Chapter 2: National accounts and its contribution to measuring well-being and sustainability

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(new chapter)

A. Introduction

2.1 There can be no doubting the relevance of measuring well-being and sustainability for all countries. We face a real and growing range of economic, social and environmental challenges including poverty and food insecurity, social and health inequality, climate change and biodiversity loss. In different but related ways these challenges affect our capacity to satisfy the needs of current generations (well-being), both in aggregate and in relation to different groups of people (distributions), and to ensure that future generations can satisfy their needs (sustainability). Developing and implementing solutions to these challenges requires that a significant focus be given to the relevant measurement issues by the community of official statisticians and other experts.

2.2 The breadth of the measurement requirements in the space of well-being and sustainability means that the SNA as a statistical framework must work with and complement other frameworks and measurement initiatives to support the analysis and discussion of these issues. Thus, this chapter describes the ways in which the SNA can contribute appropriately to the wider objectives of measuring well-being and sustainability. It is also recognized at the outset that assessments of well-being and sustainability are context dependent and consequently the focus of discussion in this chapter is on the organization of relevant data to support such assessments rather than providing a definitive quantification of well-being or sustainability.

2.3 The measurement scope of well-being and sustainability involves encompassing and integrating its environmental, social and economic dimensions. Within this scope, the System of National Accounts (SNA) provides a comprehensive statistical framework for the organization of data concerning the economic dimension following established national accounting rules. The measurement scope of the SNA can be generally characterized in terms of data on economic development including production, income, accumulation and wealth which is presented in a sequence of economic accounts. For more than 70 years, the organization of economic data following the SNA to create rich and coherent datasets has supported the design, analysis and evaluation of economic policies around the world, and gross domestic product (GDP) has become one of the world's most well-known statistics.

2.4 The institutionalization of economic data in decision making through the accounting structures provided by the SNA has established credible, comparable and authoritative measures of economic activity suitable for all countries. One effect of this institutionalization has been the wide-spread use of national accounts measures of economic activity, in particular GDP, as indicators of the general performance of a country including its people's well-being and standard of living. Such use of GDP has been criticized as driving poor policy outcomes, notwithstanding the routine advice of compilers of national accounts that there are limitations in using GDP and similar measures of aggregate economic performance as measures of well-being.

2.5 The chapter discusses two primary avenues of contribution by the SNA to the wider objective of measuring well-being and sustainability. The first avenue recognizes that, other than GDP, there is a very wide range of data and aggregate measures contained within the SNA's sequence of economic accounts that can be used to inform discussion of well-being and sustainability. These include measures of household disposable income, consumption, saving and net worth. Further, it is possible to supplement the national level information presented in the sequence of economic accounts with data on the distribution of these economic measures across groups of economic units. For example, measures of household income and wealth may be disaggregated by type of household, income decile, gender and other characteristics. This additional detail provides a richer body of data to support discussion of well-being and sustainability.

2.6 The second avenue recognizes that a significant part of the development of frameworks and approaches to the measurement of well-being and sustainability has involved applying and adapting the accounting rules and structures presented in the SNA to organize data on the environmental and social dimensions of well-being and sustainability. Examples of these accounting based approaches cover topics including unpaid

household service work, health care expenditure, education and training, and environmental stocks and flows. The motivation for the development of these frameworks recognizes the potential of accounting-based approaches and the advantages of ensuring that data about the environmental and social dimensions can be readily connected to data from the SNA's sequence of economic accounts.

2.7 The description of how accounting approaches can be used to extend and broaden the set of information available for the discussion of well-being and sustainability is a significant step. At the same time, in the history of the development of the SNA there have been ongoing discussions on the role of the national accounts in the measurement of well-being and sustainability, with long-standing debates about the appropriate setting of boundaries concerning production, income and assets. In essence, the second avenue of discussion in the chapter aims to better highlight the potential for compilers to apply meaningful complementary accounting boundaries, for example concerning unpaid household service work or ecosystem services, and hence organize data that more comprehensively cover the range of stocks and flows relevant for the assessment of well-being and sustainability.

2.8 There is a range of potential accounting boundaries and different challenges in extending the range of stocks and flows (such as concerning human capital). Consequently, this chapter does not describe an overarching or inclusive framework for the integration of all aspects of well-being and sustainability. Nor does it propose a single indicator of well-being and sustainability. Rather, the discussion reflects that accounting based approaches can provide a basis for further discussion and research about the integrated measurement of well-being and sustainability as evidenced by a range of measurement initiatives including by national statistical offices. This approach also highlights the complementary role of the SNA within the broader well-being and sustainability measurement space.

2.9 Further research might focus on (i) establishing higher levels of agreement on the details and associated accounting rules and treatments that are needed to describe a more integrated accounting framework; (ii) delineating the boundaries and role of the accounts of the SNA as part of a wider framework; (iii) building the methods and data available to compile the range of accounts and tables that would be within the scope of such a framework; (iv) clarifying the limits of accounting-based approaches, for example with respect to recording multiple value perspectives; and (v) explaining the role of measurement and accounting as part of decision making about well-being and sustainability.

2.10 This chapter describes the role of the SNA in supporting discussion of well-being and sustainability in the following way. Section B introduces the concepts of well-being and sustainability recognizing the range of work that has been undertaken in this measurement space. Using these concepts, it then outlines the measurement scope to be considered and describes the role and benefits of accounting-based approaches to measurement. Section C focuses on the SNA's sequence of economic accounts and summarizes the range of measures within that scope that are relevant in the context of well-being and sustainability. Section D goes beyond the sequence of economic accounts and introduces a range of accounting-based approaches that extend and broaden the suite of data available. Sections C and D provide only short introductions to the relevant topics with further details elaborated in different chapters of the SNA, in particular Chapters 34 and 35.

B. Approaches to the measurement of well-being and sustainability

1. Conceptual framing of well-being and sustainability

2.11 The concepts of well-being and sustainability have been framed in a number of different ways but a common understanding is that they embody economic, environmental and social dimensions. Two entry points to framing the concepts are considered most relevant here and are discussed directly below.

2.12 The first entry point ties the concepts of well-being and sustainability to the concept of sustainable development. The enduring definition of sustainable development is that of the 1987 Brundtland Commission report which defines it as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (UN World Commission on Environment and Development, 1987, p423). This entry point links the measurement of well-being to the measurement of sustainability, i.e., well-being needs to be sustained into the future.

2.13 The second entry point concerns the work of the Joint UNECE/Eurostat/OECD Task Force on Measuring Sustainable Development (UNECE, 2015). This work frames the broad concept of the well-being of households as being reflected in a mix of objective and subjective measures ~~and will~~ concerning well-being in the "here and now", or current well-being, the well-being of future generations and the well-being of people elsewhere. Thus, households are the focus of measuring well-being as it is ultimately the lives of people that are the primary focus of a well-being perspective. In the following discussion, while the two concepts of well-being and sustainability are distinguished for measurement purposes, it must be accepted that they are inherently linked.

