



ACCOUNTING FOR UNPAID CARE WORK IN BHUTAN 2019

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ACCOUNTING FOR UNPAID CARE WORK IN BHUTAN

National Commission for Women and Children
Royal Government of Bhutan

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MESSAGE FROM THE CHAIRPERSON

As we enter into a new era of development towards graduating to a lower middle income country from a least developed country status, we feel proud because we have come this far with the blessings and guidance of our farsighted visionary kings. We have achieved societal well-being through a cautious balance between economic development and social progress. One of the reasons for our success is the preservation of our traditional social safety nets through the extended family system. In fact, our Constitution mandates the State to promote those conditions that are conducive to co-operation in community life and the extended family structure.

The family members who are better placed have always taken the responsibility to support relatives in needy conditions especially the education of the children. At the household level, women like in many countries across the globe, have taken up the domestic and unpaid care work. However, with the changing family structure from the traditional extended family to the nuclear family system, it is becoming extremely difficult for women alone to take up the responsibility of household care and maintenance work. Therefore, the larger question is what if such a social support system declines (which is already on the decline) and what would be the cost if the government has to take up the responsibility?

Looking deeper into the gender relations in performing unpaid work and specifically care work, studies have consistently shown that women bear a substantial proportion of the burden. Double or triple burden has been identified as a key impediment for gender equality across all sectors including the economy. What we all know is that unpaid work has never been accounted in any measure of progress or national accounting system and what is not measured remains invisible and left out of the policy agenda. Recognizing the value of unpaid care work in achieving inclusive and sustainable growth, we need to focus on redistributing and reducing the onus of such work falling unequally on one member of the family.

The first step in gearing towards valuing these activities is through recognition and better understanding of how implicit gender roles assigned can have a larger impact at the societal level. Moreover, what are the strategic interventions that the state can provide to redistribute and reduce the burden of unpaid care work? This study “Accounting for Unpaid Care Work in Bhutan” is the first of its kind undertaken in the country and provides significant findings that need interventions.

I would like to congratulate NCWC and ADB for coming up with this timely report. I hope, through the findings, we can better understand the gender division of labour more comprehensively and recognize the value and contribution of unpaid care work which has remained invisible for a long time.



(Dr. Tandi Dorji)

Chairperson

National Commission for Women and Children

MESSAGE FROM THE COUNTRY DIRECTOR, BHRM-ADB

Unpaid care work is intrinsic in daily life and the overall well-being of individuals, families, and society. However, it is excluded in the System of National Accounts of the United Nations despite its economic value and significant contribution to human development. The omission of unpaid care work in the formal definition of “work” and policy discussions perpetuates imbalances in economic and power relations accentuating gender inequality.

Women across regions and regardless of culture and socioeconomic status predominantly perform unpaid care work. This disproportion has severe impacts on women’s self-care and their participation in public life, employment in formal sector, education, and _ skills development. To address and narrow the gender gap on unpaid care work, numerous international treaties have been ratified and initiatives have been taken to recognize its economic value as well as redistribute and reduce the burden on women. The Sustainable Development Goal 5 on gender equality and the empowerment of women and girls also calls for actions to recognize and value unpaid domestic and household work.

With support from the Asian Development Bank's Technical Assistance 9016 (BHU): Decentralized Coordination and Partnerships for Gender Equality Results, this report seeks to determine the patterns of unpaid care work in Bhutan and its value in terms of monetary contribution. As the first-of-its-kind in the context of Bhutan, this report contributes to the growing literature attempting to measure the economic value of unpaid care work in the country and inform discussions about gender policies.

This report finds that in Bhutan, women-regardless of socioeconomic status, educational attainment, and employment-spend more time on unpaid work than men. The country data forms part of global patterns that show the same trend between men and women.

Women’s engagement in unpaid care work may lead to time poverty, as they are compelled to take on essential activities. Doing so tend to leave them with very little or no discretionary time for themselves. This is particularly concerning in situations where their unpaid care work impede employment opportunities in the formal sector or they work for long hours but do not earn sufficient income.

I hope this report serves to further recognize the value of unpaid care work and, more importantly, support policymaking. While there still is no consensus on how to best measure and evaluate unpaid care work, data and evidences presented in this report highlight the significant socioeconomic contributions of women through their unpaid care work. It is my wish that the insights in this report will help narrow the gender gap in Bhutan through the recognition, reduction, and redistribution of unpaid care work to increase women’s engagement in the formal sector and participation in public life.



Kanokpan Lao-Araya, Country Director

Bhutan Resident Mission Asian Development Bank

FOREWORD

The NCWC Secretariat is privileged to take lead on this landmark publication, “Accounting for unpaid care work in Bhutan”. The study is first of its kind in the country that attempts to measure the value of unpaid care work and understand the gender dynamics of unpaid care work. Unpaid care work is both an important aspect of economic activity and a crucial factor that contributes to the wellbeing of individuals, families and societies yet it mostly remains invisible and thereby unaccounted for in the national accounting system. Furthermore, the burden of unpaid care work is disproportionately borne by women across the globe which is a key impediment to achieving gender equality.

The Constitution of the Kingdom of Bhutan 2008 provides an overarching foundation within which gender equality is enshrined. However, despite the guarantee of equality through formal legislations and institutions, unequal distribution of the unpaid care and domestic work between men and women constrains the various efforts to promote equality between men and women’s participation in formal employment and public sphere. Bhutanese women also carry out a huge share of unpaid care and domestic work due to the existing socio-cultural norms and practices regarding gender division of roles. This impedes women’s ability to participate in productive employment and avail other opportunities outside of their home. Furthermore, while women spend most of their time on unpaid care responsibilities which are crucial for the survival of their families and communities, it is hardly acknowledged and valued.

Therefore, this study is very timely and provides the much-needed information on the gender dynamics of unpaid care work in the country. The findings highlight the disproportionate amount of unpaid care work carried out by women and provide important recommendations for policy measures to reduce the burden of unpaid care work. The study also serves as an important basis for the government to continue existing measures like the establishment of creches to make childcare affordable and awareness programmes to encourage equal sharing of care and domestic responsibilities within the family.

I am very much happy that Bhutan is one of those few countries in the region to carry out a study on unpaid care work which will contribute to the growing body of literature.

The NCWC remains committed to taking forward the recommendations from this study in collaboration with all relevant organisations and individuals.



(Kunzang Lhamu)

Director

National Commission for Women and Children

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This study was conducted as part of ADB's Capacity Development Technical Assistance (CDTA 9106) titled "BHUTAN: Decentralised Coordination and Partnerships for Gender Equality Results". The report was led by Valerie Mercer-Blackman, Senior Economist, and reviewed by Lakshman Nagraj Rao (statistician) and Kathleen Farrin (economist), all from the Economic Research and Regional Cooperation Department of ADB. The original setup was initiated by Professor Ron Miller from Columbia University and the study was conducted by Joo Yeoun Suh and Changa Dorji. The recommendations were provided by Aimee Hampel-Milagrosa and Valerie Mercer-Blackman and reviewed by the Hon'ble Commission Members of the NCWC. The report was externally peer-reviewed by Dr. Yana Rogers, a professor at Rutgers University. We would like to thank each one of you for your contributions.

Without data from various sources, the study would not have been possible. Therefore, our special thanks goes to Karma Wangdi, Chief, Gross National Happiness (GNH) Division of the Centre for Bhutan Studies & GNH Studies for providing us GNH survey data and inputs for the report besides contributing to the analysis. We would also like to thank the National Statistics Bureau (NSB) for providing us detailed labour and census data and the Ministry of Labour and Human Resources for providing us detailed employment and wage data.

The analysis benefited substantially from the significant participation of and contributions from those in the field and experts in the country. The study benefited from inputs from the Director General, Department of Employment and Human Resources, Resident Representative, UNDP Bhutan, as well as the Executive Director from RENEW. Appendix 1 details the experts consulted, including Members of Parliament. We would like to acknowledge all the inputs and guidance provided in preparing the report.

We would also like to thank those who volunteered to be part of the Focused Group Discussions (FDG) in May 2018. We sincerely thank the participants for coming forward and sharing their views and adding value to the report.

Special thanks to Francesco Tornieri, Principal Social Sector Specialist for South Asia Department, ADB, and Brenda Bautista for their inputs and Jerry Colasito for coordination. We also would like to acknowledge the contribution made by Nidup Tshering and Ngawang Tshering, Project Management Unit housed at NCWC, in terms of assisting with coordination and providing valuable inputs.

The study was commissioned and conducted by the National Commission for Women and Children (NCWC) under the coordination and guidance of Kunzang Lhamu, Director, NCWC, Ugyen Tshomo, Chief Programme Officer, Sonam Gyeltshen, Tshewang Lhamo, and Deki Yangzom, Programme Officers of the Women Division, NCWC.

ABBREVIATIONS

ADB	Asian Development Bank
BLSS	Bhutan Living Standards Survey
CBS	Centre for Bhutan Studies
DRM	Day Reconstruction Methods
GDP	Gross Domestic Product
GSP	General Support Personnel
ILO	International Labour Organisation
LFS	Labour Force Survey
MoLHR	Ministry of Labour and Human Resources
NCWC	National Commission for Women and Children
NGO	Non-Governmental Organisation
NSB	National Statistics Bureau
NWF	National Workforce
PHCB	Population and Housing Census of Bhutan
SDG	Sustainable Development Goals
SNA	System of National Accounts
UN	United Nations

EXECUTIVE SUMMARY

While unpaid care work is increasingly recognised as critical to sustaining people's daily lives and the societies in which they live, it remains invisible to many policymakers, economists, and national statisticians because it falls outside the conventional definitions of work. This invisibility has particular consequences for women as it perpetuates the imbalances in economic and power relations that underlie gender inequality. The Bhutanese society also grapples with these issues.

As articulated in numerous international treaties and documents, addressing this disparity requires the recognition of the economic contributions of both paid and unpaid work. Accordingly, this report has two broad aims. First, it seeks to document the gender patterns of unpaid care work in the country and estimate its monetary value based on data from Gross National Happiness (GNH) Survey, Labour Force Surveys (LFS), and Bhutan Living Standards Survey (BLSS). Second, while admitting that important methodological issues remain to be resolved, this report demonstrates that measuring and valuing unpaid care work is not only feasible, but also necessary in light of the large amount of unpaid care work disproportionately performed by women.

This study, the first of its kind undertaken in Bhutan, contributes to the growing body of scholarly literature that has attempted to measure and value unpaid care work, encompassing other developing nations like Nicaragua and El Salvador and developed countries like the United States and the United Kingdom. While acknowledging that methodological consensus remains to be reached, this study shows that a carefully constructed approach can yield compelling findings. Collectively, they demonstrate that unpaid care work in Bhutan is significant, both in terms of quantity and share of the country's GDP. They also show that, as in other countries, women bear a disproportionate share of the burden. This study's contribution to the time use literature is also noteworthy in that it incorporates data deriving from the country's pioneering efforts to develop GNH index as an alternative measure of societal wellbeing. But whether described in terms of GNH or an expanded GDP, as this study shows, much of society's well-being in the country is made possible by the enormous amount of unpaid care work people carry out. By quantifying the amount and value of that work, findings from the study can be an important tool for policymakers' efforts to

advance economic development by easing the burden disproportionately borne by women.

Some key findings of the study include the following:

Time spent on paid and unpaid work, by gender:

- Estimates based on time use survey data showed that women performed 71 per cent of unpaid care work, 2.5 times more time (218 minutes) than men (87 minutes).
- Men spend 2.5 times (147 minutes) more time on paid work than women (57 minutes).
- About 95 per cent of women were engaged in household maintenance and management activities, while 61 per cent of men participated in them.
- About 33 per cent of women engaged in providing unpaid care services, while only 12 per cent of men did so.

Time spent on unpaid care work, by socio-economic demographics:

- Women spent more time on unpaid household and care work than men regardless of income, age cohorts, residency, the number of people in the household, and employment status.
- Women in higher income quintiles spent more time on unpaid household and care work than those in low income

quintiles.

- As income went up, men were less likely to spend time on unpaid household and care work.

Total value of unpaid care work:

- Estimates based on time use survey data showed that in 2017, women aged 15 and older spent 310 million hours on unpaid household and care work, while men aged 15 and older spent 150 million hours.
- While the value of unpaid household and care work varied depending on the wage rate, the study estimates that it ranged from 10 per cent to 16 per cent of GDP.
- Unpaid work valued on the basis of the national minimum wage rate for semi-skilled workers (Nu 286 per day) would amount to 10 per cent of GDP, which corresponds to Nu 16,287 million. If valued at the wage rate of GSP (Nu 9,000 per month), the total value would amount to 14 per cent of GDP (Nu 23,296 million). If valued at the specialist wage rate, it would total 16 per cent of GDP, equivalent to Nu 25,648 million.
- Women's contribution to unpaid household and care work was at least two times larger than that of men. While women's contribution as a share of GDP was 11 per cent, men's con-

tribution was around 5 per cent using the specialist wage. Calculations based on the generalist wage method (semi-skilled labour wage and GSP) showed a similar pattern.

The study provides policy recommendations on three fronts. First, it provides suggestions for modifications/additions to current national surveys and data which would allow a more precise measurement of unpaid care work going forward. Second, it provides recommendations for incorporating the findings into the GNH conceptualisation and unique institutional and policy framework. Finally, it contains recommendations on labour policies that could help narrow the gender gap in unpaid care work as well as maximise the rewards and acknowledge the value of such work.

1. INTRODUCTION

Unpaid work for family members and friends (housework and care work) comprises a set of essential activities necessary to produce goods and services to sustain daily life as well as to reproduce society for the future. Broadly, these activities include cooking, cleaning, and caring for children, the sick, and the elderly. Throughout the world, women remain the primary providers of unpaid care which is still viewed by many people as the natural duty of women.¹ While the implications of unpaid care work for wellbeing, gender equality, and women's empowerment are important, it remains statistically invisible to many policymakers, economists, and national statisticians because it falls outside the conventional definitions of what counts as work. Therefore, it is excluded from conventional national income accounts (i.e., Gross Domestic Product, GDP). This invisibility has particular consequences for women as it perpetuates the imbalances in economic and power relations that underlie gender inequality.

