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A Broader Framework for Wellbeing and Sustainability in the *System of National Accounts*

Guidance proposed by the Task Team on Wellbeing and Sustainability[1]

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Part I: Well-being and Sustainability

[1] A full list of participants to the ISWGNA Task Team on Wellbeing and Sustainability is included in Appendix A. The lead author is particularly indebted to Peter van de Ven (OECD) who contributed substantially in many areas of the document.

1. Introduction

The SNA provides an overarching framework for measuring macroeconomic activity via a sequence of integrated accounts, and by its very nature sets boundaries around what we understand to be "the economy". These boundaries have real-world impacts on decision-making, shaping the narrative on what we understand as progress. Recent priorities for SNA development have focused, for example, on populating the full sequence of institutional sector accounts, from production to wealth accumulation[1]. This fuller information system serves many key policy objectives, like monitoring the material well-being of households through household disposable income, final consumption and wealth, but still fails to address many important questions on wellbeing and sustainability.

While not designed for this purpose, for lack of suitable alternatives, the headline indicator of the System of National Accounts, the Gross Domestic Product (GDP), is often misused to represent societal progress. The proliferation of alternatives to modify or expand such an indicator to address wellbeing, sustainability and the negative externalities of economic activity goes back many decades. Significant and recent initiatives include:

- The United Nations Sustainable Development Goals (SDGs), building on economic growth while addressing a range of social and environmental needs.
- The Stiglitz-Sen-Fitoussi "Report by the Commission on the Measurement of Economic Performance and Social Progress", calling for statistics to move *Beyond GDP* and close the gap between aggregate production, citizen's wellbeing and long-term sustainability.
- The development and dissemination of dashboards with indicators covering various aspects of wellbeing by international organisations (e.g. OECD) and at country level.
- Inclusive Growth policies adopted by many international organizations (e.g., OECD, World Bank, IMF) that seek to generate growth through inclusion.
- Measures of comprehensive or inclusive wealth for an enhanced understanding of sustainability as a complement current national income.

These recent initiatives reflect a widely held view that wellbeing and its sustainability over time are complex multidimensional phenomena that can't be addressed by a single summary indicator. Its effective assessment warrants the development of a broader measurement framework to monitor and analyse interrelations between its multiple aspects, enabling a better understanding of trade-offs and win-wins. It involves moving away from the primary focus on economic growth as the one and only indicator of progress.

In addition to re-focusing on broader measures of wellbeing and its sustainability, recent trends in globalization and digitalization have resulted in a new economic reality, and also require a re-thinking of how to account for economic progress. Production aggregates are nowadays even less indicative of the evolution and distribution of household income,

[1] An important example of recent international efforts is the G20 Data Gaps Initiative (DGI), which aims to enrich the understanding of linkages between real and financial activity in the wake of the 2008 global financial crisis.

consumption and wealth, and even within the household sector, the factors contributing to material wellbeing are increasingly polarized.

While an ideal framework could be envisioned in which linkages between national accounts and social and environmental statistics are fully elaborated, the short-term challenge for the upcoming update of the 2008 SNA is to define a feasible scope that will leverage the comparative advantage of the SNA as a coherent integrating framework and fully exploit the body of international guidance already available.

In accordance with the SNA research agenda and direction from the Inter-Secretariat Working Group on National Accounts (ISWGNA), the short-term strategy to better address these issues in the context of macroeconomic statistics is to develop guidance, including a further elaboration of the linkages to the traditional framework of purely economic national accounts, in five key areas:

1. Distribution of household income, consumption, saving and wealth
2. Unpaid household service work
3. Labour, education and human capital
4. Health and social conditions
5. Environmental-economic accounting

This guidance note, addressing considerations for a broader overarching SNA framework for wellbeing and sustainability, is aligned with individual guidance notes prepared for each of these five domains. It will address questions on how to appropriately expand and characterize this broader framework, with implications for the System of National Accounts (SNA). While an optimal vision may not be achievable in the short term, significant steps forward are proposed.

2. Existing Material

SNA 2008, Chapter 29: Satellite accounts and other extensions

Chapter 29 of the 2008 SNA deals with satellite accounts and other extensions to the System of National Accounts. Satellite accounts are described as a flexible mechanism to introduce new classifications or extend concepts in specialized accounts that are linked to, but distinct from, the core framework or central system. A broad range of options and examples are presented in the chapter, from theme-based accounts that reorganize or better specify existing detail, such as tourism, to those that extend the production or asset boundary, such as household unpaid activity.

The possible expansion into relevant non-monetary units (such as physical units or labour market characteristics) is highlighted in several examples of satellite accounts. Environmental accounting and the System of Environmental and Economic Accounts (SEEA) are cited as examples where physical units are essential components for effective analysis.

Satellite accounts are characterized as *optional* mechanisms to avoid overburdening the central SNA framework with unsustainable detail, or to experiment with new concepts and methods prior to their possible integration and implementation in core, headline indicators.

The next-to-last version of the current SNA, SNA 1993, included a lengthy section on *social accounting matrices (SAMs)***.** These were also characterized as optional special detail tables, elaborated as integrated expansions of Supply and Use tables and institutional sector accounts, to highlight, for example, distributions of income and expenditure and disaggregated labour market data consistent with national accounts. Other relevant detail for specific institutional sectors in monetary or physical terms could be introduced via this mechanism, to effectively make integrated connections with social statistics. The full material on social accounting matrices was not carried forward into the 2008 SNA, due to limited take-up and the need for more flexible options for presentation.