2.14 The measurement of the well-being of present and future generations can be considered in a number of ways. Three aspects are of most relevance. First, the goods and services consumed by people as recorded in measures of household final consumption ~~expenditure~~. Second, the goods and services consumed by people that are outside the scope of the SNA production boundary. These will include the supply (or loss of) non-market benefits including those sourced from the environment, from unpaid household service work, and from the connections and relationships people hold with each other. Third, people's functioning and capabilities – i.e. the freedom and possibilities they have to satisfy their needs (Sen, 1993, 2000). These capabilities will be linked to topics such as education and training, health care and human capital. The connections and boundaries between these different aspects may be challenging to identify. For example, the nature of the relationship between people's level of functioning and capabilities and their level of consumption of market goods and services is not definitive. Thus, well-being is best characterized as a multi-dimensional concept that encompasses a range of benefits accruing to people and not all aspects will be able to be embodied within an accounting context.

2.15 Measuring the sustainability of well-being requires introducing a time dimension, i.e. assessing whether the capacity to provide well-being can be secured in the future. From an economic and accounting perspective, the capacity to provide well-being in the future is most readily interpreted in terms of the capital available to underpin future well-being. Overall, from an accounting perspective, the link between well-being and sustainability can be reflected by recording data about (i) a range of capitals namely economic~~produced~~, natural, human and social capital; and (ii) the associated changes in benefits (including losses of benefits) across the economic, environmental and social dimensions using a common set of accounting rules and assumptions about how these benefits might change in the future.

2.16 Nonetheless, even using this relatively broad scope, not all relevant aspects of well-being and sustainability will fall within scope of accounting as described further in the following section. In part, this reflects the need to establish a clear boundary of benefits for accounting purposes which, in turn, limits the consideration of a wider set of measures of outcomes (e.g. concerning quality of life) and subjective measures of well-being. For this reason, the discussion in this chapter should be seen as complementing other measurement work. Box 1 (below) lists a range of other frameworks and approaches that concern this area of measurement and the content of this chapter seeks to build on and adapt the relevant findings.

Box 1: Well-being and sustainability initiatives

There have been many approaches to measuring well-being and sustainability over more than 50 years. Collectively, these approaches reflect the importance of measuring well-being and sustainability and the view that the current and future well-being of households is a complex multi-dimensional phenomena that cannot be comprehensively addressed using a single summary indicator.

The following initiatives are noted here:

- 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 well-being and long-term sustainability.
- The United Nations Sustainable Development Goals (SDGs) adopted in 2015 which recognize the need to build economic growth while addressing a wide range of social and environmental needs.
- Measures of comprehensive or inclusive wealth for an enhanced understanding of national wealth across multiple capitals as a complement to current measures of national income and

wealth. Leading work in this area includes the World Bank's Changing Wealth of Nations (2021) and UNEP Inclusive Wealth Report (2018).

- The development of dashboards with a range of indicators on various aspects of well-being and sustainability by countries and international organizations (e.g., UNECE Sustainable Development Indicators, OECD How's Life?).
- The development of composite indicators which summarize data from multiple themes into single, composite measures of well-being and/or sustainability (e.g., Index of Sustainable Economic Welfare, Genuine Progress Indicator, UNDP Human Development Index, World Bank Multidimensional Poverty Measures)
- The development of global environmental and social thresholds indicating boundaries beyond which sustainability may be compromised (e.g. work on planetary boundaries (Rockstrom et al, 2009) and Doughnut Economics (Raworth, 2017)).
- Advances in the measurement of sustainability and well-being from a corporate perspective including measures of environmental, social and governance risks, and corporate impact reporting and disclosure.

2. Measurement scope of well-being and sustainability

2.17 In the discussion here about the role of the SNA in assessing well-being, 'well-being' refers to the current material well-being of households. It is acknowledged that measures of material well-being do not provide a complete reflection of all aspects of well-being. Nonetheless, components of material well-being are important considerations. Chapter 34 provides a longer discussion on the measurement scope of well-being, including the link to measures of subjective well-being.

2.18 Within the scope of material well-being are measures of household income, consumption and wealth, labour and work (including unpaid household service work), education, health care and housing. A particular focus of the discussion in an SNA context is identifying measures that are present within the SNA production boundary and those beyond the production boundary. Measures within the production boundary include data on household final consumption expenditure by type of good and service, actual final consumption and disposable income. As explained further in Chapter 34 there is also a range of data on health care expenditures and expenditures on education and training that can be organized to provide rich information sets to support decision making.

2.19 Beyond the SNA production boundary, a range of aspects is considered relevant in the measurement of well-being. Of particular importance are measures of unpaid household service work, such as concerning child care and food and meal preparation. Measurement of this work is important since it involves the type of activity that can also be undertaken within the production boundary and hence shifts across this boundary are important in understanding wider economic and social trends.

2.20 In measuring well-being using an accounting approach, it is strongly encouraged, and often essential, to incorporate measurement in non-monetary terms. Thus, for example ~~measures of the quantity of consumption (e.g. calories per day),~~ estimates of the number of people employed and their hours worked, and data on the allocation of time across different activities (e.g. number of hours of sleep) all provide information to support analysis of well-being. In many instances, non-monetary data can be organized using accounting based approaches to complement measures in monetary terms.

2.21 Finally, for each of these areas of well-being, the scope envisaged in this discussion also encompasses measures of the distribution across key socio-demographic characteristics, such as income and wealth deciles/quintiles, household type, home ownership status, gender, age group, education level or employment status.

2.22 In the discussion here, supporting the assessment of "~~"~~sustainability" ~~"~~ refers to accounting for the stock and changes in stock of a range of capitals, namely economic~~produced~~, natural, human and social capital. Thus, the measurement of sustainability focuses on the extent to which there is the maintenance and generation of

resources to support the material well-being of households in the future.

2.23 The measurement of economic ~~produced~~ capital falls within the scope of the SNA sequence of economic accounts and encompasses produced non-financial assets, non-produced non-financial assets (e.g. contracts, leases and licences) and financial assets and liabilities while excluding natural resources which are included under natural capital.~~1.~~ The relevant data covers the values of the stock of produced capital and changes in those values including due to investment, depreciation and revaluation. Chapters 11 and 14 provide a full description of the relevant accounting considerations.

2.24 In relation to natural capital, some elements are recorded in the sequence of economic accounts, including monetary stocks and flows associated with mineral and energy resources, biological resources, water resources, and land. A more comprehensive accounting for natural capital in monetary and non-monetary terms is described in the System of Environmental-Economic Accounting (SEEA) which applies accounting rules for the recording of data on the stock of natural capital and changes in stock in both biophysical and monetary terms. The scope of the SEEA covers natural resources, land and ecosystems and includes measurement of (i) the non-market ecosystem services supplied by ecosystems (e.g. global climate regulation, air filtration and water regulation); (ii) the pressures exerted on the environment through economic and human activity (e.g. flows of air pollutants, solid waste, wastewater); (iii) the changes in the condition of ecosystems due to human activity, both positive and negative; and (iv) responses by economic units in terms of expenditures, taxes, subsidies and other flows recorded but not separately identified in the sequence of economic accounts. The SEEA thus facilitates a broader recording of well-being in addition to broader measures of natural capital and its sustainability. Chapter 35 provides an introduction to the key features of the SEEA.