Yet, unpaid care plays a fundamental role in human capabilities and development. The UN Human Development Report, for example, shows that human development prospers not only by expanding income, schooling, health, and a clean environment,

but also by care.² In line with this finding, Bhutan has acknowledged the role of unpaid care work as a cornerstone of human development and wellbeing, making it an important component in the country's measure of Gross National Happiness (GNH).³ Given Bhutan's leading role in the United Nations' call for a holistic approach to development that includes happiness, the country's incorporation of unpaid care work into the measurement of GNH has the potential to draw international attention to the importance of care work in promoting happiness.

Despite this recognition, unpaid care in Bhutan is still characterised by a strong gender imbalance, in part driven by the country's strong familistic orientation under which the primary responsibility for the care of children and the elderly is assigned to women. Moreover, women often carry a double burden of taking on both paid and unpaid work responsibilities. Thus, women's unpaid care work for their families and communities is a key dimension of gender inequality and shapes the larger process of economic development. Women's relatively greater total work burden than men's help to explain why earlier research has shown that women in Bhutan score lower on GNH than men (Asian Development Bank

¹*Gender, Development, and Globalization: Economics as if People Mattered*, Beneria, Loudes, New York: Routledge, 2003.

²Human Development Report, UN 1999.

³Centre for Bhutan Studies and GNH Research, 2015.

(ADB) and Royal Government of Bhutan (RGoB) 2014).⁴

As articulated in several international treaties and documents, achieving gender equality and human well-being requires the recognition of economic contributions of all forms of work – paid and unpaid. The Organisation for Economic Cooperation and Development (OECD) argues that the documentation of unpaid care will increase understanding of who contributes to human wellbeing, to what extent, and which type of policies are required to recognise, reduce, and redistribute unpaid care work.⁵ The Beijing Declaration and Platform for Action adopted at the UN's Fourth World Conference on Women represented a political milestone in this regard by pushing for recognition of the full extent of women's work and all their contributions to national economies.⁶ Further, one of the targets of the Gender Equality goal in the UN Sustainable Development Goals (SDGs) is to 'recognise and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies, and promotion of shared responsibilities within the household

and the family as nationally appropriate.⁷

To support the government's efforts in meeting those goals, this report documents the gender patterns of unpaid care work in the country and estimates the monetary value of unpaid care work based on the data used to compute GNH collected by the Centre for Bhutan & GNH Studies (CBS), Labour Force Surveys (LFS), and Bhutan Living Standards Survey (BLSS). In particular, this report utilises data derived from time use surveys, which provide information on how people spend their time on a given day through time diary instruments. This study improves on the previous NCWC and ADB report (2014), *Bhutan: Gender Equality Diagnostic of Selected Sectors*, by expanding the time use analysis and estimating the economic value of women's work. A brief review is provided on research on measuring and valuing unpaid care work, methods of estimating the amount of time devoted to it, and imputation of its monetary value. In the section that follows, a review of how other countries have utilised the measurement and valuation of unpaid care work is provided. The data and methods drawn from the GNH survey, LFS, and BLSS is described, followed by a presentation of the analysis and conclusions.

⁴Bhutan: Gender Equality Diagnostic of Selected Sectors, Asian Development Bank and Royal Government of Bhutan, 2014. Available at <https://www.adb.org/sites/default/files/institutional-document/149350/gender-equality-diagnostic-bhutan.pdf>

⁵Unpaid care work: The missing link in the analysis of gender gaps in labour outcomes, OECD Development Centre, 2014.

⁶Action for Equality, Development and Peace, The UN Fourth World Conference on Women, Beijing, 1995.

⁷<http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-5-gender-equality/targets.html>

2. MEASUREMENT AND VALUATION OF UNPAID CARE WORK

2.1 Measuring Unpaid Care Work

Unpaid care work is a crucial aspect of the ‘process of social reproduction’, meaning the process through which individuals, families, and society thrive. Unpaid care work involves time and energy spent on human wellbeing. Yet, currently there is no consensus on a single definition of unpaid care work.

The neoclassical economic theory defines work as an activity that yields no utility (or process benefits) and is undertaken only to enjoy results (increased income or consumption). From this viewpoint, unpaid work is not considered work because it does not involve remuneration or consumption. In terms of intrinsic satisfaction, some people certainly get satisfaction by caring for children, cooking, or gardening. While some people argue that the time spent on paid work is or can be enjoyable, not all housework and care work is enjoyable and can often be monotonous. Therefore, the level of enjoyment or satisfaction is not an appropriate criterion to distinguish between work and non-work.

A more appropriate way to define unpaid care work is to follow Margaret Reid’s ‘third-person criterion’. Margaret Reid, a pioneer of research on household production in the 1930s, defines work as an activity that one

can pay a person to perform.⁸ She noted that:

[i]f an activity is of such character that it might be delegated to a paid worker, then that activity shall be deemed productive. ... [H]ousehold production...consists of those unpaid activities which are carried on, by and for the members, which activities might be replaced by market goods, or paid services, if circumstances such as income, market conditions, and personal inclinations permit the service being delegated to someone outside the household group (p. 11).

According to the third-person criterion, many forms of housework, including childcare, are considered work if someone else (a third person) could, in principle, be hired to perform it on one’s behalf. Another criterion is whether an activity creates a transferable benefit. By either criterion, the time devoted to unpaid care represents work.

Time use data make it possible to measure time devoted to unpaid care work, but such data also have limitations. First, because time use surveys are primarily intended to measure explicit activities such as meal preparation, house cleaning, or feeding a child, they are based on activities – primary

⁸Reid, Margaret, *The Economics of Household Production*. New York: John Riley, 1934.

and secondary activities. The primary activity is a response to the question: 'What were you doing?' The secondary activity is a response to the question: 'What else were you doing during the primary activity?' But neither question accounts for supervisory care, which can be thought of as on-call time.⁹

Neither primary nor secondary activities are adequate enough to capture the time devoted to supervisory care because it typically represents constraints rather than activities. That is, while being present to keep an eye on or an ear open for dependents, the care provider's ability to engage in another activity is constrained. Even though infants sleep most of the time during the day, they wake up at random times which requires adults' immediate attention. Likewise, a care provider caring for an infirm adult must similarly be on call.

Second, few time use surveys include all adult members of the household. While time use surveys can be used to construct approximate measures of the total value of unpaid care work, measuring the value of unpaid care work across different types of households is difficult when data from only one adult providing unpaid care are captured. The impact of additional household members on unpaid childcare is not trivial and has been documented and

investigated by various studies.¹⁰

Third, time use surveys are often conducted independently of other household surveys, such as those on consumer expenditures or household wealth. As a result, efforts to combine the analysis of time use and household expenditures have been quite limited.¹¹ The general lack of household expenditure data distorts our understanding of the substitutability of time and money within the household, which also relates to economic growth and inequality in living standards. Therefore, the unavailability of expenditure data for joint analysis of time use and expenditures can deter efforts to improve measurement of unpaid care work and transfers of both time and money.

With these methodological and technical limitations in mind, unpaid care work in this report is defined broadly to include both caring for children and other dependent household members such as the elderly, sick, and persons with disabilities besides activities necessary to maintain

¹⁰Varjonen, Johanna and Kristiina Aalto. 2006. 'Household Production and Consumption in Finland 2001 - Household Satellite Account.' Statistics Finland Report. Available at https://helda.helsinki.fi/bitstream/handle/10138/152276/Household_production_and_consumption_in_Finland_2001.pdf?sequence=1 and Craig, Lyn and Michael Bittman. 2008. 'The Incremental Time Costs of Children: An Analysis of Children's Impact on Adult Time Use in Australia.' *Feminist Economics* 14(2): 59-88.

¹¹Gronau, Reben and Daniel S. Hamermesh. 2006. 'Time vs. Goods: The Value of Measuring Household Production Technologies.' *Review of Income and Wealth* 52(1): 1-16 and Ironmonger, Duncan. 1989. 'Households and the household economy.' *Households Work: Productive Activities, Women and Income in the Household Economy* 3-17.

⁹Folbre, Nancy, *Valuing Children: Rethinking the Economics of Family*, 2008.

households, such as cooking and cleaning. The word unpaid underlines that the person carrying out an activity does not receive remuneration for it, making it fall outside the production boundary of the System of National Accounts (SNA). The word care means that the activity serves people and their wellbeing. The word work emphasises that the activity has a cost in terms of time and energy.¹²

The operational criteria used for recognising unpaid care work in this report is based on the third-party principle, which states that if a third party can be hired to do the job on, then it can be defined as unpaid care work. For instance, leisure is an activity that you cannot pay someone else to do for you. So it is with sleeping and eating. Such activities are categorised as personal activities and not productive activities. Following such conceptual distinctions, two broad activities are adopted from the time use data in the GNH Survey – household maintenance and management and unpaid care services – as constituting unpaid care work.

Although volunteering work falls under unpaid care work based on the operational criteria, this type of unpaid work is excluded due to its focus on unpaid caregiving for household members. This study, nonetheless, acknowledges the importance of volunteering work in the

country where women carry the burden of a disproportionate share of community labour. Women are considered to be more ‘available’ for tasks such as maintaining farm roads because their unpaid care work is not seriously considered work.¹³

2.2 Valuing Unpaid Care Work

2.2.1 Methodology of Valuing Unpaid Care Work

The total economic value of an activity is equal to the amount of time spent on the activity times the ‘price’ or unit value of that activity per unit of time. However, finding the right unit value is tricky. So, the literature on time use provides a variety of methods of valuing unpaid care work. Specifically, the value of unpaid care work can be determined by an input-based or an output-based approach. An output-based approach determines the cost of given unpaid care work in the market (for instance, the cost of an hour of centre-provided daycare). It assigns a value to the output produced by the unpaid care work by multiplying the quantity of the output by the price of market equivalents. However, this method presents certain conceptual difficulties when defining the output of unpaid care work, such as care work for children. Moreover, the output-based approach is limited by the difficulty

¹²Unpaid Care Work: The missing link in the analysis of gender gaps in labour outcomes, OECD Development Centre, 2004.

¹³Bhutan: Gender Equality Diagnostic of Selected Sectors, Asian Development Bank, 2014. Available at <https://www.adb.org/sites/default/files/institutional-document/149350/gender-equality-diagnostic-bhutan.pdf>

in finding the right data that show both a market price for quality-equivalent outputs and the number of goods and services created by unpaid care work.

The input-based approach focuses on the measurement and valuation of labour inputs of unpaid care work. Other inputs such as capital and raw materials should also be measured, but labour is the most important input. Large-scale, nationally representative time-diary surveys offer good estimates of time devoted to unpaid work in a household, including childcare and care for the elderly. Based on the third-person criterion, they value the work against market wage rates for workers performing similar activities in the labour market.

The two most common methods used to construct market wage rates build on estimates of opportunity cost or replacement cost.¹⁴ Opportunity cost is per hour value of time that a person could have spent in an alternative activity if she/he had not done unpaid care work. For those who work for pay, opportunity cost may refer to forgone earnings, but some imputation might be required for those who do not work for pay. While this measure accurately reflects what an individual gives up to engage in unpaid care work, it does not capture the benefits of the work for others. The replacement cost valuation uses the

wage that would be paid to a person hired to perform the tasks (as described earlier, the third-party criterion). Accordingly, as opposed to opportunity cost valuation, the replacement cost valuation uses the same market wage whether the person earns Nu 1,000 or Nu 100 per hour in his/her market job.

The range of wage rates for purchased substitutes for unpaid care work varies substantially. This is especially true of care work. On one hand (the generalist measure), there are low-paid workers, such as domestic chores workers in the market. On the other (the specialist measure), there are relatively high-wage workers such as nurses and teachers engaged in specialised activities. A specialist approach to valuing household production applies specific wage rates to various tasks. For instance, time spent on preparing meals would be valued at a cook's wage, and time spent on caring for adults with dementia or Alzheimer's disease would be valued at a highly skilled nurse's wage.¹⁵ Since there is no consensus on best-fit wages, a range of wages can provide a lower-bound and an upper-bound estimate. However, the difficulty with both the generalist approach and the specialist approach is that they fail to consider the efficiency and quality of time that individuals spend on housework. For instance, an inexperienced individual would

¹⁴ Abraham, Katherine, and Christopher Mackie. 2005. *Beyond the Market: Designing Nonmarket Accounts for the United States*. Washington, D.C.: The National Academies Press.

¹⁵ Levine, Carol. 2004. *Always on Call: When Illness Turns Families into Caregivers*. Vanderbilt University Press.

spend far more time on tasks like painting or plumbing than an experienced specialist would. Therefore, it is possible that using a specialist wage approach would overstate the value of unpaid care work.¹⁶

Another concern with the replacement cost method is quality control. What is the appropriate quality adjustment? Could a cook's wage equate to a mother's labour? It is possible that the mother is a terrible cook and the value of her labour cannot match a hired cook's wage. Or, she could be a terrific cook and the value of her labour could be higher than a cook's wage. This issue has not been definitively resolved but a 25 per cent deduction in the wage of specialists for some unpaid work like cooking and home repairs has been suggested with the suggestion to pay careful attention to caregiving activities due to lack of perfect substitutes.¹⁷ Some argue that the wage should not be reduced because the skill of a mother cooking for her child is more specialised because she knows her child's preferences and specific dietary needs.¹⁸

¹⁶ Abraham, Katherine, and Christopher Mackie. 2005. *Beyond the Market: Designing Nonmarket Accounts for the United States*. Washington, D.C.: The National Academies Press.

