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Unpaid household work**Extract of the Guide on valuing unpaid household service work****Note by the Task Force on Valuing Unpaid Household Service Work***Summary*

The document presents an extract of the *Guide on valuing unpaid household service work*. The Guide was prepared by the Task Force on Valuing Unpaid Household Service Work consisting of Australia, Canada, Chile, Finland, Italy, Mexico, New Zealand, Republic of Moldova, Slovenia, Switzerland, United Kingdom (Chair), United States, Eurostat, the International Labour Organization (ILO), the Organisation for Economic Co-operation and Development (OECD) and the United Nations Economic Commission for Europe (UNECE).

The objective of the Guide is to provide guidance to national statistical offices on selecting and applying methods for valuing own-use production work of services, and on compiling Household Satellite Accounts. The Guide discusses the concept of unpaid household service work, focuses on identifying methodological and implementation issues with measuring own-use production work of services, and the challenges associated with both the measurement of labour input and the subsequent valuation.

This extract has been prepared for translation purposes and includes selected parts of the Guide: chapter 1 "Introduction, overview and main conclusions" and chapter 2 "Concepts and definitions". The literature references mentioned in this extract are listed in the full version of the Guide.

The full text of the Guide has been sent to all members of the Conference of European Statisticians for electronic consultation. It is available at: www.unece.org/index.php?id=43851. Subject to a positive outcome of the consultation, the Guide will be submitted to the 2017 plenary session of the Conference of European Statisticians for endorsement.

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I. Introduction, overview and main conclusions

A. Why this Guide?

1. In 2013, UNECE published *Guidelines for Harmonizing Time-Use Surveys* that identified unpaid work as one of the areas where information from time diary surveys is vitally important for informed policymaking, and for which other sources do not provide adequate data. A lack of information on unpaid household service work might lead to misinformed policy conclusions. For instance, an increase in services, such as childcare or long-term care provided by the government or private sector, increases the quantity of goods and services produced in a country. In fact, this would simply reflect that the production of the same service takes place in another institutional sector instead of the household sector.

2. Some countries have started to value these activities through a Household Satellite Account, which provides important information on the economy and society. However, there is currently no general agreement on the methodological choices in resolving the measurement challenges. The relevant international guidance dates back for more than a decade. It is therefore necessary to revisit the existing national experience and provide guidelines on these issues. Further need for updated guidance emerges from the 2013 “Resolution concerning statistics of work, employment and labour underutilization” of the International Conference of Labour Statisticians (ICLS). The Resolution provides operational concepts, definitions and guidelines for distinct forms of work, which have implications on the classification and analysis of activities related to unpaid household service work.

3. To meet the need for methodological guidance on these issues, the Bureau of the Conference of European Statisticians (CES) in 2014 established a Task Force for developing guidance on valuing unpaid household service work. The Task Force worked through 2015-2016 to develop the present Guide.

4. The objective of the Guide is to provide guidance to national statistical offices on selecting and applying methods for valuing own-use production work of services, and on compiling Household Satellite Accounts. The remaining element of unpaid household service work – the production of services for other households, or more simply volunteering – is considered to entail a number of different, and complex methodological challenges considered too great to be dealt with in this Guidance. Implementation of the Guide’s recommendations would improve international comparability of statistics on unpaid household service work.

5. The Guide is based on the experience of UNECE member countries and other developed countries participating in the work of the Conference of European Statisticians¹.

B. Importance of unpaid household service work

6. Placing monetary values on activities carried out in the household is not straightforward since the work is unpaid and often produces intangible services. Related measurement challenges

¹ The Conference of European Statisticians is composed of the Heads of national statistical organizations in the UNECE region (for UNECE member countries, see http://www.unece.org/oes/nutshell/member_states_representatives.html) and includes in addition countries from outside the region, such as Australia, Brazil, Chile, Colombia, Japan, Mexico, Mongolia, New Zealand and Republic of Korea. The major international organizations active in statistics in the UNECE region also participate in the work, such as the statistical office of the European Commission (Eurostat), the Organization for Economic Cooperation and Development (OECD), the Interstate Statistical Committee of the Commonwealth of the Independent States (CIS-STAT), the International Monetary Fund (IMF) and the World Bank.

include the question of multitasking as, for example, it is possible to prepare a meal, watch over a small child and help an older child with their homework all at the same time. Furthermore, there is a question about the borderline with household service work and leisure – some people would regard gardening as a chore while others see it as leisure.

7. Conventional economic statistics, such as national accounts and employment measures, are largely designed to measure the market economy and most countries exclude unpaid household service work. Economists have argued for many years that ignoring these services introduces biases in various areas of economic analysis.² Pigou (1920), for instance, noted, “If a man marries his housekeeper or his cook, the national dividend is diminished”. Similarly, Mitchell et al. (1921), Kuznets (1944), and Clark (1958) pointed out by not taking into account income in kind provided by productive household activities significantly underestimates national income. The services that result from own-use production work of services are unarguably a source of utility to households and contribute to their economic well-being. Nordhaus and Tobin (1972) contended that unpaid household service work contributes to economic welfare, which conventional gross national product (GNP) does not properly measure.