2.25 In relation to human capital, some of the benefits of human capital are explicitly recorded in the sequence of economic accounts, i.e., compensation of employees, but the stock value of human capital itself is not included. Measures concerning human capital have been developed separately and an introduction to the key features is provided in Chapter ~~34~~35. While connections to the sequence of economic accounts can be made to support a broader assessment of sustainability, there is a number of remaining accounting and measurement challenges requiring further research.

2.26 Social capital is generally understood as the combination of formal and informal institutions and networks that support the functioning of our societies and economies. A short introduction to social capital is provided in Chapter 35 recognizing that the m~~M~~easurement of social capital is a developing area and~~but~~ that, at present, its measurement from an accounting perspective is not sufficiently advanced for inclusion in the discussion. Future research may identify ways in which social capital can be effectively defined and measured for accounting purposes.

2.27 It is acknowledged that the scope of measurement reflected here does not encompass all possible areas of measurement with regard to well-being and sustainability. Nonetheless, the scope does bring into consideration measures not currently considered in the compilation of the sequence of economic accounts. It is the ambition of the discussion here to describe how this range of data in monetary and non-monetary terms can be meaningfully connected using accounting rules and hence provide a coherent information set to support the discussion of well-being and sustainability. Through these descriptions the role of the SNA's sequence of economic accounts within the wider measurement space should become apparent.

2.28 As an example of the potential application of these accounting data, from the perspective of the economic theory concerning well-being and sustainability, it is fundamental that analysis uses measures in volume and real terms (i.e. taking into account the effects of price change). Thus, while in an accounting sense the initial focus is on the organization of data in nominal or current price terms for each accounting period, for economic analysis purposes, changes in nominal terms do not provide a correct measure or approximation of changes in well-being or its sustainability.

~~[1] The term "produced capital" is used here to encompass non-financial non-produced assets (except for natural resources which are included under natural capital), and financial assets and liabilities. Produced capital thus also includes non-produced non-financial assets, such as contracts, leases and licences.~~

3. Role and benefits of accounting-based measurement approaches

2.29 An accounting-based approach has a number of features that support the organization of data relevant to the assessment of well-being and sustainability. At its core, accounting is an approach that can be used to describe the components of systems – for example, economic, financial, or environmental systems - and how the components of these systems change over time. Through the logic of defining and recording stocks and flows, the application of accounting rules enables the state and changes in state of a system to be systematically and comprehensively recorded and allows the benefits supplied by a system to be quantified. Traditionally, the focus in the application of accounting has been to economic and financial systems with recording being undertaken in monetary terms. However, as demonstrated in this chapter, accounting rules can be readily applied to the organization of data about environmental and social systems with recording being undertaken in both monetary and non-monetary terms.

2.30 The complementary advantage of using accounting to describe systems is that the logic of stocks and flows speaks directly to the connection between ~~a narrative of~~ well-being and sustainability. In short, flows provide information relevant to current well-being and the maintenance of (and investment in) stocks will underpin current and future flows of benefits. Conversely, the depletion, degradation or depreciation of a system's stocks will reduce the potential of deriving benefits from these stocks in the future. Accounting is thus a tool that can organize data and information in a way that can be readily interpreted in relation to well-being and sustainability.

2.31 To underpin its systematic and comprehensive approach to recording, accounting relies on establishing measurement boundaries concerning both the stocks and flows to be incorporated. Consistently applying the same measurement boundaries over time provides a pragmatic system boundary to underpin analysis. For example, establishing the boundaries of economic territory consistently across countries allows interactions between these economic systems to be recorded coherently. The connections across different accounts are further reinforced through the consistent use of classifications, for example of economic units and products.

2.32 However, as described above, the measurement of well-being and sustainability requires consideration of a wider range of stocks and flows, i.e., alternative measurement boundaries are required to support a more complete description of a wider system. While measurement boundaries may change, accounting approaches retain the benefits provided through a systematic recording of stocks and flows, i.e., consistency, coherence, comparability and repeatability. In addition, there are measurement advantages in the ongoing confrontation of data from multiple sources within an accounting process that improve the quality and credibility of the data. This includes confrontation of data in monetary and non-monetary terms.

2.33 A significant analytical benefit from the consistent application of accounting approaches across different aspects of economic, environmental and social systems, is that it builds a set of data that can be meaningfully connected and integrated to support analysis across the different aspects. For example, the measurement of unpaid household service work can be linked to both measures of production in the economy and to measures of health care expenditure. Where data are available such analysis may also be ~~intersected with data~~presented by household type, e.g., by income decile.

2.34 It is common for the measurement of well-being and sustainability to focus on the development of a set of indicators selected and organized around the three core dimensions of economy, society and environment. Sometimes the indicators are aggregated to derive composite indicators. Where indicator-based approaches to measuring well-being and sustainability are applied, the data organized using accounting-based approaches can readily support the organization of relevant data for the derivation of indicators and may support a richer analysis of connections between indicators, for example between food security and agricultural productivity.

2.35 The potential of accounting-based measurement approaches and the relevance of information beyond the scope of the sequence of economic accounts has been widely recognized for many years and this understanding has seen the development of a range of accounting-based measurement approaches for specific themes. Traditionally referred to as satellite accounts, the area of thematic accounting (discussed in Chapter 38) has been a long-standing feature of national accounting. Stand-alone accounting-based frameworks have now been developed across a number of themes, including tourism, health, education, culture, environment, transport, unpaid household work and labour. The frameworks of most relevance to the measurement of well-

being and sustainability are described in Section D below. These frameworks have reached different levels of endorsement within statistical processes recognizing that, as for the SNA, the need for ongoing development and refinement remains present.

2.36 Of special note is that developments in a number of areas including environmental-economic accounting, labour market tables~~accounts~~ and health accounts, have demonstrated the way in which accounting rules can be applied to non-monetary data and thus support the integration and comparison of a broader range of data. By way of example, accounts have been developed for the extent (area) of ecosystems, stocks of carbon, hours worked of labour and numbers of health procedures. By encompassing these types of non-monetary data, more comprehensive linkages between the economy and the environment may be obtained. Nonetheless, for a number of purposes, there remains an interest in determining monetary values for stocks and flows that are beyond the scope of the sequence of economic accounts.

2.37 In the context of broader monetary measures, another accounting-based approach is commonly referred to as wealth accounting. Wealth accounting, as the label suggests, focuses on measurement of a nation's wealth, ideally reflected in a balance sheet that includes all forms of capital – natural, human, social and ~~produced~~ economic (including financial) capital. Wealth accounting theory speaks directly to the need to invest in and maintain stocks of capital to secure future benefits. Its increasing prominence in policy discussions through work on measures of comprehensive and inclusive wealth by the World Bank and UNEP, as well as work at national level in a range of countries, reinforces the measurement approach outlined here and its implementation can be directly supported using the framing described.