CES In-depth review of satellite accounts

In February 2018, the Bureau of the Conference of European Statisticians (CES) decided to undertake an in-depth review on satellite accounting. The review was prompted by a growing interest from the user community for more detailed information to meet specific needs, aligned with concepts and methods in well-established frameworks such as the SNA. Several handbooks on SNA satellite accounts have been developed by different organizations, and pressures to produce a range of specialized accounts put a strain on resources available to national statistical offices (NSOs). Statistics Canada, with the support of the OECD, Eurostat, UNECE, UNSD and the IMF, prepared the paper providing the main basis for the in-depth review.

At their November 2018 meeting, the Advisory Expert Group (AEG) on National Accounts agreed statistics could be enhanced to improve the consistent integration of 'core' national accounts and 'satellite accounts' on wellbeing and sustainability under a broader accounting umbrella. The AEG recommended that appropriate terminology and branding be developed to facilitate this integration. Consistent with this discussion, the in-depth review recommended that, under the umbrella of the ISWGNA, a guidance note proposing an extended set of economic, social and environmental accounts would be prepared, to be presented for endorsement to the United Nations Statistical Commission. It would address wellbeing and sustainability gaps in the 2008 SNA, including the measurement of unpaid household activities, environmental externalities, health and education.

Stiglitz-Sen-Fitoussi Report

One of the most important and influential initiatives for a better understanding of well-being is the *Report by the Commission on the Measurement of Economic and Social Progress* by Joseph Stiglitz, Amartya Sen and Jean-Paul Fitoussi. The report contains a sweeping range of recommendations, among which the first five relate directly to macroeconomic statistics:

- Recommendation 1: when evaluating material well-being, look at income and consumption rather than production.
- Recommendation 2: emphasise the household perspective

- Recommendation 3: consider income and consumption jointly with wealth
- Recommendation 4: give more prominence to the distribution of income, consumption and wealth.
- Recommendation 5: broaden income measures to non-market activities.

The report also had a number of recommendations on wellbeing and sustainability stressing, for example, that current wellbeing and long-term sustainability should be viewed separately, in a manner consistent with the SNA distinction between current accounts and asset accounts, the latter representing the sources for future income and wellbeing.

Importantly, the report does not contain a recommendation to capture wellbeing or sustainability in a single metric but considers wellbeing as a multi-dimensional phenomenon for which the dimensions should be defined, and appropriate indicators chosen.

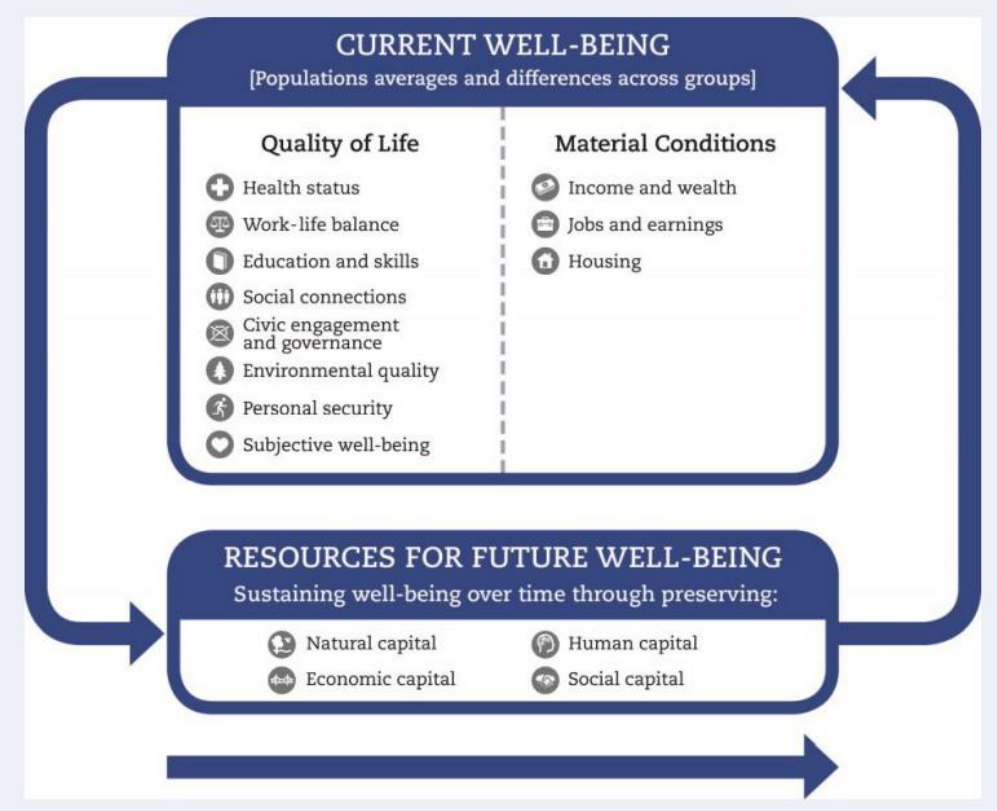
The report prompted, among other things, a shift in emphasis from aggregate production to the household sector and a recognition of the increasing divergence between GDP and household (adjusted) disposable income, the relevant concept for understanding material wellbeing of residents in a country. It also gave rise to an increased emphasis on distributional measures of household income, consumption, saving and wealth consistent with national accounts, to better understand how specific household groups are impacted by macroeconomic developments.