8. The measurement of unpaid household service work has particular relevance in the field of feminism economics. Weinrobe (1974) noted that measured growth rates are biased upwards as more women move into the labour market. This is because only the ensuing changes in market production are taken into account with no allowance for the resulting decline in unpaid household service work. Further, Walker and Gauger (1973) argued that conventional statistics grossly understate the economic contribution of women to production because women perform about two thirds of all housework. In the 1980s, feminist economists criticised the shortcomings of traditional labour and production statistics. These statistics, they argued, do not consider unpaid domestic work and therefore under-estimate women’s contribution to the economy, since women perform most of housework (Goldschmidt-Clermont, 1982; Chadeau, 1985).

9. More recently, the Stiglitz-Sen-Fitoussi Report (2009) made it clear that traditional macro-economic indicators, such as the gross domestic product (GDP), do not provide a robust measure of the economy. This, they argued, is due to its inability to shed light on the structure, distribution and on the inter-linkages of the different components of national incomes. At the international level, it has been widely recognised that a proper recognition and valuation of unpaid household service work would allow a better assessment of the economic and social impact of policy options. Measuring unpaid household service work helps to uncover hidden aspects of the economy raising vital policy issues that have long remained invisible. For instance, an increase in industrialization can lead to a shift in the consumption of market-based services where they were previously produced in the home. This is likely to result in under-estimation of material well-being before industrialization and an overestimation of economic growth during the transition period. Indeed, current measures of well-being focusing only on market activities are not fully reliable when there is a significant amount of unpaid work or in cases where there is switching between paid and unpaid work (Weinrobe, 1974). Finally, several own-use production work of services activities, such as formal or informal education, health care and bearing children represent human capital formation and are important to ensure the sustainability of well-being and economic growth (Fraumeni, 2005).

² Ezra Seaman (1846) spoke of adding various services, including “ordinary domestic labour” to estimated income, and this treatment of all services raised income by about one-third. In 1852, however, he excluded from the “rank of productive industry, housekeeping, the labour of domestic servants,” and other services, on the basis that they are not material products.

C. Overview of the Guide

10. The Guide discusses the concept of unpaid household service work, focuses on identifying methodological and implementation issues with measuring own-use production work of services, and the challenges associated with both the measurement of labour input and the subsequent valuation. The Guide provides recommendations aimed at producing estimates that are consistent with national accounting concepts and comparable across economies. The Guide limits the production boundary to own-use production work of services recognising that the measurement and valuation of the provision of services for other households – essentially volunteering – poses a number of measurement challenges that require separate guidance. Finally, the Guide provides examples of how own-use production work of services has been measured in selected country-specific contexts, before concluding with some examples of more detailed analysis, and suggestions for further research areas.

1. Chapter 2: Concepts and definitions

11. Chapter 2 of the full version of the Guide focuses on the concepts and definitions related to unpaid household service work. Discussions of unpaid household service work begin in the context of the System of National Accounts (SNA) production boundary, outlining how unpaid household service work sits outside of this.

12. Next follows a formal definition of unpaid household service work, underpinned by the framework established at the 19th International Conference of Labour Statisticians. Unpaid household service work consists of two elements – own-use production work of services and volunteer work. Own-use production work of services is activity to provide services for own final use, whereas volunteer work is non-compulsory activity to provide services for others. As iterated earlier, this guidance is focusing on own-use production work of services. The Guide recommends that the measurement and valuation of volunteer services be considered as an area for future research work.

13. Chapter 2 next discusses how the third party criterion largely guides the definition of unpaid household service work. According to Hawrylyshyn (1977), unpaid household service work is regarded as ‘those economic services produced in the household and outside the market, but which could be produced by a third person hired on the market without changing their utility to the members of the household’. Following this is a definition of the full set of activities that should be included when measuring own-use production work of services.

14. Chapter 2 of the full Guide concludes by outlining the main approaches to valuing own-use production work of services –the input and output approaches. While the detailed methodology is left to Chapter 3 of the full Guide, this section of guide describes the preferred conceptual framework. This is to value own-use production work of services using the input (sum of costs) approach, using the gross generalist wages.

2. Chapter 3: Methodological approaches

15. Chapter 3 of the full Guide provides detailed accounts of some of the core methodologies regarding the methodological approaches to measuring own-use production work of services. It begins with a discussion on the collection of data – primarily time-use data to feed into the input approach. Guidance has already been drafted on time-use data by United Nations Statistics Division³ (UNSD), United National Economic Commission for Europe⁴ (UNECE) and Eurostat. This Guide references these documents without repetition.

³ Guide to producing statistics on time use, UNSD, 2005.

⁴ Guidelines for harmonizing time-use surveys, UNECE, 2013.

16. Next, the Chapter provides details of the various options available under the input approach to valuing own-use production work of services. The main source of information to value the time spent on own-use production work of services are wage rates. However, countries have many choices to make. For instance, the opportunity cost approach – valuing time at the wage rate of the person performing the work – or the replacement cost – valuing the work at the wage rates of professionals in the market. Within the replacement cost approach, further options are available. Work can be valued using the generalist wages (e.g. housekeeper) or specialist wages (e.g. chef, child-minder etc.) While the chapter specifies a number of various options, the Guide recommends valuing the time spent on own-use production work of services using generalist wages before tax (gross).

17. Following the estimation of compensation for labour input, further calculations are required to estimate the sum of all costs. These include the return to capital, which recognises the productive capacity of, for instance, household appliances in delivering own-use production work of services. Further adjustments are required for the treatment of taxes and benefits, and intermediation consumption.