2.38 Collectively, the ambition presented in the SNA discussion of well-being and sustainability is to describe how accounting approaches can be used and adapted to provide a coherent body of information to support discussion of these fundamental topics. The coherent body of information will be reflected in consideration of two main parts. First, the role of the SNA sequence of economic accounts, including measures of distributions across households (Section C); and second, accounting approaches beyond the sequence of accounts (Section D).

4. Considerations in the interpretation of accounting-based measures of well-being and the connection to welfare values

2.39 As mentioned above, well-being is a wide-ranging concept with many different aspects. Some of these aspects may be captured reasonably well by one or more of the key aggregates of the SNA. At the same time, some aspects of well-being are likely to remain outside the reach of the SNA sequence of economic accounts given it was not designed with the measurement of well-being as a prime consideration. This section summarizes the main issues that should be considered in interpreting SNA measures in relation to well-being and welfare, highlights some limits of accounting based approaches more generally in relation to measuring well-being and introduces the effects of applying different principles for monetary valuation in measuring well-being.

2.40 It is useful to recall that there is a long history of debate dating to at least the initial development of the SNA in the 1930s concerning the role of GDP and other national accounts measures in the assessment of changes in economic welfare. In recent editions of the SNA, the position of the SNA is that while the change in GDP in volume (or real) terms is often taken as a measure of changes in material well-being or economic welfare, the SNA makes no claim that this is a preferred or appropriate measure. There are several conventions applied in the SNA's sequence of economic accounts that argue against such an interpretation of the accounts. First, in a market economy, the prices used to value transactions in different goods and services should reflect not only their relative marginal costs of production but also the relative marginal benefits or utilities derived from using the goods and services for production or consumption. This framing establishes a theoretical link between changes in aggregate production and consumption in real terms and changes in well-being. However, changes in the volume of consumption are not the same as changes in well-being, and changes in well-being may not be proportionate to the increase in consumption.

2.41 Further, it is noted that the unit incurring the expenditure is not necessarily the one that benefits. For example, governments will commonly undertake expenditure on health and education services while the benefits are received by households. To support analysis of this distinction, the SNA describes the concept of actual

consumption, that adjusts the consumption expenditure of households to account for goods and services purchased by government on behalf of households (e.g. government provided education and health care).

2.42 Second, the production boundary of the SNA is such that the services produced and consumed within a household are not included in the measurement of GDP except for ~~the imputed rental of~~ owner-occupied housing services ~~dwellings~~ and the payments made to domestic staff. Similarly, no estimate is included in the SNA for the labour services of individuals provided without cost to non-profit institutions, i.e. volunteering. In ~~both~~ these cases, the contribution of time increases the overall material well-being of individuals and households in the community. The exclusion of these services from the production boundary is not a denial of the relevance of the services but reflects a view that their inclusion would not necessarily add to the usefulness of the SNA for the primary purposes for which it is designed, that is macro-economic policy and analysis. The inclusion of measures of unpaid household service work as part of the measurement of well-being (see Chapter 34 for details) is specifically targeted at responding to this aspect of the SNA's measurement scope for other analytical purposes. More generally, it is the case that the use of alternative production boundaries for the compilation of measures of national income may support the derivation of improved measures of changes in well-being.

2.43 Third, the level of an individual's and a nation's well-being may be affected by a wide range of factors that are not economic in origin. Consider the effects of an exceptionally severe winter combined with an influenza epidemic. Other things being equal, the production and consumption of a number of goods and services may be expected to rise in response to extra demands created by the cold and the epidemic. These additional expenditures are often referred to collectively as defensive expenditures. As compared with the previous year, people may consider themselves to be worse off overall and thus total well-being could fall even though GDP would increase in volume terms, notwithstanding the fact that the community likely finds itself better off with the extra production and consumption of heating and health services than without them. Again, as noted in relation to unpaid household service work, the use of alternative measurement boundaries to account for defensive expenditures may support the derivation of improved measures of changes in well-being.

2.44 Fourth, some production activities may cause a loss in well-being that is not fully reflected in GDP. A factory, for example, may generate noise and emit pollutants into the air or nearby water systems thereby causing a loss of amenity and a loss of well-being to individuals living nearby or downstream. If there is no financial penalty to the factory, the consequences on well-being could go unmeasured in the SNA or may show up elsewhere in the accounts for example in the form of lower rents, higher health related expenditures or lower labour productivity for those people living nearby or downstream. On the other hand, if the factory incurs expenditures that reduce the noise or quantity of pollutants emitted, well-being should rise but the offset will not necessarily be complete. Of course, it is not a simple task to identify and re-attribute the full range of economic effects of environmental and other externalities, or to determine which effects are captured within aggregate measures such as GDP. However, undertaking this work would support the derivation of improved measures of changes in well-being. As one step in that direction, Section D (below) introduces the use of accounting approaches to organize data on the extent and condition of ecosystems and flows of ecosystem services to provide a structured set of data to support measurement of ~~consider~~ some external effects in a more explicit and integrated manner.

2.45 The four issues just described concern the potential to interpret measures from the SNA, such as changes in real GDP, as measures of changes in material well-being. Beyond these issues, there are also limits in the extent to which measures of material well-being should be considered measures of well-being more broadly. Three issues are of particular relevance. First, in keeping with the SNA production boundary, material well-being is measured in relation to the expenditure on goods and services consumed by households rather than in relation to the outcomes arising from their consumption. Thus, for example, a distinction can be made between the expenditure on outputs of doctors' services and medicines and the outcome of improved length and quality of life that is expected from consumption of these outputs. Although outputs may be important in securing outcomes, a focus on measuring outputs will not provide as comprehensive a measure of well-being as may be desired.

2.46 Second, measures of material well-being exclude measurement of subjective well-being. This may include factors such as personal and family circumstances, quality of health, and the satisfaction or lack of it derived from employment. While there is a growing body of measurement expertise and experience concerning

subjective well-being (e.g. OECD, 20132), it is a topic that lies outside the domain of accounting and is not considered further here. Future research may identify means by which data on subjective well-being and economic data from the accounts may be appropriately connected.

2.47 Third, the measurement of material well-being discussed here does not encompass the recording of data on spiritual and cultural values or values and preferences with respect to the environment and nature. Some aspects of these values may be reflected in measures of subjective well-being and some aspects will be reflected in measures of stocks and flows related to natural capital in biophysical terms. However, while these values will be relevant in an overall assessment of well-being, the incorporation of them within an accounting framing requires further investigation.