¹⁷ Landefeld, J. Steven, and Stephanie H. McCulla. 2000. "Accounting for Nonmarket Household Production within a National Accounts Framework." *Review of Income and Wealth* 46 (3): 289–307 and Suh, Jooyeoun, and Nancy Folbre. 2016. "Valuing Unpaid Child Care in the U.S.: A Prototype Satellite Account Using the American Time Use Survey." *Review of Income and Wealth* 62 (4): 668–684.

¹⁸ Suh, Jooyeoun, and Nancy Folbre. 2016. "Valuing Unpaid Child Care in the U.S.: A Prototype Satellite Account Using the

In sum, measuring and valuing unpaid work warrants further scrutiny. Unpaid care work does not fall within the purview of conventional definitions of productivity, but analyses of time use data demonstrate its extent and reality –the disproportionate extent to which it is borne by women. This study adopts the input-based replacement-cost method for valuing unpaid care work performed using both the generalist and specialist wages to provide a lower-bound and upper-bound estimate of the value of unpaid care work.

2.2.2 Efforts to Value Unpaid Care Work

Attempts to estimate the value of unpaid care work have a long history, comprising a key aspect of long-term efforts to improve the official National Income and Product Accounts (NIPAs) as a measure of the total value of goods and services produced in a country. A key benchmark drawn from NIPAs is GDP, primarily based on market goods and services that could 'be brought directly or indirectly into relation with the measuring-rod money', as suggested by Arthur Pigou.¹⁹ As useful as this guideline is, NIPA's focus on market transactions is limited because it fails to include household services that also represent productive work. Consequently, the importance of American Time Use Survey." *Review of Income and Wealth* 62 (4): 668–684.

¹⁹ Pigou, Arthur. 1932. *The Economics of Welfare*. London: Macmillan, p. 11.

unpaid care work has been ignored in a large body of economic policy studies.

At present, there is no consensus on the methodology for measuring and valuing unpaid household services. Nonetheless, various efforts have been made across countries and organisations to measure and value unpaid work. This section provides a summary of those efforts, detailing methodological differences among them and the important role that time use data play in all of them.

Unpaid care work is quantitatively significant and measurable using currently available time use data.²⁰ For example, studies using 2003-2010 American Time Use Survey data show that approximately one-half of all work took place outside the market (i.e., 25 per cent of the available time after time for sleep, personal care, and paid work is devoted to unpaid care work).²¹ Numerous other national time use surveys document the substantial magnitude of unpaid household work and the disproportionate share of it done by women, a pattern common to all countries regardless of the level of development. In general, working-age women (ages 25-60) devote about 58

per cent of their time to unpaid care work ranging from a low of about 46 per cent in Latvia to a high of about 69 per cent in Italy, a finding based on the Harmonised European Time Use Surveys (HETUS) for 15 European countries.²² Among non-European countries, OECD (2011) shows that the largest gender gaps in time spent on unpaid work are mostly explained by the relatively small amounts of time that men devote to unpaid work.²³ In particular, men in Korea, India, and Japan spend less than one hour per day on unpaid work, while women in those countries spend at least four times more time. Gendered differences in time spent on unpaid care work in Sub-Saharan Africa are also large.²⁴ For instance, women's involvement in domestic and care activities is much greater than men's: 3.1 times more in Benin and 4.7 times more in Madagascar.²⁵

In theory, an attempt at valuation would estimate the market value of both unpriced inputs and outputs, but due to limited

²⁰Bianchi, Suzanne M., John P. Robinson, and Melissa A. Milkie. 2006. *Changing Rhythms of American Family Life*. Russell Sage Foundation and Folbre, Nancy. 2012. *For Love and Money: Care Provision in the United States*. Russell Sage Foundation.

²¹Aguiar, M., and E. Hurst. 2007. 'Measuring Trends in Leisure: The Allocation of Time Over Five Decades.' *The Quarterly Journal of Economics* 122 (3). Oxford University Press: 969-1006.

²²Folbre, Nancy, and Jayoung Yoon. 2008. *Economic Development and Time Devoted to Direct Unpaid Care Activities: An Analysis of the Harmonized European Time Use Survey (HETUS)*. [http://www.unrisd.org/unrisd/website/document.nsf/ab82a6805797760f80256b4f005da1ab/7783ff26a4dc-0c83c12574e2002f53f3/\\$FILE/folbreyoonDRAFT.pdf](http://www.unrisd.org/unrisd/website/document.nsf/ab82a6805797760f80256b4f005da1ab/7783ff26a4dc-0c83c12574e2002f53f3/$FILE/folbreyoonDRAFT.pdf).

²³OECD. 2011. *Society at a Glance 2011*. <https://www.oecd.org/social/soc/47571423.pdf>.

²⁴Mark Blackden, C, and Quentin Wodon. 2006. *Gender, Time Use, and Poverty in Sub-Saharan Africa*. http://siteresources.worldbank.org/INTAFRRREGTOPGENDER/Resources/gender_time_use_pov.pdf.

²⁵Ibid.

relevant data, many studies have relied on the input method excluding the output method. Time use surveys have facilitated the valuation of unpaid work via the input method, employing either specialist or generalist wages. For instance, the Finland Statistical Office, engaged in developing household satellite accounts since the 1990s, has estimated that for 2006, the gross value of household production in Finland totalled 75 billion euros. This figure, which was calculated using the input method applying a generalist wage (home-helper's wage), would have increased the nation's Gross Domestic Product (GDP) by 39 per cent.²⁶

By contrast, the Hungarian Statistical Office has adopted specialist wages in its valuation efforts. Using 2009–2010 Hungarian time use survey data and a suitable set of specialist wage rates, the office found that including household production in Hungary's 2010 GDP would have increased its value by 25 per cent.²⁷ Some researchers like Landefeld et al. (2000; 2009) have applied both generalist and specialist wages.²⁸ In their

valuation of household production in the US between 1965 and 2004, they found that non-market household services made up 31 per cent of GDP in 1965, which decreased to 19 per cent in 2004. This shift reflects the increase in US women's labour force participation rates from 40 per cent in 1965 to 60 per cent in 2004. In the Latin American countries for which time use survey data and replacement cost estimates are available, the value of unpaid care work as a percentage of GDP ranges from 23 per cent in Nicaragua (1999) to 30 per cent in El Salvador (2009) based on the generalist wage approach.²⁹

Limited relevant data make employing the output-based approach to valuation challenging. Nonetheless, notable efforts by Duncan Ironmonger and others to refine the output method have made it possible to produce output-based estimates in some countries. Among them, the Office for National Statistics (ONS) in the UK has published estimates based on valuing the outputs of household production for the years 2000, 2005, and 2014.³⁰ ONS calculated that the total gross value added of home production was 1,018.9 billion pounds in 2014, which is equivalent to 56.1

²⁶Varjonen, Johanna, and Kristiina Aalto. 2006. *Household Production and Consumption in Finland 2001: Household Satellite Account*. https://www.stat.fi/tup/kantilinpito/2001_household_satellite_account.pdf.

²⁷Hungarian Central Statistical Office. 2016. *Value of Domestic Work and Household Satellite Account in Hungary*.

²⁸Landefeld, J. Steven, and Stephanie H. McCulla. 2000. "Accounting for Nonmarket Household Production within a National Accounts Framework." *Review of Income and Wealth* 46(3): 289–307. Landefeld, J. Steven, Barbara M. Fraumeni, and Cindy M. Vojtech. 2009. "Accounting for Nonmarket Production: A Prototype Satellite Account Using the American Time Use Survey." *Review of Income and Wealth* 55(2): 205–25.

²⁹Durán, María Ángeles, and Vivian Milosavljevic. 2012. *Unpaid Work, Time Use Surveys, and Care Demand Forecasting in Latin America*. www.fbbva.es.

³⁰Holloway, Sue, Sandra Short, and Sarah Tamplin. 2002. *Household Satellite Account Methodology*. <http://www.statistics.gov.uk/hhsa/hhsa/resources/fileattachments/hhsa-ukaccount.pdf> and Office of National Statistics in the United Kingdom. 2016. *Household Satellite Accounts: 2005 to 2014*.

per cent of the UK's GDP, up from 52.5 per cent in 2005.³¹

Even with conceptual and empirical barriers the output-based approach faces, the statistical offices of Canada, Finland, and the UK have adopted it. But neither the US nor Korea has yet followed suit. In the UK, Holloway et al. (2002) estimated the output of childcare provided by households by subtracting from 24 hours the time children spent in school and in the formal care sector.³² The output was valued at the wage of a live-in nanny, divided by the average number of children. They noted that the wage of a live-in nanny is lower than expected because she often receives the additional compensation of housing and food. Taking these factors into account, they showed that the value of informal childcare, measured as a share of GDP in 2000 in the UK, ranged from 19 per cent to 25 per cent.

Perhaps the most useful lesson to be drawn from other countries' efforts is that a perfect method of valuation does not exist. Therefore, it is important to be mindful of the strengths and weaknesses of the various methods. Going forward, valuation efforts

³¹It is important to note that estimates resulting from output approaches can be much larger than those employing input approaches because output-based approaches include the cost of raw materials, intermediate materials, capital, and equipment along with labour cost.

³²Holloway, Sue, Sandra Short, and Sarah Tamplin. 2002. *Household Satellite Account Methodology*. <http://www.statistics.gov.uk/hhsa/hhsa/resources/fileattachments/hhsa-ukaccount.pdf>.

can be enhanced by employing time-series data and rich micro data sets associated with various time use survey data. Doing so will make more accurate measures of time use possible, which in turn will facilitate more precise analyses of the economic role of men and women in areas ranging from consumer durables to healthcare. Alongside the continued use of the input method, methodological refinements to output-based approaches will help improve our understanding of the impact of economic and social policies on households of varying structures.

3. DATA AND METHODOLOGY

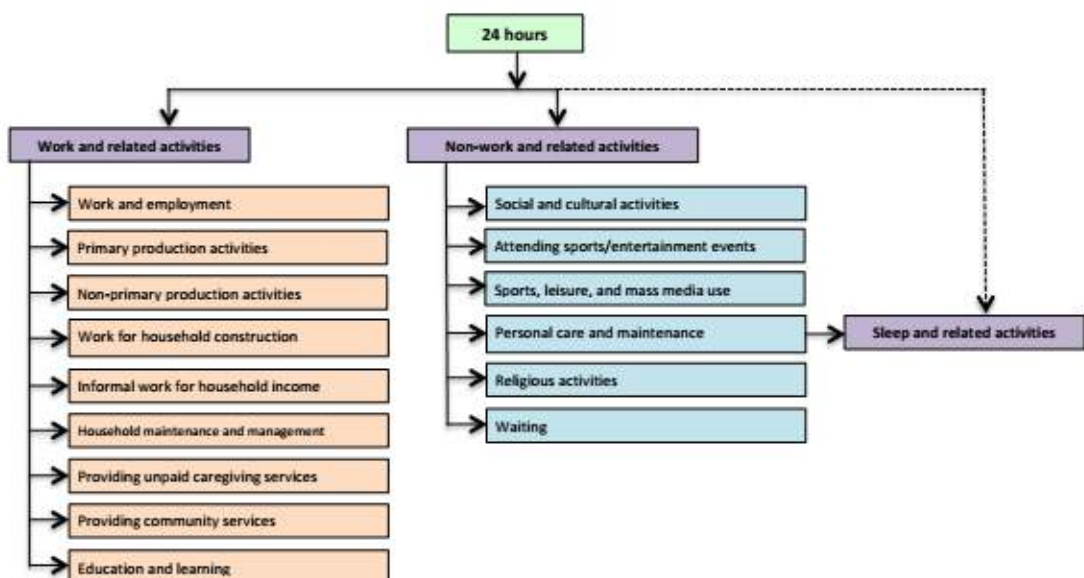
3.1 Data

Valuation using both the specialist and generalist methods of replacement cost requires time use data on unpaid care work. As with other studies, the primary source of data is time use surveys to understand the activity undertaken per unit of time (such as a day). The greatest challenge comes from measurement issues. Since the data collected by the CBS for the GNH) Survey are the only time use data available in the country, the time use data from the GNH Survey 2015 was used for the valuation.

Time use is one of the nine domains of GNH forming part of the GNH index, and comprehensive data on time use has been collected by CBS. The time use information was collected using the day reconstruction

method (DRM) whereby the respondents were asked to reconstruct the day they just spent. All activities performed within 24 hours between 4 am on the day preceding the survey (diary day) and 4 am of the day of the survey (interview day) were recorded for every 10-minute time interval. The time use activities were classified into three broad time use activities, 15 major activity groups, and 89 sub-groups. The broad groupings are 1) Work and related activities 2) Non-work and related activities and 3) Sleep and related activities (The last falls under the category of personal care and maintenance, a subset of Non-work and related activities). The time use activities classification framework adopted by CBS is presented in Figure 1.

Figure 1: *Categorisation of time use into various sub-groups*



Source: GNH Survey report 2015

Conducted in 2015, the GNH survey is a cross-sectional survey that targeted the population aged 15 and older. The GNH survey sample was designed to provide estimates for a holistic range of indicators under the nine domains for both urban and rural areas, and for 20 districts. A stratified four-stage systematic random sampling design was adopted for the survey. The 2015 GNH survey interviewed 7,153 respondents representing a total of 508,390 Bhutanese people. Of the 7,153 respondents interviewed, 41 per cent were men and 58 per cent, women.

For estimating the value of unpaid household work and care services using the specialist wage method, earnings data compiled by the LFS was used. The LFS is carried out annually by the Labour Market Information & Research Division of the Department of Employment, the Ministry of Labour and Human Resources (MoLHR). LFS is conducted with a moving reference period, namely one week before the date of interview. LFS 2015 targeted a nationally representative sample of 6,000 households, 4,500 of them in urban areas and 1,500 in rural areas. A total of 5,835 respondents were interviewed.