18. The chapter concludes with a description of the output approach. This approach differs significantly from the input approach; the starting point is measuring the volume of services produced rather than the time spent providing them. While the output approach is preferred conceptually, this Guide considers the data requirements too difficult to overcome to be a recommended approach. Nonetheless, the Guide provides an example for own-use production work of childcare services, and describes an approach to measuring the number of hours that children are cared for by care providers.

19. The estimated volume of services is then valued using the nearest market equivalent prices. Using the example of childcare, the chapter discusses the relative merits of different prices – in this case, that of a live-in nanny and a child-minder. The chapter concludes by comparing results from the input and output approaches.

3. Chapter 4: The structure of household satellite accounts

20. Chapter 4 of the full Guide outlines how countries should construct a household satellite account – an accounting framework for measuring own-use production work of services that is consistent with national accounts, allowing robust comparisons with traditional market-based activity.

21. The chapter first defines the SNA production boundary of which the own-use production work of services sits outside. The Guide then proposes a simplified satellite account, maintaining the established SNA production boundary. In other words, it incorporates the physical units of own-use production work of services – measured in hours – without valuation, and therefore does not affect headline macroeconomic variables such as GDP.

22. Chapter 4 then proposes a second table that extends this production boundary by including the value of own-use production work of services. This requires a number of adjustments to the existing SNA framework. First, the table reconsiders households' final consumption expenditure as inputs to the production of own-use production work of services. For instance, household expenditure on flour is reclassified as intermediate consumption of the production of meals for own-consumption. Furthermore, household appliances such as vacuum cleaners are reclassified as productive capital in the cleaning of homes, requiring an estimation of depreciation and return on investment.

23. Further adjustments are required for the receipt and payment of taxes and benefits directly related to the production own-use production work of services. In some countries, households receive direct benefits for looking after children, or disabled people. This framework treats this activity as a form of subsidy, and accounts for it when calculating the output and gross value added (GVA) of the own-use production work of caring services.

24. Overall, this proposed supply and use table provides a framework for estimating the GVA of own-use production work of services in a manner that is comparable with traditional economic activity. This allows a number of useful and informative analyses. First, the value of activity produced within the home compared directly to that taking place in the market. Further, it provides a measure of “extended-GDP” – that is, conventional GDP plus the value of own-use production work of services.

25. Following this, the chapter describes the process for producing an extended sequence of accounts for the household sector. By doing so, it recognises the production and consumption of own-use production work of services as a form of income in-kind, thereby proposing an alternative measure of household disposable income. This allows a different take on traditional economic analyses of inequalities and poverty - further explored in Chapter 6.

4. Chapter 5: Implementation and measurement challenges

26. Chapter 5 of the full Guide explores many of the challenges surrounding implementation and measurement that countries may face when measuring own-use production work of services. The first section of the chapter presents a range of alternative solutions to the measurement of labour inputs. In doing so, it examines the various choices in collecting information on time-use. For instance, should data be recorded via a full time-diary, or less resource-intensive stylized questions? The chapter recommends a full diary approach when possible, but does suggest that a light time-diary is a promising alternative if resources are constrained.

27. This chapter then defines the full classification of activities for countries implementing a light diary. The categories recommended within Resolution I of the 19th ICLS are regarded too broad. Instead, the Guide lists a more detailed set of activities based on a trial version of the International Classification of Activities for Time Use Statistics (ICATUS) developed by the UN Statistics Division. The Guide recommends that countries use these activities in designing future time-use surveys.

5. Chapter 6: Reporting

28. Chapter 6 of the full Guide describes a range of possible indicators concerning own-use production work of services that are useful for policy setting. It suggests a series of general indicators ranging from the number of hours devoted to own-use production work of services, to comparisons of GDP per capita with and without own-use production of services included. Finally, the chapter concludes by providing specific recommendations regarding the periodicity and breakdowns of measures. This Guide recommends that countries should aim to produce measures of own-use production work of services at least every 5 years. Further, to ensure comparability, countries are encouraged to harmonise reference periods, and publish on years ending in 5 and 0. In terms of breakdowns, the Guide recognises the importance of the gender dimension in own-use production work of services. It recommends that, at a minimum, measures of own-use production work of services are broken down by sex. In addition, measures should be disaggregated by age and household composition.

6. Chapter 7: Country-specific case studies

29. Chapter 7 of the full Guide presents a range of country case studies providing examples of issues raised within the Guide. The examples from Canada (section 7.1), Australia (section 7.2), Mexico (section 7.4), Republic of Moldova (section 7.5) and United Kingdom (section 7.8) describe national approaches to measuring and valuing own-use production work of services. The rest of the case studies focus on specific issues, in particular United States (section 7.3) describes the effect on income inequality, Finland (section 7.6) focuses on the relation with disposable income, Switzerland (section 7.7) discusses different assumptions of wages and Italy (section 7.9) analyses the measuring consumption of fixed capital for own-use production work of services. The examples of the United States (section 7.10), Finland (section 7.11), and Switzerland (section 7.12)

discuss survey issues summarised below. The last example of Mexico (section 7.13) provides experience with connections between satellite accounts.