2.48 All of the preceding discussion on the potential to use GDP to support the measurement of well-being relate to the scope of measurement. Another important consideration in appropriately interpreting accounting measures in monetary terms is understanding the underlying valuation concepts and methods. Most commonly, the valuation methods that are used in the measurement of changes in material well-being focus on the measurement of changes in welfare values – i.e. measures of the change in total benefit (or surplus) accruing to consumers and producers from undertaking exchanges of goods and services. Welfare values will thus incorporate estimates of the changes in consumer surplus received by consumers. Importantly, such measures of consumer surplus are estimated either by ex-ante comparisons of two alternative contexts (programs) or by ex-post (i.e. observed) evaluations compared to a counterfactual or alternative context. The resulting estimates of the differences between two contexts do not reflect observed changes in prices and hence are inappropriate for inclusion in the accounts. However, in the case of ex-post evaluations, the observed (or realized) price that is one input into the derivation of changes in welfare values is equivalent to the exchange price used in accounting. Further, in the measurement of changes in consumer surplus, if the actual programs and institutions are compared at two points in time, then changes in real exchange values will approximate changes in consumer surplus. In short, while welfare values reflecting changes in consumer surplus are not equivalent to the exchange values used in accounting, there are connections between these valuation concepts. Chapter 5 provides a discussion on valuation principles and techniques applied in the national accounts.

C. The role of the SNA sequence of economic accounts in measuring well-being and sustainability

1. Introduction

2.49 The SNA sequence of economic accounts provides a comprehensive record of an economy's production, income, accumulation and wealth. An overview of the sequence is provided in Chapter 3 and the thorough description of the relevant accounting rules, treatments, measurement boundaries and economic units required for the compilation of the sequence of economic accounts is the focus of SNA chapters 4-20.

2.50 One feature of the sequence of economic accounts is that each account in the sequence contains one or more aggregates, each of which has a particular economic interpretation. For example, an aggregate from the production account is gross domestic product (GDP) providing a measure of the value added of resident economic units; and an aggregate from the balance sheet is net worth revealing the total value of assets less liabilities for an economy.

2.51 The potential to describe a coherent sequence of economic accounts arises from the application of a single production boundary and a single asset boundary across the various accounts. The boundaries are defined and applied through chapters 4-20. One key outcome from the use of these boundaries is that there is a coherence across measures of income, consumption, accumulation and wealth. At the same time, the consistent application of production and asset boundaries means that there is a number of elements relevant to measurement of well-being and sustainability that are excluded from the measures within the sequence of

[2] OECD (2013) *Guidelines on Measuring Subjective Well-being* (https://www.oecd.org/wise/oecd-guidelines-on-measuring-subjective-well-being-9789264191655-en.htm)

economic accounts. For example, unpaid household service work and ecosystem services are both excluded from the production boundary of the SNA and hence the benefits of these flows are not captured in measures of national income or wealth. Thus, as explained in the earlier sections, a more complete basis for the measurement of well-being and sustainability requires consideration of areas outside the SNA's standard boundaries.

2.52 To provide a clear structure for delimiting the role of the SNA in the context of measuring well-being and sustainability, the current section focuses on measures within the sequence of economic accounts while the following section introduces measures that relate to aspects of well-being and sustainability that are outside the standard production and asset boundaries.

2.53 The combination of accounts and aggregates within the sequence of economic accounts provides a rich basis for organizing data about well-being and sustainability and for deriving relevant aggregates and indicators. In particular, the sequence of economic accounts provides a comprehensive platform for the integration of data on prices and quantities of goods, services and assets and hence supports measurement in volume or real terms and in turn~~hence~~ provides measures to support measurement of economic welfare. Four ~~Three~~ areas are introduced in this section: measures of income and consumption, measures of wealth, ~~and~~ measures of distributions across households and measures concerning the environment. More detail on relevant measurement approaches, in particular concerning measures of distribution of income, consumption and wealth are provided in Chapters 32, 34 and 35. Note that the potential to undertake measurement beyond the SNA's production and asset boundaries is considered in Section D.

2.54 In the measurement of income, consumption, wealth and distributions across households, the analysis of well-being and sustainability can be well supported through measurement of spatial variation. For example, measurement can focus on breaking down income, consumption and wealth measures by sub-national administrative areas within a country. Such spatial information can be of high relevance in understanding the variation in trends in well-being across a country but also in terms of supporting policy responses in cases of catastrophic events such as floods, hurricanes and storms.

2. Measures of income and consumption

2.55 The measurement of income and consumption relates directly to the measurement of current material well-being. At a national level, aggregates such as gross domestic product and gross national income provide measures of the income generated by economic activity within the scope of the SNA production boundary. However, neither of these aggregates recognizes the cost of using capital in the generation of income. In the past, compilation challenges limited the potential for cross-country comparability of net measures which deduct the costs of capital. With advances in data and methods, the SNA 2025 places greater emphasis on the derivation of net measures which in turn provides aggregates of production and income that are more relevant for the purposes of assessing well-being and sustainability. In scope of the SNA sequence of economic accounts, net measures are derived by deducting the ~~consumption of fixed capital~~depreciation and the depletion of natural resources.

2.56 Net measures, such as net domestic product and net national income, do not replace and generally complement the corresponding gross measures in the sequence which remain relevant aggregates for different policy and analytical questions, for example concerning aspects of monetary and budgetary policy. A longer discussion on the relevance of net measures is presented in Chapter 21.

2.57 Given the focus of ~~economic~~ material well-being on the household sector, of particular relevance in the SNA sequence of economic accounts are the accounts of the household sector. Important aggregates from these accounts for the assessment of ~~economic~~ material well-being include: household disposable income, household final consumption, household saving and household net worth.

2.58 Across countries, there is variation in the way in which governments provide services to households. To support improved comparison and understanding of household consumption patterns across countries, the SNA has developed measures of adjusted household final consumption and disposable income, where individual consumption paid for by governments and non-profit institutions serving households (NPISH), for example, health and education services, are allocated to the household sector rather than being treated as government consumption. Of course, households will also benefit from the public goods provided by

governments such as law and order, and a comparison of levels of expenditure on these services will also provide insight into the ~~economic~~ material well-being of households.

2.59 The distribution and redistribution of income accounts for households will also provide measures of the different mix of incomes earned by households including ~~compensation~~ remuneration of employees, property income (interest, ~~and~~ dividends, ~~and~~ rent, etc.), social benefits and other current transfers, while also recording payments of taxes. The composition of these flows and structural changes over time can provide important context in understanding the general ~~economic~~ material well-being of households, particularly when supported by breakdowns according to different household groups.

2.60 The use of income account for households derives measures of household saving by deducting final consumption expenditure from disposable income. In compiling measures of final consumption expenditure most national accounts provide some level of detail concerning the types of goods and services consumed by households following the Classification of Individual Consumption by Purpose (COICOP). Such information can provide a national perspective on the share of final consumption expenditure spent on food, transport, education, energy, etc. Again, breakdowns of these data by household groups will provide richer insights into well-being. These topics are considered further in Chapters 32 and 34.

2.61 For many of these income and consumption measures, the assessment of current ~~economic~~ material well-being will be complemented by deriving measures in volume or real terms, i.e. removing the effects of price change. While volume and real measures are not presented directly in the sequence of economic accounts, their measurement is a standard feature of national accounting compilation systems with standard practices described in Chapter 18.