The operational definition used for the LFS survey is adopted from International Labour Organisation (ILO) standards and the United Nations 1993 System of National Accounts where work includes

any kind of work or business, such as collecting water or firewood, cow herding, tailoring, and making mats, even for the households' own consumption. However, activities performed for preparing and serving meals to family members and other household activities (baby-sitting, training and instructing children, transporting household members/goods, and repairing household durables, vehicles, or other goods) were not considered work for the LFS survey.

The LFS provides important details on occupation, disability, estimated earnings, unemployment, and education and training. Administrative data from MoLHR on the primary occupation of the respondents, the length of time spent on the primary occupation, the nature of the occupation, average hours spent on the primary activities, and earnings from the primary occupation were used. The primary occupations of respondents have been grouped into 242 occupational groups as per the classification system of the ILO.

3.2 Unpaid Care Work and Corresponding Occupation

To value unpaid care work using the specialist wage method, time use data on household maintenance and management, and providing unpaid caregiving services were used. For each activity identified as unpaid household work, a corresponding occupation was identified, as shown in Table

1. For some occupations, the LFS did not obtain adequate observations (e.g., laundry workers and dishwashers). For those occupational groups with few observations, wages of other similar occupational groups were used for valuation.

Table 1: *Unpaid household and care service activities and corresponding occupation*

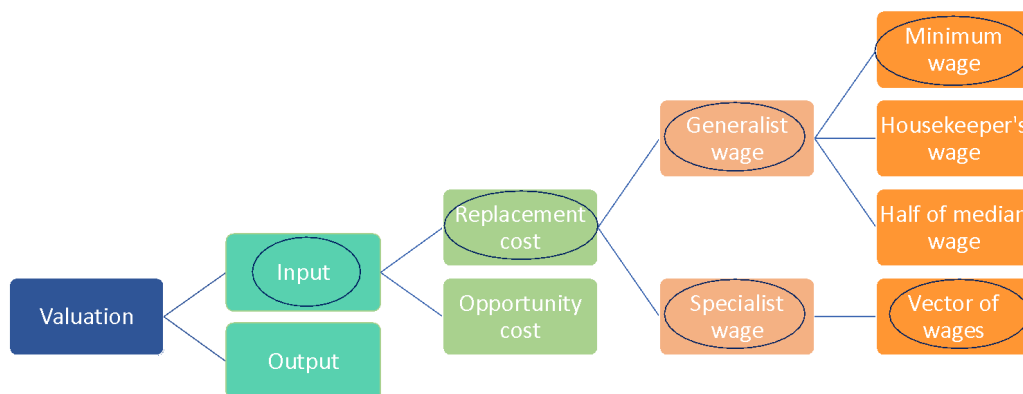
Unpaid household works & care services	Activities	Corresponding Occupation
Household maintenance and management	Cooking	Chefs [†]
	Dish washing	Waiter
	Fetching water	Domestic helper and cleaners
	Cleaning and upkeep	Housekeeper
	Laundry	Housekeeper
	Pet care	Laundrymen and dishwashers
	Shopping	Domestic helpers and cleaners
	Availing services	Domestic helpers and cleaners
	Travel related to household maintenance management	Domestic helpers and cleaners
Providing unpaid caregiving services	Caring children	Childcare workers
	Teaching children	Primary teachers
	Escorting children	Childcare workers
	Caring adults	Nurses
	Escorting adults	Nurses
	Travel related to household maintenance care	Domestic helpers and cleaners

[†] – *Although categorised as Chefs, the occupational group also contains people working as cooks in small hotels and restaurants.*

3.3 Methodology

As shown in Figure 2, input valuation replacement cost method was applied with two corresponding wages: generalist wage and specialist wage to value unpaid care work in this report.

Figure 2. *Methods of Valuing Unpaid Care Work*



The monetary value of unpaid household work performed by people aged 15 years and older was computed using the following formula.

V = Annual monetary value of unpaid household work and care services

N = Sample size

M = Number of unpaid household work and care service activities

P_i = Sampling weight to extrapolate to the whole target population

T_{ij} = Number of hours spent on unpaid household work from the group of activities j per 24-hour period scaled up to annually for the individual i

W_j = Hourly wage of the specialised occupations in group j . For valuation using the generalist wage or specialist wage.

The daily time spent on different unpaid household and care work activities recorded in minutes was first scaled up to annual figures in hours by multiplying by 365 and then dividing the resulting figures by 60 to convert to hours. Any average reported below for average time per activity is unconditional average and includes people who did not participate in a particular activity.³³

To determine the specialist hourly wage rates, the data on monthly earnings of different occupational groups from the LFS were divided by the monthly working

³³ Average numbers of time use in the subsequent figures and tables include people with zero minutes (unconditional participation).

hours³⁴. For valuation based on the specialist wage approach, both mean and median hourly wage rates of specialised occupational groups corresponding to the unpaid household work activities were used (Table 1).

Similarly, for valuation based on the generalist market cost replacement approach, the hourly wage rate of a semi-skilled occupation in the National Workforce (NWF), specifically the second lowest earner of the five categories of NWF, was used as a proxy for the minimum wage. The daily wage of Nu 286 reported for this semi-skilled NWF occupation was converted to an hourly wage rate by dividing it by 8, the daily total working hours, which comes to 35.75 Nu/hr. The wage of the semi-skilled NWF occupation was chosen for the valuation because this employment category consists of occupational groups such as sweepers and other menial labourers.

An alternative wage rate using the minimum wage rate of lowest paid public servants, General Service Personnel (GSP) II, was also used. The use of the GSP wage may be more justifiable since this employment category includes occupational groups, such as messengers, wet sweepers, washermen in hospitals, and cooks or bakers in government institutes, whose job

descriptions closely relate to the unpaid housework activities. The monthly wage of Nu 9,000 (including house rent allowance) was used for determining the hourly wage rate by dividing by 22 (average number of working days) and 8 (daily working hours), which comes to 51.14 Nu/hr.

³⁴Since the LFS captured weekly working hours, it was scaled-up to monthly working hours by multiplying the weekly working hours by four.

4. FINDINGS

4.1 Time Spent on Paid Work and Unpaid Care Work by Gender

People, in general, spent about 48 per cent of the day on personal care and maintenance, which includes sleeping, eating, physical fitness, hygiene and care, receiving healthcare, resting and relaxing, and travel related to personal care and maintenance (Figure 3). The remaining time was divided among leisure, paid work, unpaid work, and community services. While the time devoted to personal care and maintenance is similar for both women and men (11 hours 43 minutes for men and 11 hours 36 minutes for women), the time they spent on paid work (i.e., activities included under SNA) and unpaid work is different.

Men devoted more time to paid work while women devoted more time to unpaid work, as illustrated in Figure 4. On average, men spent 1 hour 25 minutes (or 85 minutes) more on paid work compared to women. Women, by contrast, spent around 2 hours 11 minutes (or 131 minutes) more on unpaid work, which includes both care and household work. Men spent 16 minutes and 18 minutes more respectively for leisure and community services. While women spent around 15 per cent of a day on household and care work, men spent only around 6 per cent of the time in a day on these activities.

Figure 3. Time spent on personal care and sleep by gender (hours per day, unconditional participation)

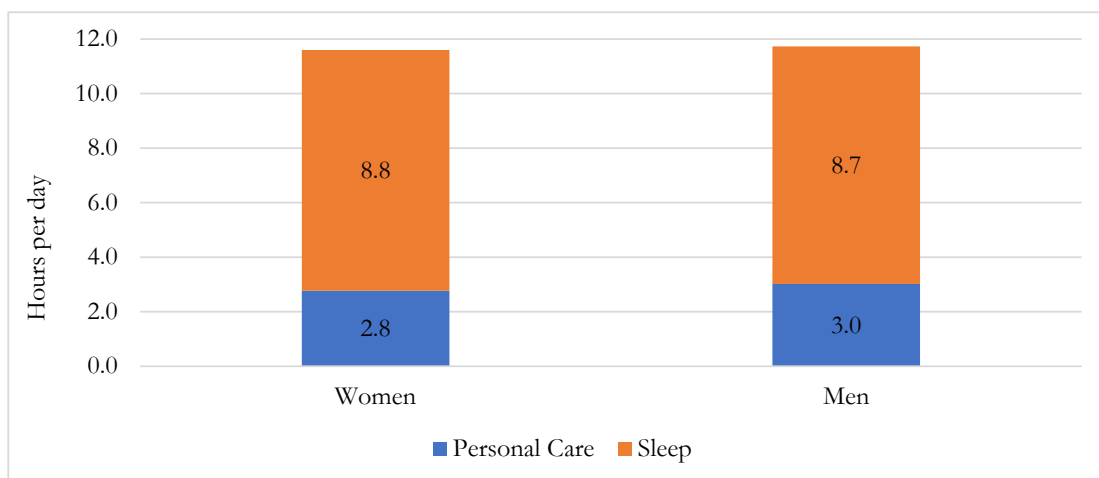


Figure 4. Time spent on major time use activities by gender in minutes per day (Unconditional participation)

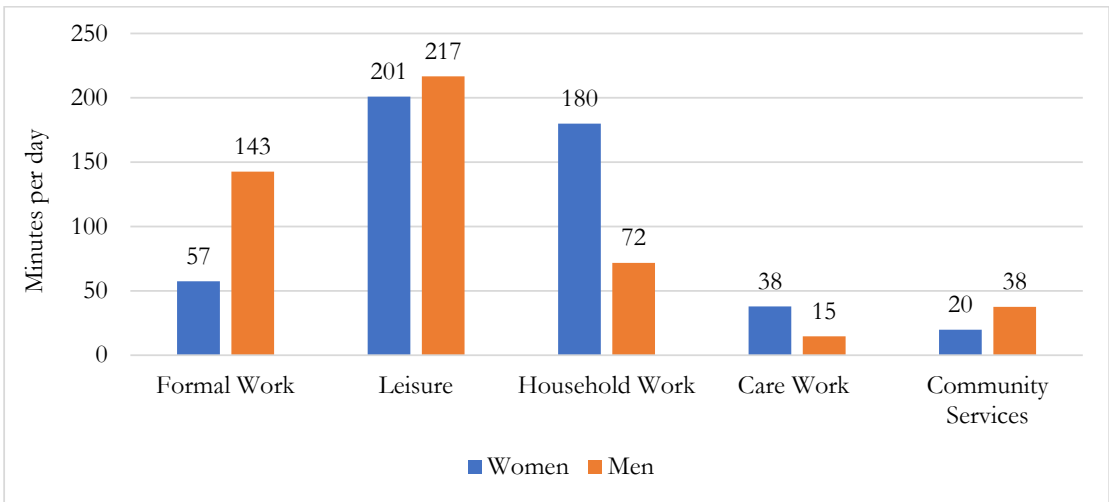
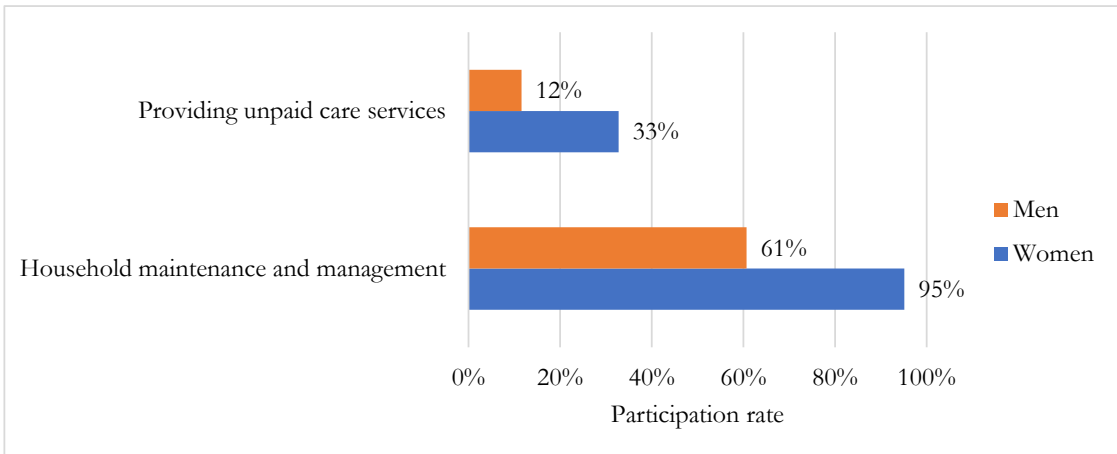


Figure 5. Participation rate in household maintenance and management and unpaid care services, by gender



The participation rate of women in household maintenance and management and providing unpaid care services is also higher compared to men.³⁵ 61 per cent of men participated in household maintenance and management, whereas 95 per cent of women participated in this activity (Figure

5). The participation rate for women in providing unpaid care services is almost 3 times higher than that for men. This shows that household maintenance and management services, and provision of unpaid care services to household members are predominantly performed by women.

³⁵Proportion of those engaged in particular activity from the population. For instance, participation rate of women is calculated by dividing the number women engaged in particular activity by the total women population.

Further, within household maintenance and management and unpaid care work, the time spent on various activities was higher for women in most activities. Among the activities, both men and women spent the most amount of time on cooking. However, women spent around 3.5 times more time on cooking than men, as shown in Figure 6. Women spent more than twice the amount of time spent by men in all unpaid household and care work except for travel related to household members and caring for adults.

Women spent not only more time on household and care work but also had higher participation rates in both activities

compared to men. For instance, 91 per cent of women participated in cooking against only 43 per cent of men (Figure 7). In other words, 91 per cent of all women surveyed spent at least some time during the day cooking compared to only 43 per cent of men surveyed. Three times as many women as men devoted some time to dishwashing, cleaning and upkeep of the household, laundry, and caring for children. Around 87 per cent (190 minutes of the total time) of household maintenance and management, and care work (218 minutes) performed by women included cooking, dishwashing, laundry, cleaning and upkeep of the household, and caring for children.

