores de 6 años en el hogar son las que más influyen en el comportamiento del tiempo dedicado al cuidado de la niñez. Las dos primeras lo reducen, mientras que las dos últimas lo incrementan.

Table 4.12.

Estimación Tobit del Tiempo de Cuidado de Personas						
Variable	Coeficiente	Error Típico	t	P > t	Intervalo de Confianza 95%	
Hombre	-3.8706670	0.1658004	-23.35	0.000	-4.1956780	-3.5456560
Niño	-1.6696470	0.2897171	-5.76	0.000	-2.2375660	-1.1017270
Unido-casado	1.1743890	0.1762326	6.66	0.000	0.8289277	1.5198500
Menores 6 años en Hogar	0.8464503	0.0583250	14.51	0.000	0.7321183	0.9607823
Rural	-0.5256437	0.1529992	-3.44	0.001	-0.8255612	-0.2257263
Edad Cuadrada	-0.0009105	0.0002812	-3.24	0.001	-0.0014617	-0.0003592
ln Ingreso del Hogar	-0.1652479	0.0888587	-1.86	0.063	-0.3394337	0.0089380
Edad	0.0445207	0.0247253	1.80	0.072	-0.0039472	0.0929886
Ingreso del Hogar	-0.0000043	0.0000278	-0.15	0.878	-0.0000588	0.0000503
Constante	-2.0983930	0.7885966	-2.66	0.008	-3.6442440	-0.5525419
Sigma	4.1942610	0.0917088			4.0144880	4.3740330
Obs. summary:						
	6695 left-censored observations at tcperson<=0					
	1447 uncensored observations					
	0 right-censored observations					
r(rho)^2 = 0.33316378						

Taken as a whole, this model explain 33.3% (R^2 corrected = 0.3316378) of the variation in the dependent variable, which, although a higher coefficient than the previous model, still represents a very low explanatory capacity. Nevertheless, we

must bear in mind that a small value for R^2 does not necessarily imply that it is not a good model.

In summary, in Nicaragua, the people who invest most time in care of persons are women, older than 17 years, married or partners, members of households which include a member less than years, and those residing in rural areas.

5. WHAT IS THE VALUE OF UNPAID CARE WORK IN NICARAGUA?

This section provides an estimate of the value of *unpaid care work* and some of its components, in order to arrive at an approximation of this hidden cost of production, which is not recognised in the SNA, and to make visible women's contribution to the national economy.

The following procedure was followed:

- ♣ Se consideró la población entre 15 y 64 años.
- ♣ The number of hours devoted annually to care work and childcare by men and women was calculated, by multiplying by 365 the daily number that the survey indicated for each sex.
- ♣ The methods to be used to estimate the value of care work and childcare were selected.
- ♣ Hourly pay for care work and childcare was calculated according to each method.
- ♣ The number of hours dedicated to care work and childcare annually was multiplied by the rate of remuneration determined by each method of estimation.

The estimation methods used were median income and the generalist or replacement cost approach.

The *median income* method (as its name suggests) uses the median income for the entire population. For purposes of the present document, median income was calculated on the basis of the data in the economic activity section of the 1998 EMNV. The income of the employed population was considered, regardless of whether this involved wage workers, own-account workers or business owners. Only unpaid workers and those not reporting labour income were excluded. Recognizing income differences by sex, the figures were calculated separately for men and women.

Though we realise that respondents tend to seriously understate their income, we did not adjust the 1998 EMNV data to reflect this. This decision was based on the difficulties involved in determining the magnitude of the overall adjustment required, as well as the impossibility of identifying individual incomes that were understated in a survey of this type.

The *generalist* or *replacement cost* method is based on the cost of replacing unpaid care work by the paid services of a person responsible for performing all such work. The services of this person are assumed to be remunerated at the median wage for the occupation involved. The occupation chosen for this purpose was domestic work; thus, the figure used was the median wage for domestic employees.

In determining remuneration of domestic employees, both monetary and estimated in-kind payment were considered, since the latter component represents a significant element in this occupation. In this case, we also used the median and the adjusted average⁹ of the reported remuneration.

As Table 5.1. shows, in this case the value of *unpaid care work* is between C\$11,606.76 million and C\$20,531.37 million, according to the approach and statistic used. The estimated value for unpaid care for persons is between C\$2,060.61 million and C\$3,629.39 million.

Women account for approximately 79% of the value of unpaid care work and 87% of the value of care of persons.