30. United States, Finland and Switzerland provide a number of country-specific examples regarding the collection of time-use information. The first example provides an account from the United States who have implemented a continuous, annual, time-use survey since 2003, by combining the annual American Time Use Survey (ATUS) and the Multinational Time Use Survey (MTUS). While this approach requires overcoming a number of challenges, the fact that it provides annual estimates allows frequent estimates of own-use production work of services.

31. Following the United States case study is an account of a light-diary approach, developed and tested by Finland. Attempting to overcome the lack of timeliness of full time diaries, the Finnish light diary classified 35 main activities – considerably less than the 146 categories in a full-scale survey. Furthermore, respondents were asked to record only one main activity so that the data collection be minimised. Nonetheless, the light diary was designed so that it was comparable with previous full-diaries. Overall, testing a light-diary provided some useful and informative results. For instance, despite low response rates (17%), the light-diary provided estimates that were close to those obtained from the full-diary. However, respondents reported difficulty in recording just one main activity, and therefore, it is recommended that future light-diaries allow for the recording of at least one additional parallel activity.

32. Switzerland outlines their experience of using a module on the Labour Force Survey (LFS) to measure labour input. Using this module, approximately two thirds of the LFS sample was surveyed regarding time spent on housework, caring, domestic tasks and voluntary work. The case study identified numerous advantages with this LFS modular approach. For instance, it was relatively low budget, meaning that Swiss decision-makers have had access to good quality information on domestic and family workload since 1997. Furthermore, because the module is attached to an employment survey, it enables comparisons of time spent in paid work and own-use production work of services for the same individuals. However, the survey was limited to only one person per household. This means that while the results provide some insight into household management (main responsibility for housework and childcare), it did not inform on the volume of own-use production work of services completed by all the members of a household together. Furthermore, there were issues of recall - individuals may not have remembered all of their unpaid activities on the reference day. Finally, the results relied on respondents correctly distinguishing categories of own-use production work of services- some might describe playing with children as childcare, and others as leisure.

33. The example of Mexico outlines how different satellite accounts can overlap in the phenomena that they are attempting to measure. For instance, the provision of help or care to other households may be captured in both household satellite and health satellite accounts. Recognising these linkages helps avoid duplication and achieve results that are consistent across satellite accounts. It can also promote synergies and knowledge sharing between teams working on different accounts.

7. Chapter 8: Current and future research work

34. Chapter 8 of the full Guide concludes by reporting areas of existing and ideas for future research regarding the measurement of unpaid household service work. The chapter begins with a long-standing issue – the treatment of simultaneous activities. Simultaneous activities take place in parallel with each other, such as looking after children while cooking a meal. There are numerous solutions to recording the time spent in simultaneous activities. For instance, one could record secondary activities in a separate table, or count both the primary and secondary in total.

35. Even if an agreement is reached on measuring the time spent on primary and secondary activities, issues arise when attempting to value this time. For instance, valuing time using a specialist wage is problematic for someone who spends an hour both cooking and looking after a

child. This adds weight to valuing the time spent on own-use production work of services using the generalist wage approach, but still issues will arise if one of the simultaneous activities is not household work. All of these issues taken together imply the direction of further research and thought towards to the treatment of simultaneous activities.

36. Chapter 8 then discusses some of the issues regarding the measurement of volunteer work. As stated earlier, the Guide focuses primarily on methodologies for the measurement and valuation of own-use production work of services. The measurement of volunteer work entails a whole set of measurement and valuation challenges many of which are similar to those addressed in this guide. While some guidance relevant to volunteer work exists (see ILO, 2011), the Task Force considers this as an area for follow up activities.

37. Next, the chapter focuses on research carried out in other countries that provide more in-depth analysis than this Guide recommends as a minimum. First is a summary of analysis carried out in Finland examining the relationship between household disposable income and the own-use production work of services. The Guide states that economic theory suggests poorer people should consume more unpaid household service work due to their reduced ability to contract these services in the market. However, testing this hypothesis proves the opposite, at least in this Finnish example. The authors conclude that income does not explain the amount of own-use production work of services taking place. A more important explanatory variable is the availability of good alternatives for outsourcing own-use production work of services.

38. The chapter explores further the relationship between own-use production work of services and household income. It presents a case study from the United States using measures of own-use production work of services to estimate income in-kind, and then derive several measures of inequality. Their results are enlightening. First, all of the inequality measures suggest that extended income is more equally distributed than money income. They conclude that virtually all of the difference in measured inequality between the two measures is due to the addition of a large constant - the average value of own-use production work of services - to money income.

D. Main conclusions

39. The Guide shows that it is possible to derive estimates of the value of *own-use production work of services*, and construct a satellite account to show the impact on GDP, consumption, and household disposable income.

40. In valuing *own-use production work of services*, statistical agencies have a range of options in terms of both measuring the inputs and valuation. In particular, countries face a choice of:

- The input or output approach to measuring the physical units of *own-use production work of services*;
- How best to collect information on the inputs to *own-use production work of services*;
- Which wage rates to use for valuing *own-use production work of services* if using the input approach? Replacement or opportunity cost? Generalist or specialist wages?
- Which products should be considered as intermediate consumption and household capital in the process of performing *own-use production work of services*?

41. For estimating the physical units of *own-use production work of services*, the Guide recommends the input over the output approach. The output approach has some attractive features, such as measuring directly the volume of services produced, and is more consistent with traditional national accounting exercises. However, the data burden required is significant, and nearly almost difficult to achieve in practice. Relatively more straightforward is the collection of time-use data,

and thereby, the recording of labour input into *own-use production work of services*. This approach allows a more refined level of analysis, and this Guide recommends disaggregating estimates of *own-use production work of services* by sex, age, and household composition.