Figure 6. Daily time spent on various unpaid household maintenance and management and care activities in minutes, by gender (Minutes per day, unconditional participation)

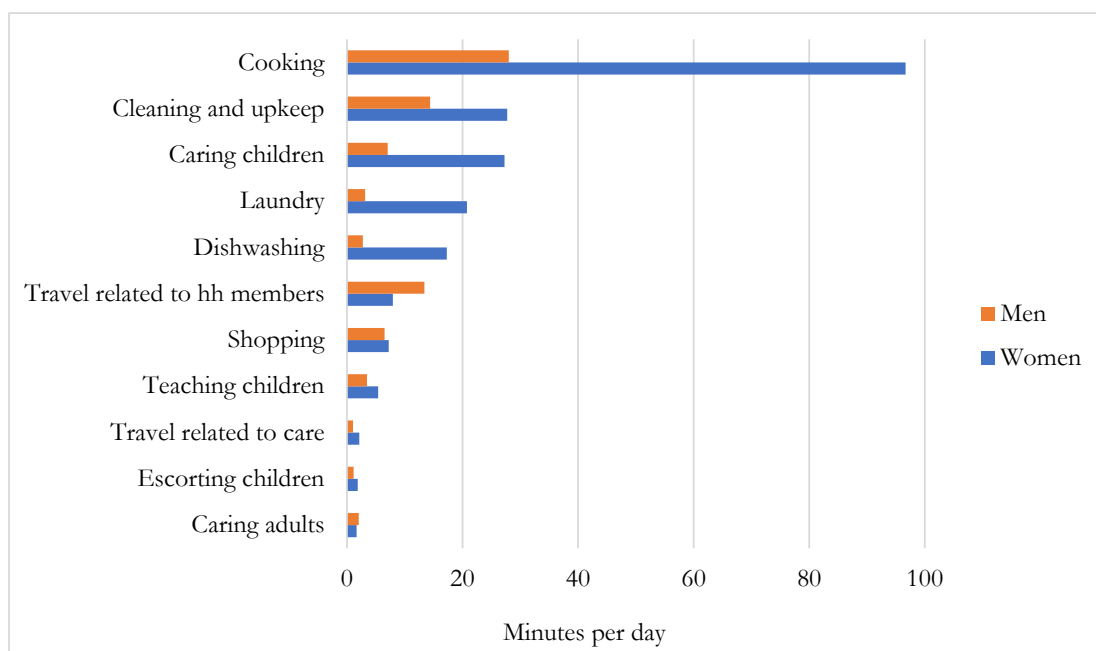
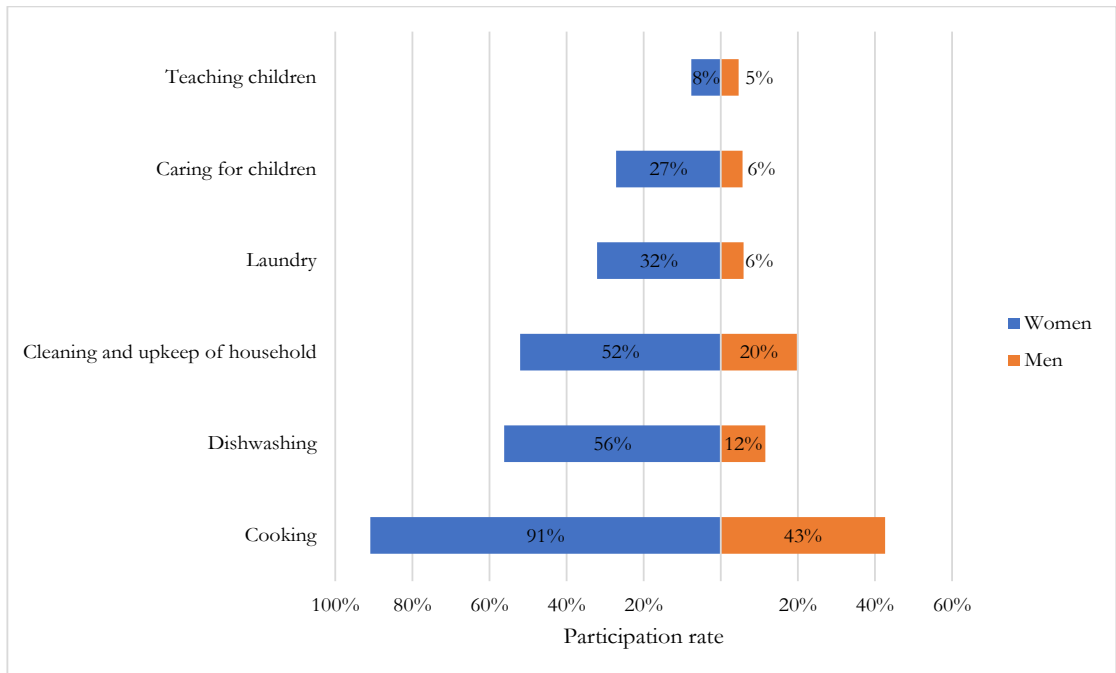


Figure 7. Participation rate in various household maintenance and management, and care work, by gender



4.2 Time Spent on Unpaid Care Work by Socio-economic Demographics

The time devoted to unpaid household and care work increases as the income quintile increases for women while it was the opposite for men (Figure 8). Further, the time devoted to paid work decreases among women in higher income quintiles.³⁶ While women in the first income quintile devoted around 218 minutes to unpaid work and around 271 minutes to paid work, women in the third income quintile spent around 249 minutes for unpaid work and 220 minutes

³⁶ This can be explained in two different ways. First, women in lower income brackets are forced to work longer hours in agricultural related activities, especially in rural areas, thereby leaving little time for unpaid household and care work, which are usually left to older members of the households. Second, women in higher income brackets have the luxury to forgo paid work as their existing income may be adequate to provision for the household.

for paid work. Women in the lower income quintile spent more time on paid and less time on unpaid work compared to women in higher income quintiles.

In both rural and urban areas, women devoted more than twice the amount of time to unpaid work than men. In rural areas, women spent 207 minutes per day on unpaid work while men spent 83 minutes. Urban areas saw similar disparities, with women spending 240 minutes on unpaid work and men, 95 minutes. Likewise, women living in urban areas devoted 23 minutes and 9 minutes more time on unpaid household work and care work respectively than their rural counterparts (Figure 9). This may be because women in rural areas devote more time to informal agricultural and related activities to supplement the

Figure 8. Daily time devoted to unpaid and paid work by income quintile and gender (Minutes per day, unconditional participation)

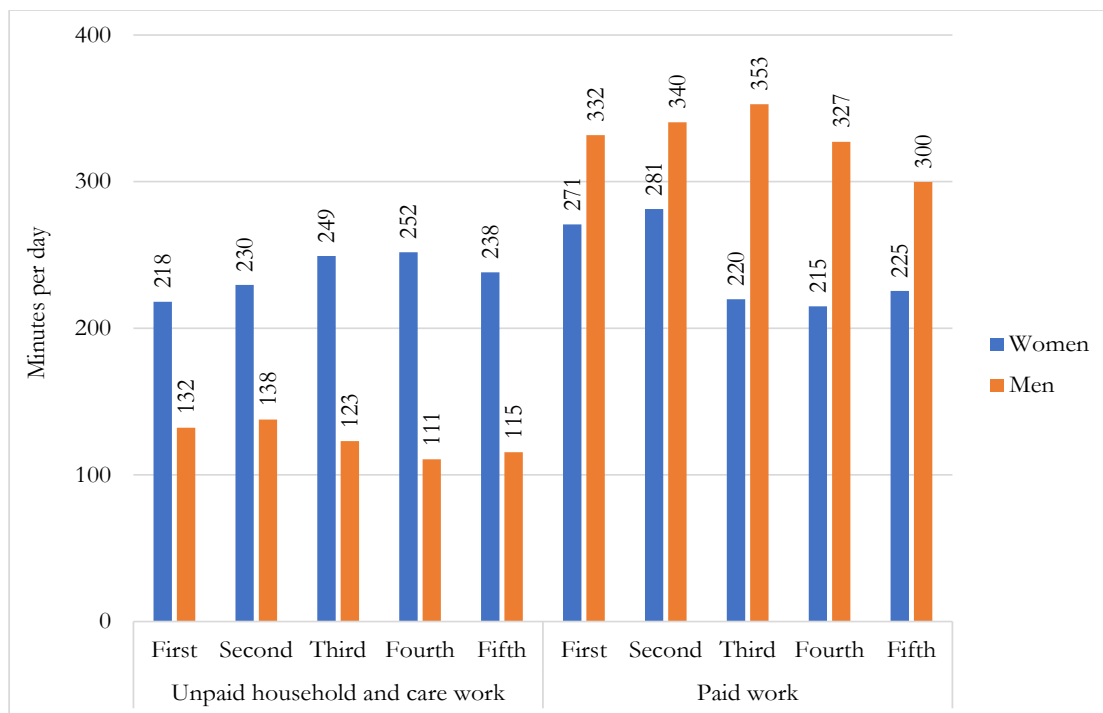
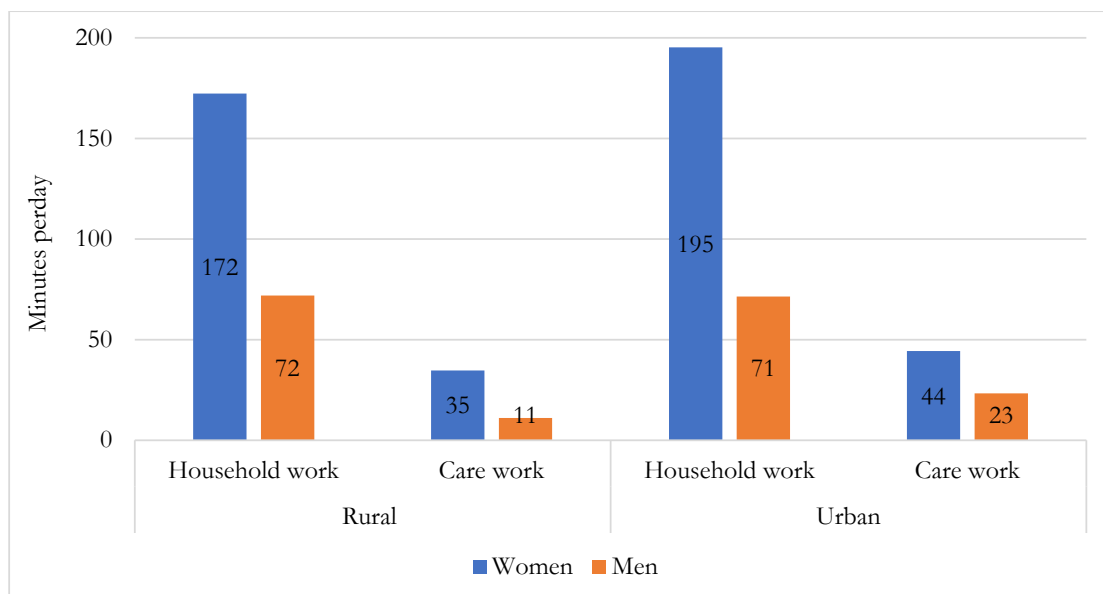


Figure 9. Daily time devoted to unpaid household and care work by area of residence and gender (Minutes per day, unconditional participation)



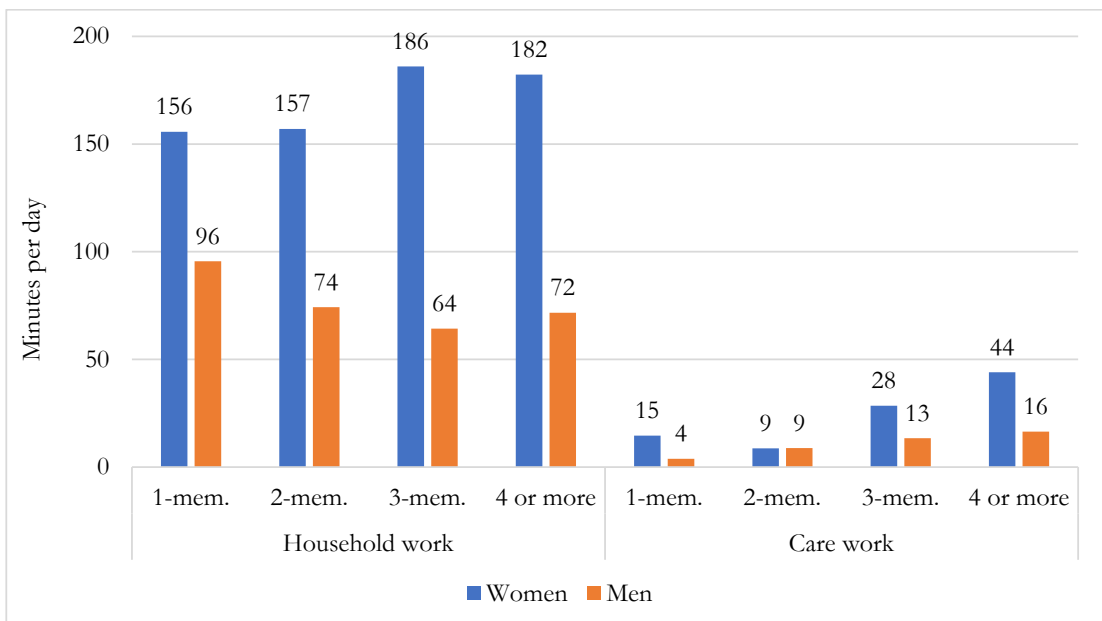
family income.

A more in-depth analysis by household size shows that the time women devoted to unpaid household work increased as the number of people living in the household increased. For instance, the time women devoted to unpaid household work generally increased from 156 minutes for one-member households to 182 minutes for households with four or more members (Figure 10). On the other hand, as the number of household members increased, men’s time devoted to unpaid household work generally decreased (96 minutes for single-member households vs. 72 minutes for four-plus member households). This could be because as the

number of household members increased, women started taking more household responsibilities while men devoted more time to paid work.