Table 5.1.

Estimate of the value of unpaid care work and unpaid care for persons among the 15-64 year old population, 1998

Millions of córdobas

Methods	UCW			Care for persons		
	Total	Men	Women	Total	Men	Women
<i>Approach using average income of those employed, by sex</i>						
Total value (adjusted average)	20'531.37	4'417.16	16'114.21	3'629.39	493.22	3'136.18
<i>Generalist approach (Wage of female domestic worker)</i>						
Total value (median)	11'606.76	2'390.46	9'216.30	2'060.61	266.92	1'793.69
Total value (adjusted average)	13'192.78	2'717.11	10'475.67	2'342.18	303.39	2'038.79

Source: Author, based on CEPAL-CELADE, Demographic Bulletin No. 76, July 2005; Central Bank of Nicaragua (BCN), Economic Indicators, June 2005; author's calculations, Time Use Section of the EMNV 1998, INEC

UCW: Unpaid care work

As a method of assessing the meaning of the different estimates of *unpaid care work* and *unpaid care for persons*, we now examine these in relation to some key economic variables.

Comparison with gross domestic product (GDP)

As Table 5.2. indicates, the value of *unpaid care work* is equivalent to 30.7% of GDP if the median wage of domestic employees is used as a measure of value, and 54.3% if the average income of employed men and women is used. The estimated value of *unpaid care for persons* represents between 5.5% and 9.6% of GDP, according to the approach and statistic selected. The estimated value of care of persons done by women aged 15-64 years is equivalent to 4.7% and 8.3% of GDP.

⁹ The adjusted average is calculated without including the extreme values (2.5% at each extreme).

Table 5.2

Value of unpaid care work and unpaid care for persons among the 15-64 year old population in relation to GDP, according to selected approaches, 1998

Approaches	percentage					
	UCW			Care for persons		
	Total	Men	Women	Total	Men	Women
Average income approach	54.3	11.7	42.6	9.6	1.3	8.3
Generalist approach						
Median	30.7	6.3	24.4	5.5	0.7	4.7
Average	34.9	7.2	27.7	6.2	0.8	5.4

Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998, INEC

Comparison with the value of paid work

Based on the data from other sections of the 1998 EMNV, we now examine the value of *paid work*. For this purpose, we have considered only monetary income received by men and women as wage-earners, as own-account workers and as business owners. Unpaid workers are not included.

As shown in Table 5.3., the value of *unpaid care work* is either almost the same as (107.4% of) or approximately double (190.0% of) the value of *paid work*, according to which estimating method is used. On the other hand, the value of *unpaid care for persons* represents between 19.1% and 33.6% of the value of *paid work*. Comparing these two types of work by sex, however, reveals major differences.

For men, the value of *unpaid care work* represents between 22.1% and 56.5% of the value of *paid work*. Among women, on the other hand, the figure is between 85.3% and 539.6%.

The value of *unpaid care for persons* provided by men represents only between 2.5% and 6.3% of the value of *paid work*, while the value of this type of work done by women is between 16.6% and 105.0%.

Table 5.3

Value of unpaid care work and unpaid care for persons among the 15-64 year old population in relation to the value of paid work, according to selected approaches, 1998

Approaches	percentage					
	Unpaid care work			Care for persons		
	Total	Men	Women	Total	Men	Women
Average income approach	190.0	56.5	539.6	33.6	6.3	105.0
Generalist approach						
Median	107.4	22.1	85.3	19.1	2.5	16.6
Average	122.1	25.1	96.9	21.7	2.8	18.9

Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998, INEC

Comparison with tax revenue

Table 5.4. shows the value of *unpaid care work* and *personal care* as a percentage of total tax revenues, and as a percentage of income tax revenue alone. As may be seen, the value of *unpaid care work* in 1998 represented between approximately 2 and 4 times the value of total tax revenue. When the comparison is with income tax revenue, the factor is enormously greater: between 1,562.7% and 2,764.2%, due primarily to the relatively low importance of income tax (and direct taxes in general) in the Nicaraguan tax system.

The value of *unpaid care for persons* represents between 38.9% and 68.6% of total tax revenue, and between 277.4% and 488.6% of income tax revenue.

Table 5.4.