42. While the collection of time-use data is more achievable than measuring the direct output of *own-use production work of services*, it is still not a trivial task. Full time-use surveys are resource intensive, requiring both considerable respondent and data coding burdens. The Guide outlines a number of alternative solutions to the full time diary surveys. For instance, light diaries, with a less detailed set of recorded activities are a promising alternative, and could be implemented more frequently to supplement less frequent full time diary approaches. Whatever method countries decide to collect time-use data, the Guide recommends harmonisation of reference periods across countries by collecting information on time-use in every year ending 5 and 0.

43. Following the collection of labour input into *own-use production work of services*, countries face a range of options in terms of valuation. First, the Guide recommends the replacement wage over the opportunity cost. Internationally, the latter approach is discounted as it can lead to counterintuitive results, for instance, that an hour spent looking after a child is more valuable when carried out by a lawyer compared to a secretary. Arguably, the skills required for these occupations have little bearing in the care of children, or other forms of household work.

44. The next question regards the choice of wage rates - generalist versus specialist wages. As outlined in Chapter 3, while there are attractive features to both approaches, the Guide recommends the generalist wage approach. This approach best accounts for the fact that the productivity of household members are unlikely to match those of specialist workers, and therefore the quality of service per hour of work is likely to be less. Furthermore, it is more useful for overcoming some of the issues raised by simultaneous activities as it makes it much easier to value an hour of childcare and cleaning done together.

45. Once arriving at a measure for the value of labour input countries can then compile a household satellite account. The Guide recommends undertaking this in two stages. The first stage is to add to the traditional supply and use framework of the national accounts information from time-use surveys and breakdowns of activities, such that *own-use production work of services* can be compared directly to their counterparts in the market. This first stage does not alter the production boundary described in the SNA, and merely records the time invested in the *own-use production work of services*.

46. The second stage extends the production boundary by including the value of *own-use production work of services*. This involves the reallocation of products from final consumption expenditure to intermediate consumption and household capital using the tables in the annex of Chapter 4 as a guide. Furthermore, countries need to account for the depreciation of household capital, following a straight-line depreciation perpetual inventory model, and estimate a return on the capital using the interest rate on debt securities. Finally, an adjustment is required for the existing taxes and benefits related to the direct provision of *own-use production work of services*.

47. The Guide describes the derivation of a full sequence of accounts for the household sector. Using information already existing in national accounts, this involves a series of adjustments, recognising the consumption of *own-use production work of services* as an income in-kind, to arrive at an adjusted value for household disposable income. While not explicitly recommended, countries can use this information to analyse a number of issues relating to income inequalities and poverty.

48. Finally, the Guide recommends a number of areas for further research work. Firstly, there is still no satisfactory method for dealing with the issue of simultaneous activities – when people do more than one activity at the same time. Secondly, volunteering, that is, the provision of services for other households, entails a number of measurement challenges out of the scope of this Guide. The Guide recommends that the measurement and valuation of volunteering services be addressed in a future guidance document.

II. Chapter 2: Concepts and definitions

A. Introduction

49. This chapter articulates the conceptual framework underlying unpaid household service work. The chapter begins by outlining how the concept of unpaid household service work fits within the broad framework of the SNA core accounts, how it contrasts with the underlying production boundary, and it formulates the suite of concepts that structure households' unpaid work.

50. This conceptual framework revolves around the so-called third party criterion, the set of activities that define households' unpaid work, labour input and its related concepts, the alternate valuation methods and the necessary caveats due to the absence of consensus in some areas.

B. The production boundary of the System of National Accounts and the general production boundary

51. The central framework of the 2008 System of National Accounts (2008 SNA) does not include the services produced by household for own consumption. The exclusion of these services is established in the SNA production boundary, defining which productive activities should be accounted for in the compilation of national accounts.

52. Economic activities, along with their related goods and services, covered under the 2008 SNA forms a kind of domain of definition. The 2008 SNA makes the distinction between the general production boundary and the restricted production boundary. In generic terms, the general production boundary covers production activities which entails the combination of labour, capital, and goods and services to produce outputs of goods or services under the control of a well-defined institutional unit that uses inputs (§6.24). In contrast, the restricted production boundary prescribes a more restrictive boundary, particularly in relation to unpaid activities within households (§6.26). While the production of goods within households is included in the 2008 SNA, the production of services is excluded with the exception of owner-occupied housing and the production of domestic and personal services by employing paid domestic staff. The main reasons for the exclusion of the main part of non-market services produced within households are summarised in § 6.30: *"..., the reluctance of national accountants to impute values for the outputs, incomes and expenditures associated with the production and consumption of services within households is explained by a combination of factors, namely the relative isolation and independence of these activities from markets, the extreme difficulty of making economically meaningful estimates of their values, and the adverse effects it would have on the usefulness of the accounts for policy purposes and the analysis of markets and market disequilibria."*

53. One of the more fundamental criticisms faced by the SNA concerns the above non-recognition of services provided within households as being part of the production boundary, thus not adding to output, value added and GDP. Consequently, GDP growth may be overestimated in times of an increasing participation in the labour market, which often coincides with a substitution of own-use production work of services towards purchasing the relevant services on the market.