Although the time devoted to care work increased as household size increased for both men and women, the additional time devoted by men was less than 5 minutes for each additional household member (Figure 10). By comparison, the additional time women devoted to unpaid care work was about 20 minutes per additional household member starting from two-member households. Further, women devoted more than twice the amount of time devoted by men in households with three or more members.

Figure 10. Daily time devoted to unpaid household and care work by the number of people in the household and gender (Minutes per day, unconditional participation)



The analysis by age indicated that women devoted more time to unpaid household work regardless of age. Women in all age groups devoted more than twice the amount of time than men except for those aged 75 and above. Women aged between 25 and 34 devoted the highest number of hours to unpaid household work (Figure 11) with a gradual decrease in the amount of time they spent on unpaid work after the age of 34. However, for men, the time devoted to household work was similar for all age groups between 18 and 64 years.

The pattern of time devoted to unpaid care work was similar to that of household work. Women in the age group of 25-34 devoted the highest amount of their time (around one hour) to care work per day. It

is likely because women in that age group are in their prime childbearing years (Figure 12).

The analysis also showed that women devoted more time than men to both unpaid household and care work irrespective of their employment status. Women who are unemployed or out of the labour force devoted around two hours more to unpaid household work than men in the same employment category. Even among the employed, women devoted around 90 minutes more to household work than men. As for unpaid care work, women who were out of the labour force devoted 49 minutes to it, which was about 30 minutes more than men in the same employment category (Figure 13).

Figure 11. Daily time devoted to unpaid household work by age cohort and gender (Minutes per day, unconditional participation)

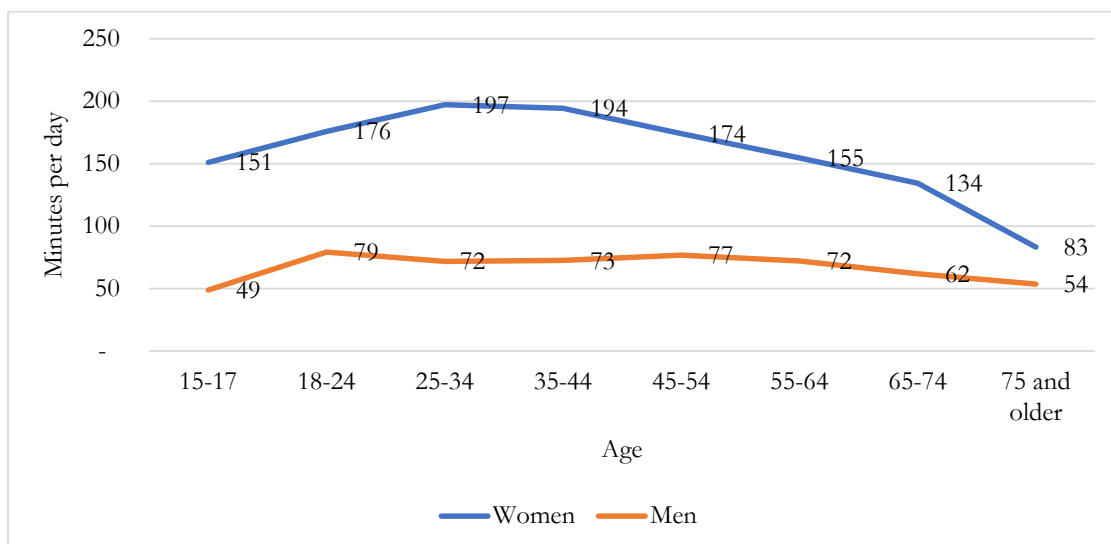


Figure 12. Daily time devoted to unpaid care work by age cohort and gender (Minutes per day, unconditional participation)

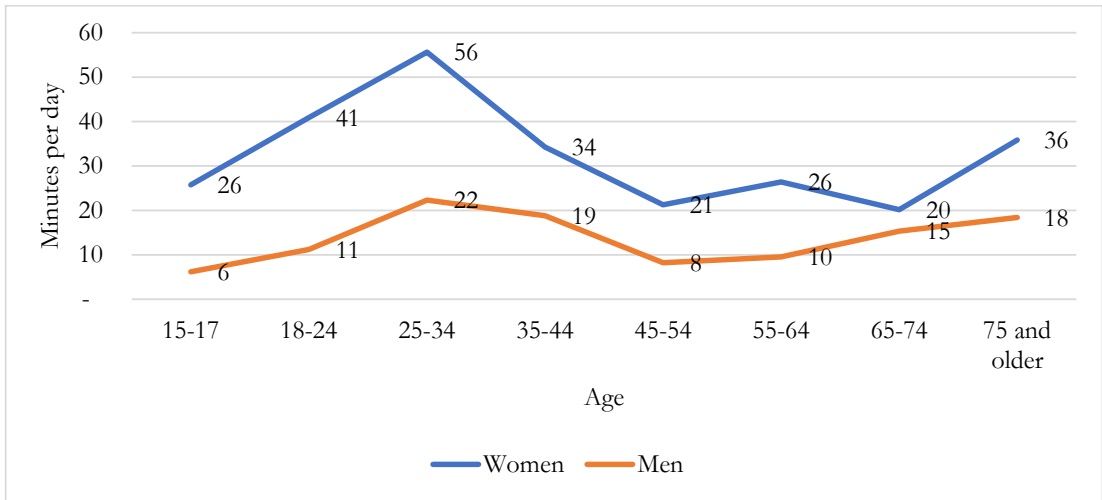
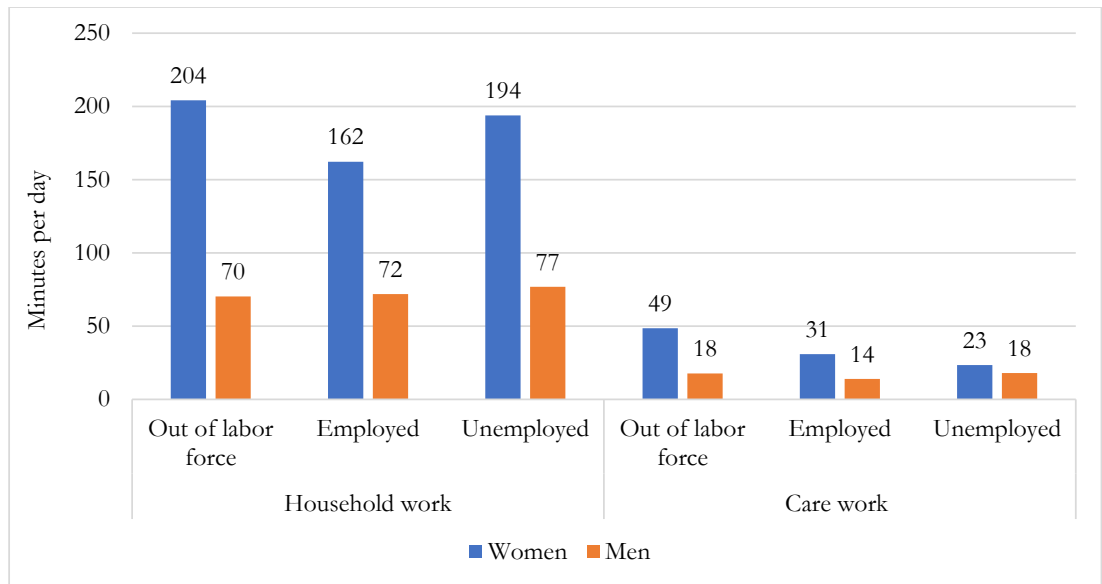


Figure 13. Daily time devoted to unpaid household and care work by employment status and gender (Minutes per day, unconditional participation)



4.3 Corresponding Wage Rates for Unpaid Care Work Activities

The LFS provides information that makes it possible to assign varying specialist wage rates to different types of unpaid house and care work activities. This report draws

specialist wages assigned to a different type of unpaid household and care work activities based on earning data from the 2011-2016 LFS. To estimate the value of unpaid household and care work, six occupational categories from the 2011-

2016 LFS were used to match the activities of unpaid household and care work in the GNH time use data. Since occupational codes used in the LFS were not consistent across years and the wage range within the same occupational categories showed untenable fluctuation over the period, it was difficult to determine a wage rate for different occupational categories for a specific year. Therefore, the maximum wage rate for an occupational category from 2011 to 2016 was used for estimating the value (Table 2). A limitation to our procedure is that the sample sizes in some categories were very small. For instance, the categories of dishwashers and laundrymen, which were used in 2015, had fewer than three respondents in the survey.

4.4 Values of Unpaid Care Work

This report employs the replacement cost approach, employing both a generalist wage and a specialist wage in estimating the market wages for labour of comparable

character and quality. These hourly wage rates were multiplied by the number of hours and the size of the population. In terms of the wage rates, the simplest approach applies a generalist wage (such as a housekeeper's wage or minimum wage). Alternatively, a vector of specialist wage rates (Table 2) is applied.

In terms of population size, the total population of 15 years and older (from the Population and Housing Census of 2017 [PHCB]) was used to estimate the value of unpaid household and care work in the country as a whole for 2017. To construct the estimates of the total value of unpaid work time in 2017, we assumed that the patterns of time use reported in 2015 would apply to 2017. Those who are younger than 15 years may contribute a significant amount of time and energy to unpaid care work but the threshold age of 15 and older was used since the time use survey of GNH 2015 covered this age group only. In

Table 2. Maximum hourly wage of corresponding occupations for unpaid household and care work

Corresponding occupation	Maximum hourly wage	Year					
		2011	2012	2013	2014	2015	2016
Chef	54.98			38.99		54.98	
Child Care Worker	41.39		15.05	41.39	40.18	32.93	
Domestic Helpers and Cleaners	47.11		28.96	26.64	35.24	32.32	47.11
Dishwasher and Laundryman	77.38		53.58	19.91	43.53	77.38	
Nurse	150.6				150.6	108.01	
Primary Teacher	119.19	48.32	91.94	83.9		119.19	115.01

2017, there were 284,586 men and 253,142 women aged 15 and older.

Estimates based on time use survey data showed that, in 2017, women aged 15 and older spent about 310 million hours on unpaid household and care work while men in the same age group spent about 150 million hours. From the total time spent on unpaid work, women spent 90 per cent of it on housework compared to men who spent 83 per cent of their time. The gender gap in time spent on household maintenance and management work is more significant compared to time spent on unpaid care work, although there is still some gaps in terms of unpaid care work. In other words, not only is the time spent on unpaid care work by women and men relatively short compared to the time spent on household maintenance and management work, but there was a smaller gender gap for unpaid care work (29 million hours for women versus 25 million hours for men).

4.4.1 Specialist Method

Based on the input-based specialist approach valuation, the total estimated contribution of unpaid household and care work performed by both men and women was Nu 25,648.56 million. In unpaid household and care work, women's contribution across all categories is much bigger compared to men's. Of the total, women's contribution accounted for about 68 per cent (equal to 17,313.30 million) (Table 3). The gender gap in contribution to the total unpaid household and care work was far greater for unpaid household management and maintenance work. For instance, women's contribution to these activities (i.e., cooking, laundry, cleaning and upkeep of house, and dishwashing) was 2.5 times greater than men's. A surprisingly smaller gender gap was found in care work: men's contribution to unpaid care work was about 90 per cent of women's contribution.

Table 3. Estimated annual value of unpaid household and care work using a specialist wage approach (Individuals 15 and older), in millions of Nu

Activities	Men	Women
Unpaid Household Management and Maintenance	6,404.39	15,179.56
Unpaid Care Work	1,930.88	2,133.73
Total	8,335.26	17,313.30

4.4.2 Generalist method

To estimate the value using the generalist wage method, two types of generalist wages were used: the national minimum wage rate of Nu 286 for semi-skilled workers and the wage rate of Nu 9,000 per month for GSP (lowest level civil servants). The wage rate for semi-skilled workers was chosen because most of the household and care activities would require some skills to perform. The hourly wage for semi-skilled master craftsperson came to about Nu 36, which is lower than any wage rate in the specialist wage approach (Table 2). This represents a reasonable lower-bound

estimate. An alternative wage rate for GSP was about Nu 51 per hour.

The value of unpaid household and care work using this method was estimated at Nu 16,287.02 million based on the wage rate for semi-skilled workers and Nu 23,296.75 million based on the wage rate for GSP (Table 4). Women's overall contribution was twice that of men in both wage selections. Similar to results obtained using the specialist wage approach, men's and women's contributions to household management and maintenance activities made up substantial proportions of their contributions to total unpaid work.

Table 4. Estimated annual value of unpaid household and care work using a generalist wage approach (Individuals 15 and older)

		Contribution (in Million)	
		Women	Men
Wage for semi-skilled master craftsperson	Unpaid Household Management and Maintenance	9,907.24	4,442.07
	Unpaid Care Work	1,029.83	907.88
	Total Unpaid Care Work	10,937.07	5,349.95
Wage for GSP (lowest level civil servants)	Unpaid Household Management and Maintenance	14,171.19	6,353.89
	Unpaid Care Work	1,473.05	1,298.61
	Total Unpaid Care Work	15,644.25	7,652.50

Accounting for Unpaid Care Work in Bhutan

In sum, the total market value of unpaid household and care work is equivalent to 10-16 per cent of 2017 GDP (or 10 per cent assigning the generalist method and 16 per cent using the specialist method), which comes to Nu 25,648.56 million (Figure 14). Both approaches showed that women's contribution is twice that of men. While women's contribution as a share of GDP is 11 per cent based on the specialist wage method, men's contribution is only around 5 per cent. Similarly, based on the generalist

wage method (semi-skilled labour wage), women's contribution as a share of GDP is 7 per cent and men's contribution, 3 per cent. Results using the alternative wage rate of GSP as a generalist wage also show a similar pattern. Although attempts at the monetary valuation of unpaid household and care work yield only approximate estimates, the important point is that measurement and valuation are possible. Such estimates can shed more light on the otherwise hidden dimensions of GDP.