Wellbeing dashboards and indicator frameworks

Outside the macroeconomic statistics sphere, the Stiglitz-Sen-Fitoussi report gave impetus to the development of multidimensional wellbeing dashboards and indicator frameworks, such as OECD *How's Life*? This framework was developed in consultation with NSOs of OECD member countries, largely based on the recommendations of the Stiglitz-Sen-Fitoussi Commission as well as other national and international initiatives. It conceptualises wellbeing as a multi-dimensional construct, distinguishing between current well-being and its sustainability over time and, within the former, between material conditions and quality of life.

The 11 dimensions of current well-being in the *How's Life?* framework range from health status to education and skills, quality of the local environment, personal security and subjective well-being, but exclude "economic insecurity" due to lack of suitable indicators. Material conditions are detailed in three specific dimensions (income and wealth, jobs and earnings, and housing). As in the Stiglitz-Sen-Fitoussi report, the OECD framework also describes sustainability in terms of resources that are critical for future well-being (natural, human, economic and social capital).

OECD *How's Life?* Indicator Framework



Many country-specific wellbeing indicator dashboards have also been developed, with themes geared towards monitoring local issues and policy priorities. The Netherlands *Monitor for Well-being*, for example, reports annually on three themes: quality of life *here and now*, resources for the *future* and impacts *elsewhere*, on other countries[1]. The UK publishes a progress report biannually, covering health, natural environment, personal finances and crime, encompassing both objective and subjective measures.

[2] This is three-part distinction is based on the Conference of Economic Statisticians recommendations on Measuring Sustainable Development.

Sustainable Development Goals

The Sustainable Development Goals (SDGs) were adopted by the United Nations Member States in 2015. The 17 interconnected goals are wide-reaching and seek to unify global policy in economic, social and environmental spheres. A framework of indicators was developed to monitor progress, as a follow-up and review mechanism for the implementation of the 2030 Agenda for Sustainable Development. The indicator framework was adopted by the General Assembly in 2017 and covers 232 indicators associated with 17 goals and 169 associated targets.

While the goals and their associated indicators were determined by a political process, they have coalesced local policy target-setting in many areas of the world, and warrant consideration in the development of a broader SNA framework for wellbeing and sustainability.

Comprehensive or inclusive wealth

To contribute to an increased understanding of sustainability, measures of comprehensive wealth have gained momentum as a complement to economic indicators relating to current wellbeing. These broader wealth measures augment the traditional national wealth concepts of produced and financial capital to include both *natural* and *human capital.* While a third extension for assets in the form of *social capital* (trust, cooperation, civic engagement) is also acknowledged as an important contributor to future economic progress, its measurement has so far been restricted to non-monetary indicators. Developing concepts and measures to assign a monetary wealth value to social capital has not, up to now, been achieved.

Significant examples include the *2018 Inclusive Wealth Report*, produced by the United Nations Environment Program (UNEP) in collaboration with Kyushu University and other partners, and comprehensive wealth measures found in the World Bank's recent edition of *The Changing Wealth of Nations 2018, Building a Sustainable Future*. This report

demonstrates the feasibility of operationalizing these concepts for a wide range of countries with differing levels of development. Findings offer new insights on how wealth and its composition can complement current income measures for a fuller understanding of sustainable development.

In keeping with the concept of comprehensive wealth, the World Bank also publishes measures of adjusted net saving as part of its annual reporting of *World Development Indicators*. Adjusted net saving is measured as gross national saving less depreciation of produced capital, depletion of subsoil assets and timber resources and the cost of air pollution damage to human health, plus a credit for education expenditures.

Perspectives on broadened frameworks for economic wellbeing

Insights on how the SNA accounting system could be logically situated in a broader information system were offered by André Vanoli in the context of the IARIW-OECD conference in 2017 on the "Future of National Accounts: W(h)ither the SNA". The paper, *"The Future of the SNA in a Broad Information System Perspective"*, discusses conceptual and methodological considerations to extend the coverage of the national accounts central framework into four distinct spheres: Economy, Nature, People, and Society. Vanoli proposes to rebrand the traditional SNA as the *System of National Economic Accounts*, within this broader set of monetary and non-monetary measures.

Among the points highlighted in relation to wellbeing and sustainability are fundamental conceptual difficulties and implicit assumptions for equivalent transaction values required to monetize the dimensions of wellbeing. Vanoli suggests that this complicates (or perhaps precludes) the establishment of an integrated accounting system in the traditional sense. He also highlights key conceptual differences in production and asset boundaries between the traditional SNA and the SEEA and proposes alternate characterizations of the relationship of the economy and nature as "unpaid ecological costs" and "the accumulation of ecological debt".

Rutger Hoekstra, in his 2019 book, *Replacing GDP by 2030: Towards a Common Language for the Well-being and Sustainability Community***,** proposes an elaborate interdisciplinary framework, encompassing a body of science outside traditional welfare economics in, for example, the environmental, demographic or other social science fields. The proposed optimal framework elaborates multiple dimensions in addition to economic accounts, including physical, spatial, demographic and time use accounts, along with accounts enabling distributional and network analysis.

As background to his proposal, Hoekstra provides useful context on factors contributing to the apparent success of the 'GDP multinational' and the proliferation of a "cottage industry" of competing concepts and frameworks developed over several decades in reaction to the limitations of GDP as an indicator of societal progress. His appeal for broadening the narrative stresses the importance of coincident statistical and policy development.