54. The Report by the Commission on the Measurement of Economic Performance and Social Progress, more commonly referred to as the Stiglitz-Sen-Fitoussi Report (Stiglitz, Sen and Fitoussi, 2009), also acknowledges this point of critique, as part of recommendation 5: *"Broaden income measures to non-market activities"*, using the following rationale: *"... for many of the services people received from other family members in the past are now purchased on the market. This shift translates into a rise in income as measured in the national accounts and may give a false impression of a change in living standards, while it merely reflects a shift from non-market to market provision of services. Many services that households produce for themselves are not*

recognized in *official income and production measures, yet they constitute an important aspect of economic activity*". However, the Stiglitz-Sen-Fitoussi Report does not propose to change the central framework of the SNA. Instead, it suggests to compile "*comprehensive and periodic accounts of household activity as satellites to the core national accounts*", to complement the picture.

C. Defining unpaid household service work and own-use production work of services

55. In the context of the input valuation approach of *own-use production work of services*, it is necessary to measure the time spent in providing those services. However, before discussing the source data, which are the focus of Chapter 3, it is important to establish the conceptual underpinnings of the concept of work to establish a consistent scope for the unpaid household service work activities and, by extension, aid in ensuring the comparability of the statistics.

56. The 19th ICLS establishes the relevant framework. The framework is outlined in Resolution I of the Conference (*Resolution concerning statistics of work, employment and labour underutilization*).

57. For decades, statistics on the measurement of statistics on the labour force have been guided by standards established at the 13th ICLS in 1982. The framework did not include forms of work outside the SNA production boundary but within the general production boundary. This gap is particularly relevant to the subject matter of this report as it meant unpaid household service work was not identified within the framework and, therefore, frequently not measured.

58. To address the limitations that exist in the 1982 framework, a new resolution was agreed at the 19th ICLS. This resolution placed the emphasis on concepts that are the focus of the present chapter, and various measurement issues of relevance to the measurement of work activities, which are left to Chapter 3. Among the key changes agreed were:

- A definition for the concept of work, which covers all productive activities including those outside the SNA production boundary but within the General production boundary;
- A framework that distinguishes between different forms of work ranging from the intended destination of the production (own use or use by others) to other characteristics of the work. Within this framework, employment is more narrowly defined as work for pay or profit. Figure 2.1 outlines this framework;
- Employment (as now defined) remains the reference point for labour force statistics and unemployment. However, additional labour underutilization indicators are defined to supplement statistics on unemployment.

59. Figure 2.1 below shows how the different work activities identified in the framework align with the SNA and General Production Boundary. The Guide focuses on measuring own-use production work of services, the box highlighted in green.

60. By aligning the definitions used in this guidance to the forms of work framework, a consistent scope of activities can be identified for measurement. Theoretically 'unpaid household service work' (the subject of this guide) can cover two of the forms of work identified in the framework namely "*own-use production work of services*" and "*volunteer work of services*".

Figure 2.1
Forms of work framework and relationship to SNA, 2008

Intended destination of production	for own final use		for use by others					
Forms of work	Own-use production work		Employment (work for pay or profit)	Unpaid trainee work	Other work activities*	Volunteer work		
	of services	of goods				in market and non-market units	in households producing	
							goods	services
Relation to 2008 SNA	Activities within the SNA production boundary (restricted production boundary)							
	Activities inside the General production boundary (general production boundary)							

Source: ILO (2013). Available from http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/normativeinstrument/wcms_230304.pdf

61. “Own-use production work of services” (or own use provision of services) is defined in the framework as activity to provide services for own final use. This covers a wide range of household services ranging from cooking and cleaning to childcare or caring for elderly family members. An important element of the definition relates to the meaning of ‘own final use’. Within the standards, this is clarified as covering activities where the services produced are consumed by household members, or by family members living in other households.

62. “Volunteer work of services” is defined as any unpaid, non-compulsory activity to provide services for others. In the case of volunteer work production “for others” refers to work performed:

- through, or for organizations comprising market and non-market units (i.e. organization based volunteering) including through or for self-help, mutual aid or community-based groups of which the volunteer is a member;
- for households other than the household of the volunteer worker or of related family members (i.e. direct volunteering).

63. These two forms of work can involve very similar activities and the boundary between them is identified based on the recipient of the services in question. As an illustration cooking meals and bringing them to an elderly relative at their home is considered *own-use production work of services*, while doing the same activity but for the benefit of a non-family member in another household is considered volunteer work.

64. Therefore, in measuring unpaid household service work it is recommended that in addition to identifying the type of activity and the time involved, the nature of the intended recipient(s) must be clearly delineated in order to allow the activities to be separated between own use provision of services and volunteer work.

65. The distinctions between *own-use production work of services* and volunteer work mean that they may require alternative approaches both from a measurement and valuation point of view. The bulk of this guide has been developed with a focus on the measurement and valuation of *own-use production work of services*. It is very important that the scope of activities covered by any estimates should be transparent, using appropriate methods. Following this guide will allow estimates to be developed for *own-use production work of services*; nonetheless, much of the guidance will also be of relevance for volunteer work. The Task Force considers that measurement

and valuation of volunteer work is a subject that would benefit from future work to provide specific guidance. Chapter 8 discusses this further.