3. Measures of wealth

2.62 At a national, economy-wide level, the SNA sequence of economic accounts can provide a series of wealth related measures, including measures of net worth, that are relevant in the assessment of well-being and sustainability. The compilation of time series of wealth measures will provide an indication of whether the capital base of a country is improving or declining and measures expressed in real terms or per capita terms will provide additional insights on the aggregate trends. The SNA's capital account, other changes in volume of assets and liabilities account, revaluation account, and balance sheet will also provide information on measures of changes in wealth including investment (capital formation), depreciation, depletion, appearances, catastrophic losses and revaluations. All of this information can help build a picture of the wider trends and expectations for wealth for the economy as a whole. Although the assets in the sequence of economic accounts do not cover the whole suite of assets mentioned before, the sequence does capture a full set of produced and non-produced non-financial assets, and ~~including~~ a component of the value of natural capital. In addition, the SNA provides a complete overview of financial assets and liabilities. ~~Thus, if~~If there are trends of concern within the scope of these ~~produced and non-produced~~ assets, then these trends will be relevant in a broader context as well.

2.63 For the household sector as a whole, a range of wealth measures can be taken from the sequence of economic accounts. Thus, measures of household wealth, its changes over time, in real terms and per capita, can all be taken from the household sector's sequence of economic accounts.

2.64 At both the economy-wide level and for the household sector, it will be relevant to consider the changing composition of financial and non-financial assets within the balance sheet. Particular focus may be placed on, for example, estimates of pension entitlements and measures of the housing stock, including the value of dwellings and land. Supplementary items such as the value of consumer durables included in household final consumption expenditure will also be of relevance for assessing the well-being of the household sector.

2.65 For all sectors and for the economy as a whole, measures of financial assets and liabilities may be an important consideration in assessing sustainability. This could include for example, data on the composition of financial assets, levels of debt and liquidity. The measurement of financial assets and liabilities is discussed in Chapter 12 and is not considered further here aside from noting the relevance of understanding the distribution of household sector financial assets and liabilities.

2.66 Although not included in the balance sheets of households, the sustainability of their well-being will usually

be closely tied to the quantity and condition of a range of public and private investments that support the supply of public goods and services (e.g., investments in roads, hospitals, schools, energy and water supply, etc.). The sequence of economic accounts should provide relevant information on the capital stock, the level of depreciation, the level of gross fixed capital formation in these asset types, and the sources of funding for this investment. Again, measures in real terms and per capita will be of high relevance in assessing sustainability and determining capacity gaps.

4. Measuring distributions across households

2.67 All of the measures and aggregates described above are included within the SNA's sequence of economic accounts and can provide a rich national level view of many aspects driving the current economic well-being of households, recognizing that important aspects of well-being lie outside the measurement boundary. However, in all societies, not all households are equal and hence the nature of the distribution of income, consumption and wealth across households is an important factor in understanding current economic well-being.

2.68 The various income, consumption and wealth measures described above can be ascribed to individual households and then households can be grouped to derive aggregates focused on different types of households within the household sector. Household types may be grouped by income or wealth deciles/quintiles, home ownership status, or location (e.g., region). Alternatively, households may be grouped according to the characteristics of a reference person in a household such as gender, age, education level, employment status and industry of employment. A comprehensive discussion on these distributional issues is presented in Chapter 32 on accounting for the household sector. That discussion on distribution encompasses a range of topics including links to the measurement of the informal economy, the use of equivalence scales and the recording of supplementary items recommended for measurement such as consumer durables.

5. Measures concerning the environment

2.69 A long-standing area of interest for many analysts has been the description of the connection between the economy and the environment. This has often been simplified in a national accounting context as requiring the adjustment of measures of GDP and the derivation of so-called green GDP. In fact, the connections between the economy and the environment are far more extensive. They encompass the dependencies and impacts of economic activity on the environment, as reflected for example in flows of water, energy, natural resources and emissions, and the ~~many~~ various economic activities focused on environmental protection and restoration.

2.70 In this context, the SEEA has been developed to provide a comprehensive framework for measuring the environment and its connection to the economy. It is introduced further below. The accounts of the SEEA apply and extend the accounting treatments and rules of the SNA and there are a number of instances where there is an overlap between the entries in the SEEA and entries in the SNA sequence of economic accounts. In particular, both the SEEA and the SNA incorporate measures of environmental assets including the value of natural resources, the changes in value and volume of these resources (including through discovery, depletion or catastrophic loss) and associated income streams (including flows of natural resource rent). As well, the sequence of economic accounts contains data on transactions that can be associated with the environment such as environmental protection expenditure (and associated financing arrangements), environmental taxes and subsidies and payments for access to resources. The SEEA provides accounts which explicitly identify these transactions since they are not usually readily identifiable in standard presentations of the economic accounts.

2.71 ~~Further,~~Current refinements to the SNA sequence of economic accounts concerning environmental issues build on advances in accounting described in the SEEA. ~~[NB: The following text is to be confirmed pending the outcomes from the SNA2025 consultation and revision process.]~~ First, the measurement of natural resources has been explicitly extended to include the value of energy from renewable sources, including wind and solar (but excluding from biological resources which is already captured in the accounts). Second, the entries to record rents arising from the extraction of natural resources have been amended. Third, the costs of depletion of natural resources are now treated as a deduction from income in the production account.

Fourth, the measurement boundaries and treatments have been clarified for different types of biological resources. ~~including produced and non-produced biological resources and migrating and non-migrating biological resources.~~ Finally, the recording of emission trading schemes and other environmentally related transactions such as provisions, has been updated to support comparable and coherent measurement.

D. Accounting approaches for the measurement of well-being and sustainability

1. Key features of accounting approaches

2.72 There is widespread acknowledgement of the relevance of measuring aspects of well-being and sustainability that are not captured within the standard production and asset boundary of the SNA's sequence of economic accounts. Section B introduced the relevance of using accounting-based approaches for the organization of data that can enhance and broaden the information set for the discussion of well-being and sustainability. This section introduces a range of well-established accounting approaches for measuring components of well-being and sustainability beyond the SNA. In doing so this section highlights the potential to apply alternative and complementary measurement boundaries.

2.73 There are five key features of the accounting approaches that have been developed ~~for this purpose~~. First, the accounting approaches adapt the various types of account structures used in the SNA including supply and use tables, balance sheets and asset accounts. This supports application of the same accounting identities as applied in the SNA and the derivation of balancing items and aggregates.

2.74 Second, the accounting approaches include accounts in both monetary and non-monetary terms thus supporting the organization of a wider range of information than recorded within the SNA's accounts.

2.75 Third, connections and intersections can be made between the accounting approaches described here and individual accounts within the SNA sequence of economic accounts. For example, accounts for flows of water and energy and accounts for unpaid household service work can be connected to standard production accounts and household sector income accounts. Beyond the analytical benefits of these connections and intersections to the sequence of economic accounts, they also allow for more coordinated data collection and treatment.