Value of unpaid care work and unpaid care for persons among the 15-64 year old population in relation to tax revenues, 1998				
percentage				
Approaches	Total tax revenues		Revenue from income taxes	
	UCW	Care for persons	UCW	Care for persons
Average income approach	388.0	68.6	2'764.2	488.6
Generalist approach				
Median	219.3	38.9	1'562.7	277.4
Average	249.3	44.3	1'776.2	315.3
Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998, INEC				

Comparison with central government spending on remuneration for care workers

Table 5.5. shows the value of *unpaid care work* and *unpaid care for persons* as a percentage of the amount budgeted by the central government in 1998 for salaries in the Ministry of Education, Ministry of Health and Ministry of Social Affairs.

In 1988, the national territory was demarcated into regions, departments and municipalities, all of which were subordinate to the executive branch both administratively and financially. The Municipal Law of 2 July 1988 established the competencies of these entities, which did not include education, health or social security.

Taking the smallest estimate of the value of *unpaid care work* (the median under the generalist approach), we find that it represents 4,353.1%, 2,894.5% and 360,890.5% of salaries for the Ministries of Education, Health and Social Affairs¹⁰,

¹⁰ Water and sanitation, environmental management, education, road infrastructure and eventually health.

respectively. If the same calculation is made for *unpaid care for persons*, the resulting figures are 772.8%, 513.9% and 64,070.7%.

These enormous magnitudes largely reflect the central government's low level of social spending (one of the lowest in Latin America), particularly in the areas studied; and confirm the assessment of the political social regime in Nicaragua as residual and its welfare regime as highly familialist.

Table 5.5.

Value of unpaid care work and unpaid care for persons among the 15-64 year old population in relation to central government spending on care worker remuneration, 1998						
Selected approaches	Education remuneration		Health care remuneration		Social welfare remuneration	
	UCW	Care for persons	UCW	Care for persons	UCW	Care for persons
Average income approach	7'700.3	1'361.2	5'120.2	905.1	638'384.4	112'849.1
Generalist approach						
Median	4'353.1	772.8	2'894.5	513.9	360'890.5	64'070.7
Average	4'948.0	878.4	3'290.0	584.1	410'204.7	72'825.8
Source: Author's calculations, based on data from the Time Use Section of the EMNV 1998, INEC						

6. IN CONCLUSION

The data analysed clearly point to a set of patterns—a number of which were to be expected—in the ways Nicaraguans from 15 to 64 years old distribute their time between *paid work* and *unpaid care work*. Among these we highlight the following:

- ♀ More men than women participate in *paid work* and dedicate more time to it.
- ♀ More women, on the other hand, engage in *unpaid childcare*, and they devote more hours per day to it than do men.
- ♀ Area of residence barely influences the participation of men in paid work, but does so for women. Urban women residents engage more and devote more time to paid work than rural women.
- ♀ Urban men's participation in *unpaid care work* is slightly higher than the rate for rural men, though the number of hours per day is the same for the two groups.
- ♀ More men and women in the 18-49 age group engage in *paid work*, and they devote more time to it.
- ♀ Men engage in *unpaid care work* more in the declining phase of their work lives. In contrast, women do so more at the peak of their labour capacity, suggesting competing pressures in terms of time use.

- ♀ Being in conjugal unions increase the probability of women's being involved in *unpaid care work*, and decreases their likelihood of doing *paid work*. For men, the pattern is the reverse.
- ♀ The presence of children under age 6 in the household seems to impel men toward *paid work*, and to prevent women from performing it. Nevertheless, the presence of these younger children in the household does not affect the time that men spend on unpaid care work, but instead on that invested by women.
- ♀ Being employed does not free women from their responsibility for *unpaid care work*. Although they devote least time to this work in comparison with other women, the number of hours per day they spend (approximately 4) is hardly negligible, indicating that employed women face a work overload.
- ♀ Household income levels are positively correlated with men's and women's rates of participation in *paid work*. The opposite is true in regard to women in *unpaid care work*. That is, at high levels of household income the involvement of men and women in paid work is greater, with less involvement in unpaid care work, which could be associated with the presence of domestic workers in the household and/or the use of nursery or pre-school services for the care of the children.

The multiple regression analysis confirmed that the amount of time spent on unpaid care work and care of persons depends on sex, area of residence, marital status and the presence of children under six years of age in the household. Sex is the most influential factor in both cases.

The above suggests the persistence of traditional conceptions of gender that assign to men the role of household provider and to women that of carer, despite the fact that a significant proportion of women – including those with partners and children – are involved in paid work and play the role of providers for the household, given the need to have an additional income to satisfy household needs. However, men – especially those between 18 and 49 years – do not participate equivalently in unpaid care work, resulting in employed women being overburdened with work.