Figure 14. Value of unpaid care work as a share of GDP in 2017



5. CONCLUSIONS AND POLICY RECOMMENDATIONS

Unpaid care work in Bhutan is prominent. The report estimates that unpaid care work has a total value of Nu 23,509.11 million, which is equivalent to 16 per cent of GDP if measured using a ‘specialist’ wage. It is equivalent to 10 per cent if a generalist wage is applied. Over two-thirds of the estimated monetary value of unpaid work was performed by women and the rest by men. The findings showed that although women spent a disproportionate amount of time on unpaid work in general, rural women spent less time on unpaid work than their urban counterparts, most likely because rural women needed to engage in farm work and other income-generating activities to supplement the family income. The time spent on unpaid work was found to be increased as the number of children in the household increased.

High-quality care work is a social good that sustains society. However, its invisibility and unequal distribution have a negative impact on women, who bear a disproportionate share of the burden. GDP only accounts for the value of goods and services bought and sold in the market, thus presenting an incomplete picture of economic wellbeing. The objective of this study is not necessarily to eliminate unpaid care work (much of it is absolutely necessary for the functioning of society) but to set up an institutional structure that recognises its value, ensure

that it is equitably distributed across the population, ensure that unpaid care work that adds to human capital is encouraged (such as elders of families spending time with their children), and reduce time poverty. In other words, it ensures that everyone has the opportunity for a minimal amount of ‘leisure time.’³⁷

The recommendations cover three areas. The first outlines the measurement challenges that need to be resolved to improve the measurement of unpaid care work. The next one puts the results in the context of GNH and the current labour market. Finally the report puts forth four types of policy recommendations: (1) those that address the double work burden of women to achieve a more efficient use of their rationed time (2) put a value to unpaid work by offering incentives to men and women who perform unpaid work (3) policies to reward activities related to unpaid work, and (4) policies that attempt to change societal perceptions and behaviour towards unpaid services.

5.1 Improving the measurement of unpaid care

In addition to recognising unpaid care work as a value to society and closing the gender gap in terms of the share of contribution, it is important to emphasise the need to

³⁷Daily leisure time=24 hours -sleep time – personal care and hygiene time-paid work-unpaid work (including volunteering).

monitor the changing nature of service provision continuously and the value the services add *in general* with much more scrutiny to ensure that these are provided in an effective and equitable manner.

The estimated value of unpaid household and care work showed that women spent a large portion of their time tending to family needs. In particular, women’s contribution to housework is far greater than care work. This prevents women who perform a disproportionate amount of unpaid household and care work from availing themselves of training and education opportunities and from participating in formal paid work. As such, investments in basic infrastructure such as electricity, gas, and plumbing could significantly improve women’s overall productivity. Greater use of automation, particularly in rural areas, could allow them to spend less time on routine unpaid activities and

more quality time with the community, elderly family members and their children. Thus, the payoff to public investments in such infrastructure is understated when the value of unpaid household and care work is not explicitly factored in their costs.

The data that this report employed to estimate the value of unpaid care work include the time use survey from the GNH survey, wage rates from LFS, and population size from BLSS and PHCB. These data are of high quality and well-suited to provide economy-wide estimates of the value of unpaid care work. However, they do have some limitations. Table 5 identifies the measurement challenges the study encountered and how they might be addressed if this exercise is to be institutionalised (which should be). Future analysis should improve once data limitations are addressed, particularly the short-term ones.

Table 5. *Timing of Measurement and Dissemination Recommendations*

Timeline/	Modality
Short-term	
Institute a system to improve the measurement of unpaid care work	
1. Add new questions to the time-use surveys	Add questions to typical unpaid care activities to cross-classify with the occupations that are existent for future exercises and include a direct question on supervisory care, which typically represents constraints on caregivers’ time rather than activities undertaken for dependents in the GNH surveys. Furthermore, include provisions to assess long-term attitude towards certain standard types of unpaid care work.

<p>2. Maintain consistency of employment categories across years.</p>	<p>In the LFS, the wage rates for different occupations in the dataset can be improved by making the categories consistent across years.</p>
<p>3. Significantly bolster data on wages</p>	<p>Consider a pilot survey on wages in the services sector that can then be incorporated into the labour force survey.</p>
<p>4. Use international comparisons to crosscheck the value of informal jobs</p>	<p>Use data from countries with similar labour market situations to make comparisons on the value of informal jobs.</p>
<p>5. Use formal or informal volunteer programmes to pilot a study on the distribution of volunteering among men and women</p>	<p>Conduct a satellite survey to gather in-depth information on voluntary activities and distribution of volunteering among both men and women. Two important pieces of information are required in data collection in addition to the activity itself: 1) why is volunteering work undertaken; 2) who benefits from it</p>
<p>6. Disseminate the findings of this report through various means, including the media</p>	<p>Disseminate the findings of this study through various means, including a national debate on the results of the study. This would help prioritise actions to implement the findings.</p>
<p>Medium-term:</p>	
<p>1. Conduct a thorough study of labour and social protection legislations.</p>	<p>The study could explore and identify how quickly reforms can be made to ensure that the laws and regulations encourage - rather than discourage - fair distribution of work between men and women. Consider incorporating best practices into the Bhutanese labour regulation with respect to time.</p>
<p>2. Initiate pilot programmes that allow men to participate in household and care work.</p>	<p>Initiate a pilot programme where men engage in household activities and help change the mindset on traditional gender roles, thus encouraging them to share household and care work.</p>

Long-term

1. Devise labour productivity statistics that measure the value of work in services - whether paid or unpaid – and incorporate them into the Gross National Happiness Index (GNHI).
2. Include measures of unpaid care work in the national accounts, first as a satellite account and then incorporate as part of the calculations.
3. Implement and monitor valuation of household work and care services through the review and revision of national survey questionnaires to consistently capture data on unpaid care work, including the more refined elements of household work and care services.
4. A more formal way of prioritising the unpaid care work in planning is to cross-reference to the Sustainable Development Goals (SDGs), which are defined in terms of priority (the first being the elimination of poverty and vulnerability).

The recommendations in the table will respond to the following problems:

- Wage data needs to be significantly upscaled: using wage data to make these calculations implies that the results are sensitive to the structure of the labour market institutions. For example, if pre-school education is provided free, unpaid care of pre-school children will be valued at a lower relative cost. Given the large informal labour market in the country, wages used for replacement cost calculations may underestimate the value if compared internationally. Some adjustments need to be made.
- Human capital factor adjustment: some unpaid care work has more value than others (for example, unpaid care that increases the human capital of the recipient, such as teaching a child to read, teaching a trade to young people, or providing preventive therapy). Such

work not only provides the short-term benefit of care, but also the long-term benefit of transmitting skills and healthy habits that will increase future welfare. This adjustment would be desirable. Therefore, consider adding a ‘human capital adjuster’ to activities that require strong interaction across two people for the benefit of one (or two). Examples include teaching or empowering.

- Inequality in time spent on unpaid care work should also be measured: Unpaid care work exacerbates inequalities in society because it prevents those who are involved in the work from participating in product paid work.

5.2 Overall takeaways and their relation to GNH exercise

While unpaid care work adds value to society, the value is generally not measured in the system of national accounts.

Moreover, the finding that women contribute disproportionately more than men is not unique to Bhutan. Nevertheless, the implications of this report go beyond the issue of gender inequality. Given the high proportion of informal employment in the country, and given the changing nature of jobs globally, the phenomenon in which services are performed at sub-par wages, unreported wages, or are performed free will increase in prominence in the future. It is important to put this in the overall macroeconomic context of changing labour markets in the country and formulate forward-looking policies.

The service sector is most likely to become the engine of growth in the future but there is a long way to go in improving the value of services which are key to the country's development. Although there is scope for improving agricultural productivity, manufacturing is unlikely to take on a big role. Therefore, appropriately measuring the productivity of services will become paramount: the overall low unemployment rate has masked challenges of low productive employment. The labour employed in agriculture is predominantly informal and receive low wages with no fringe benefits and limited access to social insurance and skill development programmes. Bhutan Living Standards Survey 2017 showed that more than 60 per cent of workers were own-account workers

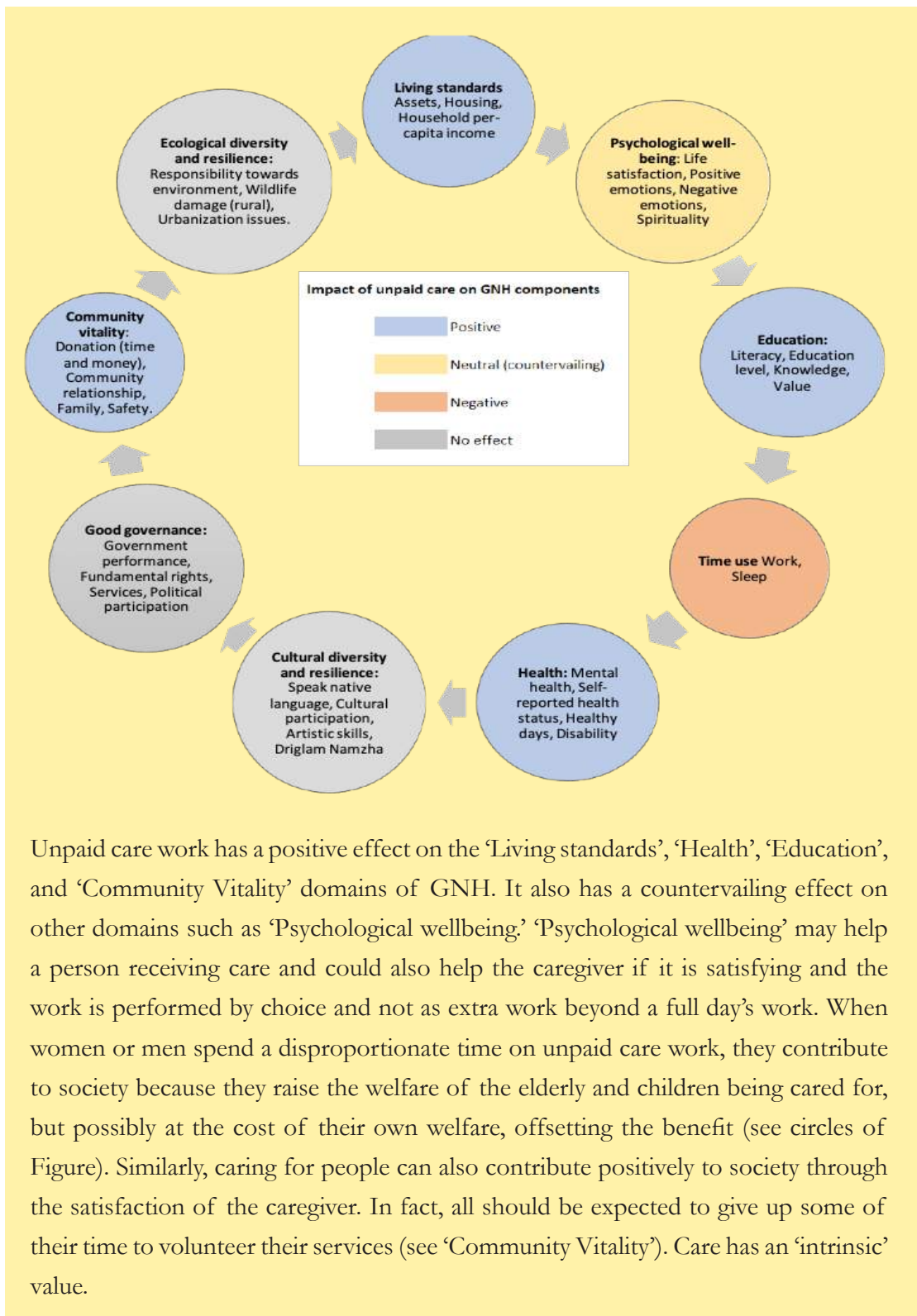
in 2017 while microenterprises contributed little to job creation and employment growth. Colleges fall short of supplying the skills needed in the labour market besides failing to improve workforce productivity and economic competitiveness through appropriate types and levels of skilling. Youth employment can be better addressed if access to quality TVET and tertiary education is improved.

5.3. Incorporating unpaid care into GNHI

In addition, to better focus on the time use survey, a less immediate consideration is to incorporate unpaid care work into the measure of GNH. While this study is limited to measuring the value of unpaid care work, measured in 'monetary' terms as a share of GDP, it is an important aspect of GNH. The recommendations include:

- Incorporate and assign equal weight to "unpaid work" in the "Time Use" component in measurement of the GNHI with the existing categories of work and sleep. This refined differentiation will emphasise the value of unpaid work to society and may lead to an increase in overall happiness levels (or a reduction in the contribution of "Time Use" in unhappiness levels in the GNH).

Box Figure: *Components of Gross National Happiness and Potential Impact of Unpaid Care*



5.4 Recommendations for strengthening legal and policy environment

Bhutan has adopted a people-centric system of governance in line with its overall development philosophy of GNH. The scope of good governance includes rule of law, responsibility, reliability and predictability, openness, transparency, accountability, effectiveness, cooperation (partnership), coherence, and efficiency. However, there are many early actions in the area of legislation, labour laws, employment opportunity reforms, entrepreneurial development and outreach that can be set into motion. While the recommendations are more general, the government can ensure that these objectives are incorporated into the broader national development programmes.

i. Address the ‘double work burden’ of unpaid caregivers, particularly women to achieve a more efficient use of their rationed time through legislative means.