In his 2019 article *"Measuring economic wellbeing and sustainability: a practical agenda for the present and the future"*, published in the Eurostat Review on National Accounts and

Macroeconomic Indicators, Peter van de Ven summarizes recent developments, illustrating key points with international results for the household sector. The article overlays a measure of pragmatism to the recent debate, in terms of integrating new elements such as households' unpaid activities, the environment and other aspects of wellbeing and sustainability. In addition to advocating for greater emphasis on household measures already available, van de Ven proposes a feasible approach to develop consensus on the further enrichment of the SNA framework to include a standard range of accounts for the environment, health, education and time use, drawing on the body of available guidance and without a strict requirement for monetary valuation.

3. Options considered

Pragmatic way forward towards an ultimate vision

While as a longer term goal it may be desirable to elaborate an overarching accounting framework or "system of systems" such as that proposed by Hoekstra, in which statistics on economic, societal and environmental issues in terms of monetary and physical measures are integrated and micro-macro linkages enabled, it is clear that such a vision is not achievable for the next SNA update. As a more realistic goal for the nearer future, one could envision the regular compilation of extended modules on, for example, environment, health, education and unpaid household activities, drawing on the body of guidance already available. They need not necessarily be compiled on a quarterly or annual basis, and those with a more structural focus could be compiled every 2-3 years, depending on local demands and the availability of source data.

Guiding principles for the expansion

Given the need to establish reasonable bounds of feasibility and the context provided above, the following guiding principles were established for an expansion of the existing SNA framework to appropriately address wellbeing and sustainability:

1. The expansion will be **restricted to *economic (material)* wellbeing and sustainability** and not all possible domains or indicators.
2. Any required changes to the central framework **will not compromise its current key applications** (for example by central banks and treasuries, for economic and fiscal policy or monitoring, understanding the business cycle).
3. It will **leverage the comparative advantages of the SNA as a coherent integrating framework,** identifying linkages and enabling integrated analysis among its distinct elements and the central framework.
4. **No one single indicator** will be featured, rather elaborations or variants will be developed in each of the domains identified.
5. **Non-monetary measures** will be integrated in each of the domains as appropriate to facilitate enhanced analysis.
6. In each of the added domains, the **focus will be on outputs**, allowing for analytical linkages to possible outcomes not in scope for the expansion.

7. To the extent possible, **the expansion in each domain will address the full sequence of accounts,** focusing not just on production, but also looking at income, consumption and wealth accumulation, with extended concepts where necessary.
8. To the extent possible, its design will take into consideration the future development of a **more fully elaborated, optimal framework**.
9. The expansion should seek a **broad correspondence with wellbeing indicator frameworks,** such as OECD *How's Life?* or the Sustainable Development Indicators, to enable extended analysis.
10. The broadened framework will **leverage guidance in well-developed satellite account frameworks** already available and subject to broad consultation, testing and implementation.

Communications and terminology

In developing the broader framework, clear communication is particularly important, and new terminology should be chosen with the goal of legitimizing the added elements as part of an expanded, internally consistent and non-optional new set of macroeconomic statistics. In this respect, the designation of "satellite accounts" vis-a-vis a "core", or "central", framework implying a hierarchy in terms of importance should be avoided. These terms will no longer be relevant and are proposed to be replaced by ***modules*** with ***extended accounts***, in each of the added domains.

4. Recommended approach – conceptual and practical aspects

This section includes a high-level summary of the highlights of preliminary guidance proposed by the five groups responsible for the key areas listed in Section 1. An in-depth guidance document is available for each domain, explaining options examined, considerations and detailed recommendations. These individual guidance notes are essential companion documents and readers are encouraged to refer to them for a full examination of the issues.

Distributions of households' income, consumption, saving and wealth

Guidance for the compilation of household distributional results in line with national accounts' totals draws on the substantive body of work already produced by OECD/Eurostat, ECB and the World Inequality team, and touches upon the following topics:

1) The importance of household distributional information.
2) The scope of the work (linking to relevant parts of the SNA).
3) Specific balancing items of relevance to household distributions, including deviations from standard SNA items.
4) Breakdowns of the household sector into more granular subgroups.

5) Compilation methods, including a detailed overview of specific conceptual and methodological issues that may be encountered.

Importance of the work

Guidance highlights the relevance of household distributional information, presenting multidimensional aspects of material well-being (i.e. income, consumption and wealth), with results consistent across accounts, coherent with macroeconomic aggregates, and comparable over time and across countries. The information is of considerable relevance for macroeconomic analyses and the monitoring of economic well-being and provides new insight on how specific household groups are faring in light of macroeconomic trends and policies.

Scope

While the starting point is the household sector as defined in the SNA, with the household as the unit of observation, the focus is on 'equivalized' results, using equivalence scales to arrive at comparable results accounting for household size and composition. Further, institutional households are treated distinctly from private households and the results for the latter category are presented as separately.

Alternative concepts

While standard SNA balancing items constitute the starting point, alternative concepts better suited to distributional analysis are also used. Examples include an alternative income concept that treats non-life insurance benefits and lottery winnings as capital transfers, with insurance premiums and the purchase of lottery tickets treated as consumption. On the wealth side, a broader wealth concept is introduced that includes social security pension entitlements. Consumer durables are presented as a separate (of which) subcategory for final consumption expenditure and as a memorandum item for wealth, bearing in mind that some (such as cars, yachts and planes) are important for specific household groups.