One surprising finding was the small time spent by men and women on care of person. Given the age structure of the Nicaraguan population and the almost non-existent supply of care services, whether public or market, this suggest that a large proportion of younger people care for themselves. From an ethical perspective, which recognizes and promotes the rights of the child, new efforts are required for the labour market workforce. This does not simply concern training in the use of new technologies, but also new personal and emotional skills to enable rapid adaptation to the changes caused by globalization. In other words, generational reproduction requires more care work [than before] to avoid exclusion.

The most conservative estimate of the value of unpaid care work is equivalent to 30.7% of GDP, 80% of which is accounted for by women. However, the capacity of women to absorb the costs of economic policies or the growth in demand for care is not infinite. If we want to formulate public policies that have sustainable human development as their objective, we cannot ignore this reality. The need thus arises to continue generating information and analysis of the use of time of Nicaraguans,

which can influence decision-making and improvement of the relationship between the state and Nicaraguan society.

BIBLIOGRAPHY

- Carrasco, Cristina (2006). "La economía feminista: una apuesta por otra economía" (mimeo).
- Picchio, Antonella (1999). "Visibilidad analítica y política del trabajo de reproducción social," in Cristina Carrasco (ed.), *Mujeres y economía*, Madrid, Icaria.
- _____(1994). "El trabajo de reproducción, tema central en el análisis del mercado laboral," in C. Borderías, C. Carrasco, C. Alemany (comp.), *Las mujeres y el trabajo. Rupturas conceptuales*, Madrid, Icaria.
- Rodríguez Enríquez, Corina (2005). Economía del Cuidado y Política Económica: Una aproximación a sus interrelaciones (Preliminary version). ECLAC. Document for the 38th meeting of the Presiding Officers of the Regional Conference on Women in Latin America and the Caribbean. Mar del Plata, Argentina, September 7-8, 2005.
- System of National Accounts (1993). Brussels/Luxemburg, New York, Paris, Washington, D.C.

Annex 1: Summary of calculations of estimated values of unpaid care work and childcare among population 6 years old and older

Methods	Unpaid care work			Childcare		
	Total	Men	Women	Total	Men	Women
Estimation of total time						
Population of 6 years and older	4'225'709	2'102'310	2'123'399	4'225'709	2'102'310	2'123'399
Rates of participation	59.3	38.4	79.9	15.6	5.5	25.5
Population carrying out care work	2'505'214	807'465	1'696'118	657'311	115'076	541'447
Average hours per day	4.300597187	2.471067864	5.168337593	2.747613803	2.149299720	2.874303084
Total hours per day	10'773'917.09	1'995'300.74	8'766'110.11	1'806'036.95	247'332.48	1'556'284.15
Total hours per year	3'927'914'962.62	728'284'771.86	3'199'630'190.76	658'320'072.05	90'276'356.79	568'043'715.25
Approach using average income of those employed, by sex						
Adjusted average per hour		5.95	5.63		5.95	5.63
Total value (adjusted average)	22'347'212'366.57	4'333'294'392.57	18'013'917'974.00	3'735'230'439.79	537'144'322.91	3'198'086'116.88
Generalist approach (Wage of female domestic worker)						
Median per hour	3.22	3.22	3.22	3.22	3.22	3.22
Total value (median)	12'647'886'179.65	2'345'076'965.39	10'302'809'214.26	2'119'790'631.99	290'689'868.87	1'829'100'763.12
Adjusted average per hour	3.66	3.66	3.66	3.66	3.66	3.66
Total value (adjusted average)	14'376'168'763.20	2'665'522'265.01	11'710'646'498.19	2'409'451'463.69	330'411'465.86	2'079'039'997.83
GDP 1998	37'804'500'000.00					
Percentage of GDP 1998						
Average income approach, by sex						
Value (adjusted average)	59.1	11.5	47.7	9.9	1.4	8.5
Generalist approach						
Value (median)	33.5	6.2	27.3	5.6	0.8	4.8
Value (adjusted average)	38.0	7.1	31.0	6.4	0.9	5.5

Source: Author, based on CEPAL-CELADE, Demographic Bulletin No. 76, July 2005; Central Bank of Nicaragua (BCN), Economic Indicators, June 2005; author's calculations, Time Use Section of the EMNV 1998, INEC.