2.76 An extension of this feature is that the linkages across different topics can be more readily analyzed. For example, there are important connections between unpaid household service work and the production of health care. The consistent application of accounting approaches can facilitate a richer understanding of these connections, including for example, examining each of these topics using a common disaggregation of household types.

2.77 Fourth, connections and intersections across accounting approaches and the organization of data can be strongly enforced through the use of consistent classifications and associated alignment in the detail presented in accounting tables. Of particular relevance will be the consistent application of classifications of economic units (by institutional sector and by industry), classifications of products and socio-economic breakdowns such as household groups.

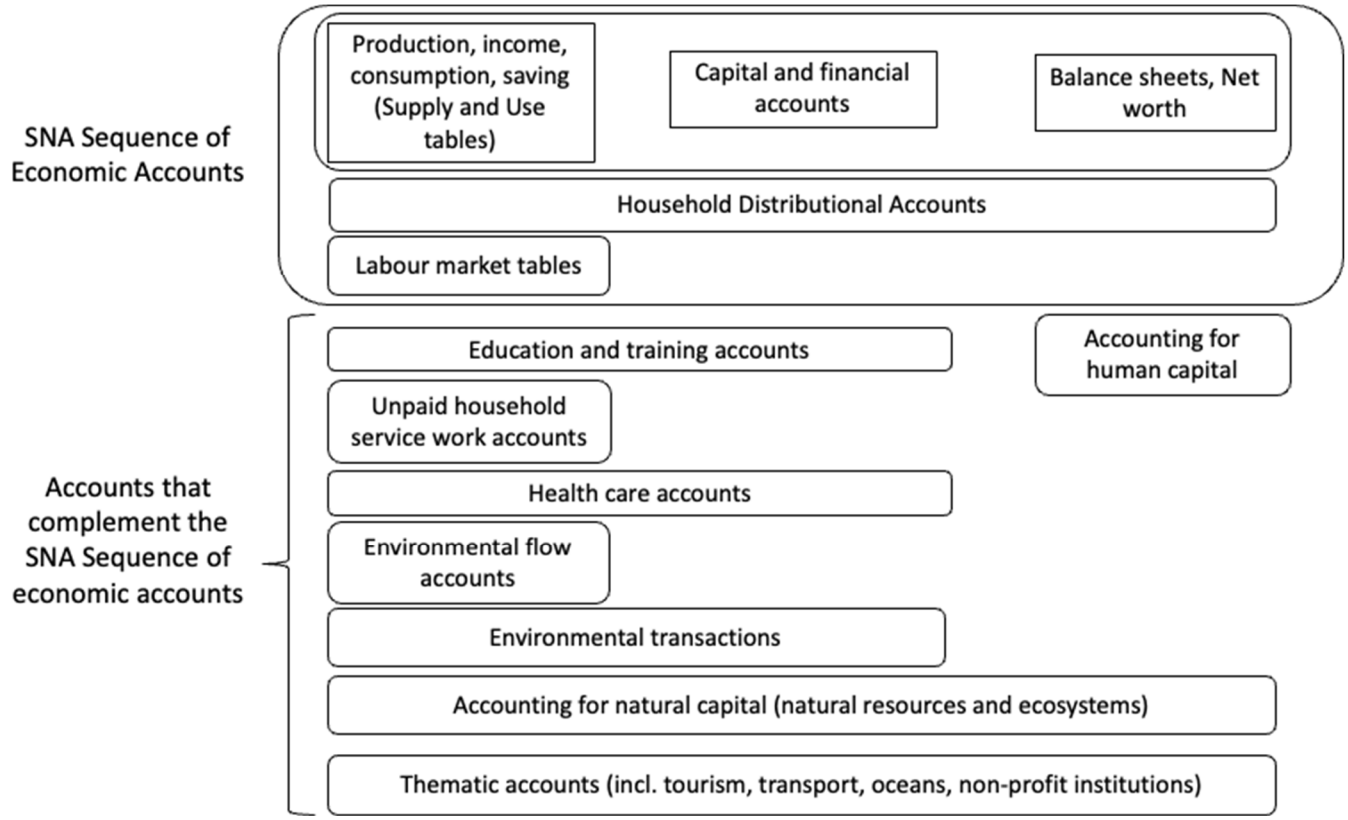
2.78 Finally, all accounting approaches support discussion of the connections inherent between ~~a narrative concerning~~ well-being and sustainability that relate to~~s~~ changes in the quantity and quality of the stocks of different capitals and ~~to~~ the flows of benefits (or loss of benefits) that are embodied in well-being. The ~~consistency of this narrative~~embodiment of these connections between stocks and flows across accounting frameworks is an empowering one for users and compilers through the ability to frame the discussion of well-being and sustainability using a common language across economic, environmental and social dimensions.

2.79 While the compilation of these accounting approaches expands and broadens the range of information to support the discussion of well-being and sustainability, there remain a range of aspects that are not within scope of the measurement describe here. Such aspects include health outcomes (as measured for example by life expectancy), subjective well-being, social cohesion, crime and justice, and governance. Also not discussed here are applications of accounting approaches to support measurement in relation to specific activities or events (such as the effects of catastrophic natural disasters), although accounting approaches can

help to understand the impact of these activities or events.

2.80 The remainder of this section introduces six accounting approaches of high relevance to the discussion of well-being and sustainability, namely the accounts of the SEEA, and accounting for labour, health care, unpaid household service work, education and training and human capital. ~~The figure below~~Figure 2.1 provides a stylized representation of the connections between these various accounts and the sequence of economic accounts, including household distributional accounts and labour market tables.

Figure 2.1: A broader and enhanced combination of accounts



2.81 Additional detail on the connections between these accounting approaches and the SNA sequence of economic accounts is presented in Chapters 34 and 35 and there is an extensive specific literature on each of these accounting frameworks that should be referenced when working on these topics. Further, there is discussion of some of these accounting approaches in specific SNA chapters. These chapters include Balance sheet (Chapter 14); Supply and use tables (Chapter 15); Labour (Chapter 16); Summarizing, integrating and balancing the accounts (Chapter 19); Households (Chapter 32), From whom to whom tables and related financial analysis (Chapter 37) and Thematic accounts (Chapter 38). The presence of these connections ~~are~~

is inevitable given the inherent inter-connectivity of the SNA system and its wider connections as described here and hence some overlap in the discussion across the chapters should be expected.

2. System of Environmental-Economic Accounting (SEEA)

2.82 The System of Environmental-Economic Accounting (SEEA) is a multipurpose statistical framework that describes the environment and its connections to the economy. The SEEA is presented in a number of documents that collectively provide statistical standards, international recommendations and technical guidance. These documents include the SEEA Central Framework and the SEEA Ecosystem Accounting and the supplements SEEA Water, SEEA Energy and SEEA Agriculture, Forestry and Fisheries.