Household sector breakdowns

Possible breakdowns to present more granular household groups are proposed. As a minimum, compilers should target breakdowns by standard of living based on current income, showing income quintile groups, a median and, if possible, results for the top 10%, 5% and, ideally, the top 1%. Alternative breakdowns by main source of income, household type, housing status and by age of the reference person are also proposed.

Specific issues in compilation

Guidance proposes a step-by-step approach to produce distributional results highlighting the following specific compilation issues:

- The importance of recognizing inter-household flows and stocks.
- Allocations where direct micro information may be lacking (e.g., social transfers in kind, FISIM, non-observed and illegal activities).
- Linking data across different data sources using statistical matching techniques.

- Determining relevant equivalence scales.
- Keeping track of dynamics between household groups over time to break down changes in wealth into their underlying flows.

Finally, the importance of communication is highlighted, along with the need for metadata to accompany the results to explain how they differ from other (e.g. micro) distributional findings. A discussion of the relative strengths and appropriate uses of the distributional results, and, if possible, insight on margins of error is also recommended.

Unpaid household service work

The valuation of unpaid household service work is necessary to better measure total economic growth and living standards, taking into account nonmarket activity performed within and between households without monetary compensation. To that end, proposals build on existing guidance such as the UNECE guidance for valuing unpaid household work (UNECE, 2017) to inform the advancement of SNA guidance.

To match a diverse range of user needs, guidance revisits the third-party criterion and re-evaluates what should be in scope as forms of unpaid household services. In doing this, it considers how unpaid household service work overlaps with other areas of development for the SNA, such as informal healthcare and education. Challenges associated with measurement of unpaid household service work are discussed and best practice proposed for valuation methods. Finally, the note questions whether valuation is necessary for all purposes, proposing parallel physical accounts more closely aligned to day-to-day household experiences.

Definitions and concepts

Unpaid household services should include any activity which meets the third-party criteria (i.e. whether or not it could be contracted out to a market service provider). However, it is recommended that the following categories be used as a guide for identifying the types of productive activity which would meet the criteria and for assigning a value:

- Unpaid childcare
- Adult care
- Nutrition
- Transport
- Household management services
- Laundry and clothing services
- Informal volunteering
- Shopping,
- Information services
- Other unpaid household production not elsewhere classified

It is also recommended to further reflect upon the impact of digitalisation on the production of unpaid household services, as a follow-up to the proposals made by the Task Team on Digitalisation.

Methodology

Two alternative approaches to measure and value households unpaid service work are included in the guidance: the input approach and the output approach.

The Input Approach

The input approach tries to monetise unpaid household service work by estimating the "sum of costs" of the various inputs needed to produce the relevant services: labour, capital services, and intermediate consumption[1]. Time use data should be collected to produce valuations of the most important input category, i.e. unpaid labour. These should be produced on a regular basis at least once every 5 years but ideally on a quarterly basis in line with the core accounts. Time use surveys should be harmonised and designed to collect as much activity meeting the third-party criteria as possible.

A replacement cost approach to valuation of hours worked should be followed using gross wage rates paid for the production of equivalent market services. Specialist wage rates should be used but judgement should be applied to assess the suitability of some of these for typical household production in certain categories. For example, where average tradesperson salaries are used, it may be more appropriate to use an apprentice or general labourer's wage rate to reflect the market premium paid to qualified tradespeople.

Imputed adjustments for taxes and subsidies and gross operating surplus should be made for comparability with the valuations of market production in the core national accounts.

Where time use data is not available and the input approach cannot be applied, the output approach should be used as an alternative.

The Output Approach:

In the output approach, the basic mechanism for valuing unpaid household service work is to multiply quantities for each of the relevant household services with prices of similar services exchanged on the market. Market equivalent prices for unpaid household services should be carefully scrutinised for their suitability with which to value particular types of unpaid household service work.

Furthermore, to arrive at an estimate of the value added generated by unpaid household service work, a reliable household expenditure survey should be used to estimate

[1] The latter category is often ignored, because the relevant inputs are very difficult to disentangle. Furthermore, its inclusion would only lead to a reshuffling of final consumption expenditure categories, with no impact on major macroeconomic aggregates.

intermediate consumption of goods and services purchased from the market and used in the production of unpaid household service work.

More generally, it is recommended to confront the resulting numbers from the input approach with the valuations when using the output approach, to arrive at the highest possible quality estimates for the output and value added of unpaid household service work. Any substantial differences should preferably lead to additional research, and in the end lead to a reconciliation of both approaches.

Extended SNA measures

Estimates of extended GDP, factoring in unpaid household service production, should be calculated to accompany traditional GDP measures. Divergence of growth rates may indicate activity shifting across the production boundary, while extended GDP may give a more accurate representation of economic growth better aligned to experienced economic welfare.

To mitigate distortions associated with monetary valuations, additional physical accounting may be added to supply and use tables. Some further research is needed to define whether industry breakdowns within existing supply and use tables are optimal for unpaid household service production and the estimation of extended GDP.

Future users of such extended accounts on unpaid household services will likely want to see results in volume terms as well. This is an area for which more detailed guidance still needs to be developed.