- Explore the possibility of instituting a mechanism to regulate working hours in the informal sector. For example, fix maximum hours of overtime per worker and limit standard working hours per week to 40 hours across sectors. Fix minimum resting time between work shifts (for example, minimum 11 hours of resting time). Such

policies could be adopted as part of a wider set of employment regulations.

- In the medium-term, consider policies that offer equal opportunities for “Parental Leave” for parents engaged in non-farm wage employment. This would include a system that safeguards workers’ employment status and benefits during and after taking parental leave. This could be part of regulations to make benefits more portable to reduce inequalities in work and pay contracts between the public and private sectors.
- Strengthen legislation that makes vacations mandatory or enables monetisation of accrued overtime after reaching a certain threshold (for example, more than 80 hours overtime per month is converted into vacation days). This objective can be achieved by facilitating and introducing a complaints mechanism. Introduce policies that allow parents to take sick days off from work to take care of sick family members without reducing their own sick leave. More generally, make use of options that allow long periods of leave for the care of young or old family members, particularly for non-contract

jobs, for both men and women employees. In general, provide some flexibility while ensuring that the policies do not inadvertently act against women's employability.

- Advocate for allocation of a certain percentage of budget based on the value of unpaid care work for interventions to reduce the burden of unpaid care work.

ii. Implement interventions to reduce the burden of unpaid care work as well as more choice and flexibility for those leaving the labour force temporarily and want to return.

- Enhance job-matching services and related training for workers interested in temporary 'gig' or 'mini' jobs. These are part-time employment opportunities where wages and the total number of working hours are set.
- Create 'one-stop-shops' for public services. This is in tie-up with social protection systems and other service provision of the government.
- In the medium-term, decentralise, expand coverage and digitalisation (through biometrics) of certain public and social services. This should tie-up with social protection systems.
- Provide quality and affordable

public and private care for children and the elderly (childcare crèches, kindergarten and private care for children, including children with disabilities and elderly), in cases in which unpaid care is needed on a short- or long-term basis.

- Enhance access to credits for female-headed micro, small, and family-owned enterprises.
- Devise a matching system where people can volunteer to 'help out' those in their neighbourhoods or communities in temporary but substantial need for help. In turn, the volunteers could draw on the 'pool' to receive help when they are in need of it.

iii. Introduce and implement policies to support divorced and single parents

- Revise and increase the existing rate of compensation paid to mothers to enable them to meet the expenditure incurred on the child/children after divorce considering the amount of time, they spend on unpaid child care. The findings indicate that the total time spent on care work by women amounts to 218 minutes per day which, if valued, will cost around Nu 2,133.73 million a year based on the specialist method. The existing amount of compensation a

woman receives from her former husband as child support allowance is minimal.

- Prioritise social protection programmes for divorced women, families with more children or families with the elderly (e.g. conditional cash transfer schemes).

iv. Implement interventions to address perceptions and behaviour towards unpaid work and encourage equal participation of men and women in unpaid care work

- Advocate with policymakers to recognise women's contribution via unpaid work to national GDP.
- Disseminate the study findings, including through school curriculum to change the mindset on the stereotypical gender division of roles.
- Carry out advocacy and awareness programmes through various means, including the mass media on gender equality and sharing equal responsibilities of unpaid care and domestic work. This could also help change the mindset of the public on stereotypical gender divisions of work.
- Organise social dialogues to frame collective or public-private solutions to labour market challenges.

By and large, it is important to reiterate that both paid and unpaid work contribute to sustainable economic progress. This can be illustrated by imagining a situation in which those providing unpaid care work for family members suddenly decide to withdraw their services: it would be impossible for paid household and care services to fill the gap. Moreover, there are important inter-generational benefits. Not only do children benefit from care work, but the whole society benefits as children grow up to become workers and taxpayers contributing to society and the economy. For these reasons, more sustained efforts to estimate the value of unpaid household and care work are important as they contribute to yielding a more accurate picture of societal wellbeing.

Box 2. *Social capital: some takeaways from the focus group discussions*

From May 28 to June 6, interviews were conducted with four demographically different groups (See Appendix 2). This was conducted in large part to get an essence of the family structures and the views of different generations and income groups on the role of men and women in (i) work; work-life balance and (iii) care distribution of family members. Some observations are as follows:

Many of those interviewed seem to face the same challenges of those in modern societies, namely furthering their career, or making ends meet through self-employment. The division of work among men and women also seemed similar to that of an OECD economy, namely men still performing outside work and odd jobs more than women, with women who had more demanding jobs also feeling they had the main responsibility for their families. This is partly because, once married, young couples tend to settle with the wife's family, so there is a stronger social obligation for the woman to take care of the elders and play a more prominent role within the household.

Taking care of the family, particularly the elderly, is very strongly ingrained in the Bhutanese society. The idea of the government paying an adult family

member money to take care of their older relatives — a suggestion transferred from Korea — was considered somewhat degrading and unlikely to be socially acceptable. Moreover, with low crime rates and minimal international migration (except for temporary construction migrant workers from India), communities are close-knit. Consequently, community values are strong and self-reinforced.

Volunteerism within the household and in society is strongly encouraged. There were various examples that came out from the interviews: (i) students at the university are expected to spend the Saturday morning cleaning their rooms and public spaces on the campus (ii) When some elderly persons are not with the family — say, because they have migrated to an urban centre — others in the neighbourhood usually agree to take care of them. (iii) volunteerism and community work are taken very seriously. Everyone is expected to do it, not as a legal mandate, but as a societal responsibility which then is reinforced through social norms.

The results showed that, as in other societies, women perform more unpaid care work than men. However, they

also showed that men perform more community work than women, mostly in minor repair and maintenance. The attitude of women and men towards each other and towards their jobs etc. suggested that two issues tend to perpetuate this, despite relatively favourable attitudes, laws and regulations: (i) the matriarchal hereditary system, which tends to tie women more to the land (particularly in rural areas). This could also mean less opportunity for them to engage in paid employment compared to men, who are fairly mobile and (ii) the notion that women are expected to stay with or near their parents after marriage, as traditionally they have been the main caregivers of their elderly parents. In general, younger people may move away from home to study but prefer to go back. This is more true for women than for men. In other words, while there is no prohibition of any kind, there is strong social pressure on women — and

to some extent men — to return and live near their elders.

Finally, the willingness of the Bhutanese society to create such a strong safety net through inter-generational ‘contract’ and caregiving for elders and children is a very strong and positive trait which should be encouraged. Most modern societies tend to lose this very quickly although less so in small, more homogeneous countries. What comes out of surveys is that policies have to ensure that these care responsibilities are distributed fairly across families and within families. In other words, policies should be designed to maximise the time spent on ‘quality’ care with children: reading a book, taking to the doctor, picking them up from school etc. To the extent that work policies offer flexible time and can continue to do so, this will set the stage for a stronger and more resilient younger generation.

GLOSSARY OF TECHNICAL TERMS

Generalist wage approach: Used in the input-based approach, the generalist wage approach calculates the value of unpaid care work by using the average wage paid to a worker, such as a domestic helper or housekeeper. This report adopts two generalist wages: 1) the hourly wage rate of a semi-skilled occupation in the National Workforce (NWF), and 2) the minimum wage rate of lowest paid public servants, General Service Personnel (GSP) II.

Input-based approach: One of the two major methods for estimating the value of unpaid care work. It focuses on measuring the amount of labour that goes into unpaid work (using time use data) and estimating its value by comparing it against market wages that paid workers receive for performing similar work. In comparing it to market wages, either the replacement cost or opportunity cost approach may be used.

Opportunity cost: The per-hour value of the time that an individual could have spent on an alternative activity if she/he had not done unpaid care work. For people who work for pay, opportunity cost usually refers to earnings they forgo in order to do the unpaid work. While opportunity cost is a good measure of wages that a person gives up to do unpaid work, it is not useful for capturing the benefits that others (such as care recipients) gain from the unpaid work.

Output-based approach: One of the two major valuation methods for estimating the value of unpaid care work. It focuses on how much it would cost to buy goods and services in the market that are comparable to the output of unpaid care work. This approach has two major limitations: 1) it relies on the availability of relevant data that show both a market price for quality-equivalent outputs and the quantity of goods and services created by an instance of unpaid care work; and 2) some ‘outputs’ of unpaid care work are difficult to define, as in the case of care work for children.

Production boundary: A conceptual device in the Systems of National Accounts (SNA) that defines productive activities. The production boundary includes: 1) the production of all goods and services that are supplied to units other than their producers, or intended to be so supplied, including the production of goods and services used up in the process of producing such goods and services; 2) the own production of all goods that are retained by their producers for their own final consumption or gross capital formation; and 3) the own production of domestic and personal services by employing paid domestic staff.

Productive activity: Based on the third-person criterion articulated by Margaret Reid, an activity is considered productive (i.e., work) if it can be delegated to someone else who is paid to perform it. This report adopts this understanding of productive activity, which is broader than the narrow conception embodied in the SNA's production boundary.

Replacement cost: Monetary amount needed to pay for a service in the market that people would otherwise perform themselves. That is, the monetary value required to hire a worker to do unpaid care work.

Specialist wage approach: Used in input-based approach, the specialist wage approach separates calculations for each task as if the household had employed a specialist to do it. A list of specialist wages used in this report is shown in Table 1.

Unpaid care work: The production of services produced by household members and consumed either by the household members who produced the services or by other household members, which do not involve a market transaction.

Appendix 1: Experts consulted

SL	Institution	Person/Official
1	National Commission for Women and Children	<ol style="list-style-type: none"> 1. Director 2. Chief Programme Officer, Women's Division 3. Programme Officers, Women's Division
2	National Statistics Bureau of Bhutan	<ol style="list-style-type: none"> 1. Director 2. Chief Statistical Officer, Social Statistics Division
3	National Council of Bhutan	<ol style="list-style-type: none"> 1. Hon. Kesang Chuki Dorjee, Eminent Member 2. Hon. Sonam Pelzom, Member of Parliament (Mongar) 3. Hon. Ugyen Namgay, Member of Parliament (Haa) 4. Hon. Tshewang Rinzin, Member of Parliament (Thimphu) 5. Hon. Lhaki Dolma, Member of Parliament (Punakha) 6. Hon. Nima, Member of Parliament (Bumthang)
4	Centre for Bhutan and GNH Studies	<ol style="list-style-type: none"> 1. Chief, GNH Division
5	UNDP Bhutan	<ol style="list-style-type: none"> 1. Dy. Resident Representative, UNDP Bhutan
6	Ministry of Labour and Human Resources	<ol style="list-style-type: none"> 1. Director General, Department of Employment and Human Resources 2. Research Officer, Labour Market Information and Research Division 3. Gender Focal Person
7	RENEW	<ol style="list-style-type: none"> 1. Executive Director 2. Director, Community Outreach Department 3. Counsellor, Counselling Department

Appendix 2: List of participants for focus group discussions

Date	Place	Focus group discussions participants
May 3, 2018	Thimphu	Working professionals and Gender Focal Persons
May 3, 2018	Thimphu Tech Park, Thimphu	Young professionals working in private sector, mostly start-ups
May 4, 2018	Paro College of Education, Paro	College students
May 7, 2018	Chamgang, Thimphu	Rural residents

Appendix Tables

Appendix Table 1. *Population size by age cohort*

Age	Male		Female		Total
	Number	Per cent	Number	Per cent	
15-19	34,679	50.8	33,607	49.2	68,286
20-24	41,075	54.5	34,340	45.5	75,415
25-29	42,802	54	36,478	46	79,280
30-34	35,059	53.8	30,121	46.2	65,180
35-39	29,689	53.4	25,860	46.6	55,549
40-44	22,274	53.7	19,221	46.3	41,495
45-49	18,865	53.1	16,668	46.9	35,533
50-54	15,456	52.7	13,861	47.3	29,317
55-59	12,379	51.8	11,519	48.2	23,898
60-64	10,498	50.7	10,213	49.3	20,711
65-69	7,585	51.8	7,069	48.2	14,654
70-74	5,876	51.2	5,592	48.8	11,468
75-79	3,965	50.4	3,906	49.6	7,871
80-84	2,651	49.1	2,746	50.9	5,397
85+	1,733	47.2	1,941	52.8	3,674
Total	284,586		253,142		

Appendix Table 2. Detailed information on estimating the market value of unpaid household and care work

Major Time Use Activities	Activities	Male	Female	Corresponding occupation	Wage per hour	Overall contribution in a year (in millions)	
						Male	Female
Unpaid Household Management and Maintenance	Cooking	27.85	95.69	Chef	54.98	2,650.88	8,102.00
	Dish washing	2.8	17.47	Domestic Helpers and Cleaners	47.11	228.19	1,267.72
	Fetching water	0.67	1.93	Domestic Helpers and Cleaners	47.11	54.95	139.86
	Cleaning and upkeep of house	14.17	27.77	Domestic Helpers and Cleaners	47.11	1,155.75	2,014.70
	Laundry	3.27	20.69	Laundrymen	77.38	437.96	2,465.43
	Pet care	0.15	0.08	Domestic Helpers and Cleaners	47.11	12.05	5.45
	Shopping	6.4	7.1	Domestic Helpers and Cleaners	47.11	522.36	515.12
	Availing services	3.32	1.39	Domestic Helpers and Cleaners	47.11	271.01	101.09
	Travel related to household management	13.13	7.83	Domestic Helpers and Cleaners	47.11	1,071.24	568.19
	Unpaid Care Work	Caring children	6.9	7.83	Child Care Worker	41.39	494.71
Teaching children		3.5	5.29	Primary Teacher	119.19	722.30	970.48
Escorting children		1.13	1.79	Child Care Worker	41.39	80.81	114.33
Caring adults		1.98	1.63	Nurse	150.6	516.57	377.49
Escorting adults		0.12	0.1	Nurse	150.6	32.40	22.04
Travel related to household care		1.03	2.07	Domestic Helpers and Cleaners	47.11	84.09	150.18
Total		86.44	198.66			8,335.26	17,313.30



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