Annex 2: Summary of calculations of estimated values of unpaid care work and care for population 15 to 64 years old

Methods	<i>Unpaid care work</i>			<i>Care for persons</i>		
	Total	Men	Women	Total	Men	Women
<i>Estimation of total time</i>						
Population 15 to 64 years old	2'721'524	1'348'601	1'372'923	2'721'524	1'348'601	1'372'923
Rates of participation	70.8	50.8	90.1	22.5	7.9	36.5
Population carrying out care work	1'926'839	685'089	1'237'004	607'656	106'539	501'117
Average hours per day	5.15302306	2.96883488	6.33923395	2.88752313	2.13165138	3.04550975
Total hours per day	9'929'045.76	2'033'917.03	7'841'655.37	1'753'261	227'105.03	1'526'156.39
Total hours per year	3'604'583'927.32	742'379'717.74	2'862'204'209.58	639'940'417	82'893'334.86	557'047'081.76
<i>Approach using average income of those employed, by sex</i>						
Adjusted average per hour		5.95	5.63		5.95	5.63
Total value (adjusted average)	20'531'369'020.49	4'417'159'320.58	16'114'209'699.91	3'629'390'412.72	493'215'342.44	3'136'175'070.28
<i>Generalist approach (wage of female domestic worker)</i>						
Median per hour	3.22	3.22	3.22	3.22	3.22	3.22
Total value (median)	11'606'760'245.97	2'390'462'691.14	9'216'297'554.83	2'060'608'141.51	266'916'538.26	1'793'691'603.25
Adjusted average per hour	3.66	3.66	3.66	3.66	3.66	3.66
Total value (adjusted average)	13'192'777'173.99	2'717'109'766.94	10'475'667'407.05	2'342'181'924.83	303'389'605.60	2'038'792'319.22
<i>GDP 1998</i>	37'804'500'000.00					
<i>Percentage of GDP 1998</i>						
<i>Average income approach, by sex</i>						
Value (adjusted average)	54.3	11.7	42.6	9.6	1.3	8.3
<i>Generalist approach</i>						
Value (median)	30.7	6.3	24.4	5.5	0.7	4.7
Value (adjusted average)	34.9	7.2	27.7	6.2	0.8	5.4

Source: Author, based on CEPAL-CELADE, Demographic Bulletin No. 76, July 2005; Central Bank of Nicaragua (BCN), Economic Indicators, June 2005; author's calculations, Time Use Section of the EMNV 1998, INEC

Volumen de Trabajo de la Población de 15 a 64 años (Tiempo Promedio Actores)			
	Total	Hombres	Mujeres
Población de 15 a 64 años	2,721,524	1,348,601	1,372,923
Tasa de Participación			
SCN	53.9	74.9	33.7
Trabajo Remunerado	42.9	60.1	26.3
Trabajo No Remunerado	9.7	12.9	6.6
Cuidado No Remunerado	70.8	50.8	90.1
Cuidado de Personas	22.5	7.9	36.5
Tareas Domésticas	62.0	35.9	87.1
Acarreo Agua y Leña	25.5	23.5	27.5
Tiempo Promedio Actores			
SCN	8.22888595	8.53208979	7.57970263
Trabajo Remunerado	8.76897053	8.96253019	8.34329349
Trabajo No Remunerado	6.37836096	7.06417840	5.08333333
Cuidado No Remunerado	5.15302306	2.96883488	6.33923395
Cuidado de Personas	2.88752313	2.13165138	3.04550975
Tareas Domésticas	4.13991089	2.46851852	4.80470738
Acarreo Agua y Leña	1.70226797	1.92405976	1.51969890
Total Tiempo por Día			
SCN	12,070,964.62	8,618,282.24	3,506,939.30
Trabajo Remunerado	10,238,069.45	7,264,213.19	3,012,585.98
Trabajo No Remunerado	1,683,809.66	1,228,951.79	460,615.67
Cuidado No Remunerado	9,929,045.76	2,033,917.03	7,841,655.37
Cuidado de Personas	1,768,154.29	227,105.03	1,526,156.39
Tareas Domésticas	6,985,457.45	1,195,127.71	5,745,545.64
Acarreo Agua y Leña	1,181,354.60	609,775.40	573,768.13
Fuente: Elaboración propia con base en CEPAL-CELADE, Boletín Demográfico No. 76, julio 2005; cálculos propios de la Sección Uso del Tiempo de la EMNV 1998, INEC.			