Optional parallel time-based accounting

Time accounting approaches may be set up to run in parallel to the wider SNA framework to provide a table which aligns as closely to the household perspective as possible. However, further research is also needed to identify the optimal applications of such tables, particularly from a welfare policy perspective.

Labour, education and human capital

Issues surrounding the measurement of labour and the value of human capital are of central importance to policy making in the current environment. While challenging, these issues must begin to be confronted if the System of National Accounts is to retain its value in meeting the needs of policy makers.

Existing guidance on the production of (more granular) estimates on labour, education and human capital is extensive and builds on:

1) National experience across a range of countries in producing labour accounts for a considerable number of years.
2) Several iterations in the development of education and training satellite accounts, culminating, most recently, in the Satellite Account for Education and Training guidelines produced by UNECE
3) The UNECE Guide on Measuring Human Capital.

Importance of the work

The System of National Accounts does not currently provide for a detailed articulation of labour and human capital. This stands in stark contrast to the guidance provided on other inputs into the production process such as capital services, and intermediate goods and services. This is a major gap with detrimental consequences for the utility and relevance of the national accounts.

Crucial policy questions that hinge on a better understanding of the links between the labour market, production and income include:

- Issues of inclusive growth, equity and the distribution of income
- Impacts on the labour market, and the changing nature of 'work', from changes in production arrangements, including those driven by digitalisation and globalisation
- Measurement of productivity and the ability to deliver real income growth to households

The idea of viewing human knowledge and abilities as an asset – as human capital - and to estimate its value is not new, but has gained more prominence in recent years, especially in the context of sustainable development. Policymakers are calling for ways to understand and quantify human capital, in order to better understand what drives economic growth and the functioning of labour markets, to assess the long-term sustainability of a country's development path, and to measure the output and productivity performance of the educational sector. Devising a robust methodology for the monetary valuation of the stock of human capital is especially crucial as studies suggest that human capital is the most important component of the total capital stock.

Options proposing changes to the existing SNA:

Labour accounts should be included within the central framework in the update to the 2008 SNA. This places labour in the same position as other inputs into the production process (produced capital, intermediate goods and services, etc.), and supports extensions to the accounts for valuing human capital.

These accounts would be described in a new additional chapter of the SNA, placed between current chapter 9 "The use of income accounts" and chapter 10 "The capital accounts". They would replace some elements currently covered in chapter 19.

The labour accounts will be based on the SNA production boundary and would, at a minimum, cover the labour domains of jobs, people, volume (hours), and payments. They should also include demographic breakdowns by gender, age and educational attainment.

Options proposing extensions to the SNA:

Extended accounts for education and training should be developed. These accounts would build on existing material, particularly the Satellite Accounts for Education and Training (SAET).

The Education and Training Account would be an extension on the central framework in that it includes (i) both monetary and non-monetary data; and (ii) own account (in-house) training.

The account should be produced in both current price and volume terms. The Education and Training Account in turn provides a step towards producing an extended Human Capital Account.

The Human Capital Account would provide stock estimates, in both volumes and current price terms, with demographic dimensions (gender, age, education attainment). The account would focus on point in time stock estimates, it would not be a full SNA-type account that, for example, described the flow changes to stock estimates.

It is expected that some countries will feel they lack the capacity to produce human capital estimates. However, the critical importance of human capital to economic development and progress means it is essential that we begin to engage on the topic. And this proposal would appear to be a sensible starting point.

Health and social conditions

Guidance in this area offers analysis of possible statistical treatments of health care goods and services, and who benefits from them, as a means to extend official measures. The objective is to propose options for indicators of health care that can either be embedded directly in traditional SNA estimates by adapting existing classifications and concepts or presented as extensions to the standard SNA framework. *A System of Health Accounts 2011* (*SHA 2011*) is a well-developed framework for classifying health expenditures by function, provider, and financing schemes, and serves as the foundation to achieve this objective.

Proposed guidance distinguishes options requiring a change in the SNA standard concepts and classifications from those developed as supplementary extensions.

Options proposing changes to existing *SNA* concepts and classifications include:

1) Updating and harmonizing classifications between the SNA and SHA
2) Identifying products relevant for meaningful measures of health care and supply and use tables with enough granularity to be policy relevant
3) Quality-adjusted measures of health care volumes
4) Inclusion of paid long-term social care services in addition to health care services

Options proposing alternate extensions to the SNA include:

1) Classification breakdowns for private health insurance claims and premiums
2) Expanding the production boundary to include unpaid household production of health care.

Indicators on health care can be built from SHA expenditure flow data. Those based on final consumption expenditures with breakdowns by function, provider, and financing schemes that can be cross tabulated are proposed to be embedded in standard estimates.

Indicators providing extensions of the SNA core framework include those based on, for example, employment or physical measures of assets (e.g., number of hospital beds) as well as those based on supplemental classifications of private health insurance and unpaid household production of health care and long-term social care services.

Recommendations are summarized in an annex to the guidance document, and support both SNA changes or supplements to existing measures. The primary recommendations for changes include updates to classifications for functions. Own-account production of occupational health services that is currently included in compensation of employees should be imputed as secondary output and allocated to intermediate consumption. The primary extensions to supplement the SNA include an expansion of the production boundary to reflect imputed expenditures for unpaid household health care and long-term social care, along with supplementary supply-use tables including these dimensions.

If harmonization of SHA 2011 and SNA 2008 is a goal, the SHA 2011 capital account must be modified to recognize expenditures on R&D in health as capital formation. Producers of health goods must also be included in the SHA provider classification and retailers' output must be limited to trade margins rather than treating their purchases of goods as intermediate consumption.