66. In addition to defining the concepts, the resolution covers various issues of relevance to the measurement of work activities. These include:

- Population coverage – recommended as usual residents for the purpose of statistics of work;
- Age limits – different age limits will be relevant depending on the country context and the particular policy needs (e.g. if the working activities of children need to be measured).

67. In the design of any survey used to collect statistics of work, these issues (along with many others) must be taken into account. They will be particularly relevant in comparing statistics from different sources. It is generally expected that measurement will be undertaken through household surveys. The issue of measurement of work activities is discussed more in Chapter 3 and Chapter 5.

68. An important element of the definition of work from the 19th ICLS is the concept of the third party criterion. Hawrylyshyn (1977) describes this in a form that appeals for its combination of economic theory guidance and common sense. Hawrylyshyn regards unpaid household service work as “those economic services produced in the household and outside the market, but which could be produced by a third person hired on the market without changing their utility to the members of the household”.

69. This so-called third party criterion is central to the assessment of whether services should be recorded as work or just leisure. At the core of this distinction is the difference between productive and non-productive unpaid household service work. Under this view, an activity is productive only to the extent that it can be delegated to another person. For example, activities such as cleaning, house maintenance, laundry and footwear care, shopping and household management, providing help to other households and volunteer work comply with this criterion, which make them in scope for the measurement and valuation of unpaid household service work. In contrast, activities that do not lend themselves to exchange and benefit only the person doing it such as watching a moving are excluded. Similarly, the output of goods (clothing, hunting, fishing, collection of firewood), even though carried out with unpaid work and for own consumption purpose, is not considered to be part of the activities to be measured, owing to the fact that they are already accounted for as part of the SNA core accounts.

70. The Guide emphasises that households may be of any size and therefore unpaid household service work should be measured in single-persons households if someone can be hired to perform the activities. However, the single-person households hours dedicated to self-care health grooming, give therapies are excluded.

71. Overall, activities that do not involve producing services, such as self-administered personal care and activities that cannot be performed by another person on one’s own behalf are considered to be outside the scope of work as defined in the standards from the 19th ICLS.

72. Although activities covered by the concept of unpaid work are adequately delineated, some exceptions still exist. For example, some productive activities (e.g. educating oneself and self-administered personal care) despite the fact that they comply with the third person criterion are excluded, while others that can be viewed as leisure (e.g., gardening, playing with children) are included. The classification of own-use production work of services activities should, as far as possible, be grounded in a sound conceptual framework, such as the one agreed at the 19th ICLS, and should preclude judgement calls based on local circumstances.

D. What activities should be included?

73. Many international institutions have detailed the activities that are considered part of *own-use production work of services*. In addition, the Task Force in charge of putting together this Guide compiled an inventory of activities considered under the wide range of existing national practices. The result of these efforts translated into the following set of recommended activities listed in Table 2.1, which offers the advantage of consistency with the 2008 SNA.

Table **Error! No text of specified style in document..1**

Recommended list of activities concerning own-use production work of services

<i>Activity</i>	<i>Description</i>	<i>Market comparison</i>
Housing	Cleaning, gardening, repair, home decoration and design, vehicle maintenance, moving house, garbage disposal and recycling, selling/disposing of household assets, purchasing services (repairs, arranging quotes etc.)	SNA CPA 55.1 (other categories may be required for these new activities)
Nutrition	Plan meals, buy the ingredients, prepare and serve meals, wash up, etc.	SNA CPA 55.3.5, 15.3, 1.1
Clothing	Buy clothing or material to make clothing, washing, ironing, sewing, etc.	SNA CPA 18.2, 93.01
Management and shopping	Paying bills and budgeting managerial and administrative work, buying goods and material for internal use or for further processing, etc.	No market comparison
Care: (Child, adult and animal)	Care for children, ill persons, the elderly or other members of the household including pets.	SNA CPA 85.32
Transport	Performing transportation services on own account	SNA CPA 60.22, 50.20

74. While this set of activities represents the common denominator across international practices, countries should not view this list as exhaustive or as operational guidance for data collection. Cultural differences may lead to a variance in the delineation of normal own-use production work of service activities that could be contracted to the market. Members of the international community should adopt a flexible approach, which strives to meet international guidelines all the while reflecting the local peculiarities in their own national program. Similarly, the approach must be forward looking to guarantee that measures of own-use production work of service keep up with the changing environment such as the offload of some market activities to own-use production work of services activities (e.g. self-serve gas stations, banking and other online services). Existing classifications on time-use, as discussed further in Chapter 3 and Chapter 5, are an important reference point in designing data collection and dissemination programmes.

E. Valuation techniques - the input and output valuation approaches

1. Introduction

75. One of the most important issues to consider when including own-use production work of services activities within the production boundary concerns the valuation of the relevant services. Given that directly observable market prices for these services are not available, economist

statisticians have to impute a price from otherwise observable data. Two methods for inferring the value of own-use production work of services have commonly been utilized: the input valuation approach and the output valuation approach. Both will be discussed briefly below and in more detail in Chapter 3. Here, one should acknowledge that both methods could reinforce each other, by comparing the results of both methodologies.

76. The output and input approaches basically use the same elements – intermediate consumption, taxes less subsidies on production, consumption of fixed capital (or depreciation), and (net) operating surplus. The calculation for each approach is presented below.