Environmental economic accounting

In contrast to other areas in scope for the SNA revision for wellbeing and sustainability, environmental accounting standards are well-developed in their own internationally endorsed framework, the System of Environmental-Economic Accounting Central Framework (SEEA CF).

Guidance in this area therefore mainly focuses on a range of SEEA-SNA "cross-border" accounting issues, as guidelines in the two statistical standards sometimes differ. In the context of the SNA update, an objective of the guidance is to overcome these conceptual differences as much as possible, and to strengthen areas of the accounting standards where current practice warrants such stronger guidance. An important example is in the recommended recording of natural resource depletion.

The guidance also considered phenomena drawing considerable interest and attention in recent years, such as renewable energy resources. Evolving international standards must clearly account for these developments to maintain relevance moving forward.

In keeping with these objectives, guidance in the area of environmental-economic accounting addresses the following specific research issues:

EA.01 Refining economic ownership of natural resources

EA.02 Accounting for biological resources

EA.03 Accounting for a broader range renewable natural resources

EA.04 Stronger guidance on valuation methods including net present value (NPV) calculations

EA.05 Recording of losses

EA.06 SEEA classifications

EA.07a Recording of the 'regular' environmental taxes and subsidies in the SNA and SEEA

EA.07b Distinction between recording a tax or a service transaction

EA.07c Recording of pollution permits

EA.08 Recording of provisions

EA.09 Recording of depletion

EA.11 Accounting for renewable energy resources

EA.12 Defining elements of the SEEA which should enter the broader wellbeing sustainability information system

EA.13 Explaining the borderline between the SNA and the SEEA

Issues EA.01 to EA.11 are of a conceptual nature and for those issues specific guidance notes explain the issue and provide tentative accounting solutions for both the SNA and the SEEA.

Issues EA.12 and EA.13 position the SEEA in an overarching wellbeing measurement framework and related issues are briefly discussed in this note.

Main results

A prominent issue in the proposed guidance is the recording of *natural resource depletion*. This topic is narrowly tied to the longstanding discussion advocating *net* versus *gross* income and saving as deserving a more prominent role, certainly as compared to indicators like the Gross Domestic Product (GDP). In the SEEA CF, natural resource depletion is recorded in the generation of income account, where it is presented, in addition to consumption of fixed capital, as a supplementary element defining the difference between Gross and Net Domestic Product. In the 2008 SNA, depletion is recorded in the other changes in the volume of assets account.

It is recommended that the SEEA CF treatment be adopted in the next SNA update. This is considered of paramount importance, particularly for developing countries, to appropriately reflect in how far income growth is realised through running down natural resources, thus hampering the potential for sustainable incomes in the future.

A strongly related issue is defining *economic ownership of natural resources*. Their extraction is often carried out under the shared responsibility of private and public entities. An *ownership split* is recommended in these cases, based on an assessment of who bears the risks and obtains the rewards. A meaningful recording of natural resource depletion requires this asset ownership split.

Recent accounting practice has shown that the distinction between *cultivated and non-cultivated biological resources* can be quite thin. This distinction is important as it has a direct impact on how output and assets are defined and recorded. More clarification and common understanding are needed, in particular for the SNA, and further alignment between the updated SNA and SEEA CF is also desirable. Current SNA guidance on permits to use biological resources is not entirely consistent and also needs improvement.

While the need for further guidance to improve and harmonise the measurement of *resource rents and Net Present Value (NPV) calculations* was investigated, the conclusion is that much of the needed guidance can already be found in the SEEA CF. The use of alternative non-market valuation techniques is being discussed as part of the revision of the SEEA Experimental Ecosystem Accounting (SEEA EEA). It has been concluded that, when it comes to the alignment with the SNA, the revised SEEA EEA should not incorporate valuation concepts that include consumer surplus, nor consider including monetary values reflecting alternative institutional and policy contexts. The SEEA EEA revision will contain discussion on how alternative non-market valuations could be used to complement monetary measures from the SEEA and the SNA.

The need to account for *losses* in extracted natural resources, such as theft, storage and distributional losses, in the SNA vis-à-vis the SEEA was explored. A key question is whether flows must be recorded gross or net of losses. In this respect differences in scope of the *physical* (SEEA CF) and *monetary* supply and use tables (SNA) must be acknowledged. The first aims at an exhaustive recording of the material flows running through the economic system while the latter aims at an exhaustive recording of economic transactions. These two perspectives do not always coincide.

To steer economies in an environmentally friendly direction, governments may introduce a range of policy measures like *environmental taxes and subsidies* along with other pricing mechanisms. Cross-country data comparisons are sometimes hampered by differences in policies as well as divergent accounting practices. While problem areas have been identified, specific recommendations on a way forward are still in discussion.

The 2008 SNA provides guidance on recording decommissioning costs but not on the treatment of *provisions*. The undesirable consequences of mining may impact third parties who may hold mining companies responsible for damages caused. In response, these companies may build provisions in their balance sheets. Provisions remain unrecorded in the current versions of the SEEA and the SNA. Additional guidance is provided on how both standards should account for provisions for future obligations to compensate third parties for environmental damages caused.

Renewable energy resources have increased in importance in recent years. The 2008 SNA and the SEEA CF are criticized for not providing a complete and internally consistent approach to valuation. This topic has provoked a rich discussion, such as how to define renewable energy assets, identifying their economic ownership and their valuation in monetary terms. Specific recommendations are pending.

Borderline between the SNA and the SEEA

In addition to the monetary accounts, the SEEA CF also includes a comprehensive accounting framework in physical terms, both for the material and energy flows (physical supply and use tables) and for natural resources (asset accounts in physical terms). This makes the SEEA inherently different from the SNA, as the current SEEA asset boundary in physical terms is broader than the current SNA asset boundary. Also, non-commercial natural resource stocks are recorded in the SEEA. Furthermore, the recording of physical flows may coincide with that of a transaction in goods, but not exclusively. The recording of emissions to air and water, for example, are also part of the physical supply and use tables in the SEEA CF but remain unrecorded in the SNA.

In monetary terms, there appears to be no strong argument to maintain any of the conceptual differences between the two systems. Therefore, several issues presented above attempt to further align the two systems. Examples include the recording of natural resource depletion (EA.09), the refinement of asset ownership (EA.01), stronger guidance on natural resource valuation (EA.04) and accounting for biological resources (EA.02). Furthermore, also the differences between the asset boundaries in physical terms are further reflected upon, amongst others as part of the discussions on biological resources (EA.02).

Extended accounts on environmental issues

When it comes to extended accounts on environmental issues, the logical starting point is SEEA Central Framework, the international standards for environmental-economic accounting. In the context of the implementation of these standards, the UN Committee of Experts on Environmental-Economic Accounting (UNCEEA) has agreed on a number of priority accounts for the development of databases with global coverage. These priority accounts first and foremost relate to one of the most critical policy issues, i.e. climate change: accounts for energy, accounts for air emissions, and accounts on environmental taxes and subsidies. In addition to these accounts, global databases are being developed which are considered important for describing and analyzing the circular economy: the material flow accounts. Accounts on land cover and land use are also considered as a priority for which agreed global databases are being put in place in the coming years. Less well developed, but increasingly important for measuring progress in developing countries, are accounts on water. Here, it is suggested to use the above accounts as the starting point for the extended accounts in the context of measuring wellbeing and sustainability in a broader framework of national accounts.

As noted, new (experimental) standards are being developed for the measurement and analysis of developments in ecosystem services and ecosystem assets. This guidance is scheduled to be finalized in the course of this year, to be endorsed by the UN Statistical Commission in its March 2021 meeting. Accounting for ecosystem assets is crucially important for capturing natural capital to a fuller extent. How and when this extension of the production and asset boundary can be reflected in the extended accounts for measuring wellbeing and sustainability depends on the future developments of the international standards, including their implementation in practice.

6. Changes required to the 2008 SNA

Specific implications for the SNA resulting from proposals on wellbeing and sustainability are outlined in each of the individual guidance notes summarized in the previous section. In addition, a number of changes are required to situate the broader framework on wellbeing and sustainability within a revised set of international standards for national accounts.

First, the existing guidance on satellite accounts (Chapter 29 of the 2008 SNA) will need to be re-examined in light of new guidance for wellbeing and sustainability, since it brings elements formerly recommended in satellite accounts into an expanded SNA framework. An option could be to base the revised chapter on new guidance developed recently on general thematic satellite accounts, which cover specific themes such as tourism, culture, infrastructure, or other topics of local policy relevance. This updated chapter could also retain the recommendation to use satellite accounts as an optional mechanism to test new or experimental measures prior to their implementation in core headline estimates.

In addition, new chapters or sections would be introduced to the SNA covering guidance on wellbeing and sustainability, including an introductory section characterizing the broader

framework, followed by individual modules covering each of the five domains. To the extent possible, these modules would be characterized in an integrated way, emphasizing linkages among components with harmonized classifications and concepts and clarifying explicitly how recommended extensions are linked to traditional SNA measures.

7. Conclusions and next steps

To date, draft guidance has been developed separately in each of the areas of consideration, with limited alignment among the five domains. In some specific cases (for example, in the area of environmental-economic accounting), discussions are ongoing and clear recommendations are pending, while in others the scope of recommended extensions is quite broad (for example, for households unpaid service work, and for labour, education and human capital) and may need to be prioritized in light of the full set of additions proposed in order to remain within feasible bounds.

In addition, work remains to better integrate measures across the 5 domains and align them in a coherent presentation with traditional aggregates. Annex A presents visual representations of each of the five areas, which roll up to an integrated view. This should be considered a starting point which must be developed further. For example, linkages of extended modules proposed for unpaid service work to those for labour, education and human capital and for health and social conditions must be developed more explicitly. There are also logical tie ins for demographics proposed for household distributions with the labour accounts and other domains.

Finally, consideration must be given to proposing new extended concepts in the broader framework on wellbeing and sustainability which integrate elements across the domains with traditional SNA aggregates. An obvious example is an expanded wealth concept that augments produced and financial capital with human and natural capital, which, according to current proposals, could now conceivably be part of proposed extensions to the SNA framework.

A key challenge in refining, integrating and further developing this preliminary guidance for an expanded SNA framework for wellbeing and sustainability will be to establish the optimal balance between ideal concepts and measures and the feasibility of implementation across a broad range of national economies with varied resources and institutional circumstances. Such a balance will be informed by ongoing consultation with and experimentation by NSOs, along with more in-depth discussions with the policy and research communities.

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Appendix A:

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