Output-based method

$$\begin{aligned} & \text{Value of outputs (quantity } \times \text{ price) at market equivalent prices} \\ & \quad - \text{intermediate consumption} \\ & = \text{gross value added} \\ & \quad - \text{consumption of fixed capital} - \text{other taxes on production} \\ & \quad + \text{other subsidies on production} - \text{return to capital} \\ & = \text{imputed compensation for labour input} \end{aligned}$$

Input-based method

$$\begin{aligned} & \text{Imputed compensation for labour input (units of time valued at suitable wages)} \\ & \quad + \text{other taxes on production} - \text{other subsidies on production} \\ & \quad + \text{consumption of fixed capital} + \text{return to capital} = \text{gross value added} \\ & \quad + \text{intermediate consumption} \\ & = \text{value of output (sum of costs)} \end{aligned}$$

2. The input valuation approach

77. As defined by Chadeau (1992) “the input approach consists of imputing a money value to labour inputs directly. Fixed capital consumption, net indirect taxes and intermediate consumption are then added to obtain an estimate for the value of market household production”. Under this approach, the goal is to arrive at a market-equivalent price using a type of costs-based approach to the valuation of the relevant services. The value of output is thus assumed equal to the sum of costs related to the inputs of labour, capital and intermediate goods and services. Often non-labour inputs are ignored, as these inputs are already counted as personal expenditure on goods and services in GDP. However, different from applying this methodology to government services where actual salaries and wages are paid, the use of the cost-based methodology in the case of own-use production work of services is more problematic, the main reason being that for the main part of the costs involved, i.e. labour input, no actual payments are involved. Therefore, one needs to impute a value for compensation of employees.

78. The Guide recommends making use of the input method to valuing own-use production work of services in view of the availability of information on the labour, capital and other materials. Implementation of the input valuation approach requires information about time use of respondents, the use of household equipment and the intermediate consumption of goods and services used by households in the production process. An estimate of the capital service flows and of the depreciation of household equipment is also needed.

79. Furthermore, the Guide recommends that valuation be based on the replacement cost generalist approach (RC-G) which consists of taking market wage rates from similar paid work occupations and applying them to the hours spent doing own-use production work of services activities. With this valuation method, hourly earnings of individuals who are engaged in similar activities in the market sector are used to value the amount of time spent on own-use production work of services. Schreyer and Diewart (2014) also argue for a replacement cost as a way of valuing labour input into own-use production work of services. Their theoretical findings lent “support to giving preference to a replacement- cost valuation, as long as the purpose is measuring the value of household production”. Bridgman (2016) extends this analysis to an environment with capital durables and show that the financial rate of return is the correct imputation for capital

services. Replacement costs should be based on gross wages (i.e. before-tax) and includes fringe benefits (such as sick leave, paid vacations), and an estimate of employers' social security contributions. The rationale behind the additions to wages is that households pay for these supplements if they buy market substitutes rather than making such products themselves.

80. Various consumer durables are used during own-use production work of services. It is then "preferable to estimate a value of the capital services that can be derived from using the capital goods over their entire service life, instead of using numbers on the annual purchases". These households' consumer durables expenses, treated as current expenditures in the core SNA accounts, are capitalized.

81. The Guide recommends that gross operating surplus (GOS) be included to value own-use production work of services. Moreover, the Task Force is of the opinion that the best methodology to estimate GOS is the so-called capital services methodology outlined in more detail in Chapter 3.

3. The output valuation approach

82. In this approach, the value of services produced by own-use production work of services activities is set equal to the price to be paid for similar services traded on the market. The output is then calculated by the number of units produced times the relevant market prices. For example, if a factory makes one million toy cars in a year and sells them for £3 each then the total output equals £3 million. For market services, businesses would normally do this calculation themselves and report the total monetary value of the turnover directly (which then needs to be adjusted for the changes in the value of inventories of finished products).

83. The application of the output valuation technique in valuing own-use production work of services looks simple and straightforward in theory, but in practice it shows to be quite challenging; there is very limited data on the volume of own-use production work of services produced. It may be feasible to find suitable equivalent market prices for own-use production work of services. It may be more problematic to adjust for differences in quality. Furthermore, the services will not be truly similar, in the sense that having a dinner outdoors is not equivalent to cooking meals at home. Taking care of one's own children is different from the services provided by a nanny or childcare. It is with these considerations in mind, and the greater availability of time-use data, that the Guide recommends measuring own-use production work of services using the input approach.

84. With the challenges involved with developing estimates of the value of own-use production work of services it is likely that established methods of quality assurance will be required to limit the impact of methodological/data driven bias. Where the output valuation technique relies on different data sources to the input valuation technique, it may then be triangulated with the input valuation technique to improve the accuracy of valuations of own-use production work of services.

85. In absence of a time-use survey, the primary data source for producing input technique valuations, the output valuation technique represents a good alternative approach for valuing own-use production work of services. It can be timely to produce, highly comparable with market equivalent services, and represent an effective method of capturing market equivalent values without having to estimate a range of individual components.

86. However, if the output valuation is used in isolation, any understanding of the hours of own-use production work of services undertaken is lost and without a record of the working hours it is not possible to calculate the productivity levels associated with own-use production work of services (output per hour worked or output per worker) (See Holloway, 2002). In addition, because the output method creates a 'catch all' valuation of output the detail relating to the person producing own-use production work of services may not be captured, limiting the potential policy application of any results.