2.83 The SEEA complements the SNA by providing a thorough approach to the organization of environmental data in non-monetary and monetary terms. While there are some overlaps with the scope of the SNA, for example concerning accounting for the monetary value of ~~cultivated biological resources and~~ natural resources, there are many areas covered in the SEEA that are not accounted for in the SNA. However, the connection between the two systems has allowed the significant advancements in the SEEA since 2010 to provide important inputs to the update of the SNA within the general intent to harmonize concepts, increase the visibility of environmental issues and refine valuation concepts and methods across both statistical frameworks.

2.84 The accounting described in the SEEA commences from the perspective of recording all environmental stocks and flows and the connections to economic units. Thus, within the scope of the SEEA are accounts for environmental assets in non-monetary (biophysical) and monetary terms; accounts (physical supply and use tables) for material and energy flows; and accounts for environmental transactions, including accounting for environmental taxes and subsidies and the activities of the environmental goods and services sector.

2.85 In relation to environmental assets, to cover the breadth of stocks and flows, the SEEA's measurement boundary is broader than the SNA's. In the SEEA Central Framework the extension is made to include within scope all environmental assets in non-monetary terms whether or not they have an exchange value within scope of the SNA sequence of economic accounts. Thus, for example, the area of land without an exchange value is included within the scope of the land accounts of the SEEA Central Framework. The SEEA Ecosystem Accounting places direct focus on the measurement of ecosystems and the services they supply. It extends the measurement boundary for environmental assets relative to the SNA by including all ecosystems within a country and by recording flows of ecosystem services between ecosystems and economic units.

2.86 Specific examples of SEEA accounts include supply and use tables for water, energy, air emissions (including greenhouse gas ~~GHG~~ emissions), emissions to water and solid waste. Each of these accounts is structured to provide a comprehensive tracking of flows from the environment, within the economy and returns to the environment; and to present data according to the industry and sector classifications used in the SNA. The data can thus support the derivation of many indicators (e.g. footprint indicators) and types of analysis (e.g. extended input-output analysis). The SEEA Central Framework also provides definitions that enable environmental transactions recorded within the SNA sequence of economic accounts to be identified and consistently reported.

2.87 The SEEA Ecosystem Accounting framework presents standards and recommendations for the measurement and analysis of ecosystem stocks and flows. Accounting for ecosystem assets and the services they generate is crucially important for reflecting the importance of natural capital to a fuller extent and hence providing more complete measures of well-being and sustainability. In accounting for stocks, ecosystem accounting incorporates measurement of both the extent (size) and composition of ecosystem types and the condition (or health) of ecosystems. In accounting for flows, ecosystem accounting provides a framework for recording flows of ecosystem services such as biomass provisioning, air filtration, water purification, coastal protection, pollination and recreation related services that collectively contribute to human well-being either as inputs to market goods and services or in providing additional non-market benefits. The SEEA Ecosystem Accounting thus recognizes stocks and flows that are outside the SNA's production and asset boundaries and presents an associated sequence of accounts.

2.88 The range of data encompassed by the SEEA provides a rich basis for describing the environmental

dimension of well-being and sustainability and the use of an accounting structure provides the opportunity to link and use environmental data alongside, and in combination with, the SNA sequence of economic accounts data and other data discussed in this chapter. For many well-being and sustainability related reporting and analysis purposes, the development of coherent information sets linking the environment and the economy represents a significant step forward. Chapter 35 provides further discussion of the SEEA.

3. Labour

2.89 In addition to providing insights into the role of labour in the production process, more detailed information on labour is important as it directly contributes to the well-being of households. First, it provides the income needed to satisfy basic needs and pursue other important life goals. Second, the quality of a job, the opportunities it provides to develop new skills, and the time spent commuting and in the workplace are all aspects directly affecting household well-being.

2.90 It is recommended to include tables on labour as standard components to accompany the sequence of economic accounts (as is the case for the supply and use tables). These ~~"~~labour market tables~~"~~ ~~would~~ provide coherent and consistent data on aspects of the labour market, both in monetary terms and in physical terms. The information in the labour market tables will provide insights into the labour market, its role in the distribution of income, and the role of labour in economic growth. This information will also provide insights into working and living conditions, including the impact of changes in production arrangements, for example driven by digitalization and globalization. There will also be direct connections between the data in labour market tables and accounting for a number of other aspects of well-being and sustainability including unpaid household service work, human capital and education and training expenditures. Chapter 16 provides further discussion of labour market tables.

4. Health care

2.91 As health is commonly considered an important element of people's well-being, it is important to have more detailed insights concerning the production and outputs of the health care systems in countries, the entities involved, and how this activity is being financed. To this end, health accounts can be compiled that provide more detailed information on health care final consumption expenditure data (as presented in the sequence of economic accounts) in terms of functions, providers and financing schemes, following the guidance and treatments of the System of Health Accounts 2011 as described in Chapter 34.~~3.~~ The focus of measurement here is on the outputs of a country's health system rather than the health outcomes that might be reported in terms of expected life years and similar statistics. While the provision of health care may not always be the primary determinant of health outcomes, the information from health accounts can still give direct insight into the nature of the societal response to securing those outcomes.

2.92 On the basis of this information, important indicators can be developed that provide users with relevant insights into the provision of health care in countries, such as health care expenditures as a share of GDP, per capita or per household group, expenditure by health care function, the shares between health care expenditures paid out of pocket versus the payments made by private insurance, government or non-profit organizations. To support derivation of more cross-cutting indicators, it is also recommended to ensure the inclusion of measures in physical terms, such as employment in health and social care and number of hospital beds available. Chapter 34 provides further discussion of health care accounts.

5. Unpaid household service work

2.93 The sequence of economic accounts excludes unpaid household service activities (except for owner-occupied housing services) from its production boundary due to challenges in measurement and the view that their inclusion may detract from rather than add to the usefulness of the SNA for the primary purposes for which

~~[3] There are some small differences between the SNA and SHA that could be considered in a future update of the SHA.~~

it is designed, that is macro-economic policy and analysis~~, decision taking and policymaking~~. However, understanding this work is crucial to the analysis of household well-being. Individuals' well-being is affected by both paid and unpaid work, with each feeding into goods and services consumed by households. Furthermore, measurement of unpaid work may contribute to a fuller understanding of economic growth, factoring in the impact of shifts across the SNA production boundary (e.g., for preparing meals).

2.94 To support analysis of these activities, accounts for unpaid household service work can be compiled to complement measures of household production activity included in the sequence of economic accounts. Data from these accounts can be used to derive complementary estimates of GDP, as well as extended measures of household disposable income that reflect the implicit income derived from unpaid household service work. It is also recommended to include estimates of consumer durables as used in the production of unpaid household work on the balance sheet, as part of the extended accounts. Chapter 34 provides further discussion of accounting for unpaid household service work.

6. Education and training

2.95 From an economic viewpoint, education is important for improving both career opportunities and living conditions by gaining knowledge and skills that can be used in day-to-day life. Furthermore, it provides a sense of self-fulfillment that may also enhance well-being. Many people spend large portions of their life in the education system, so it is important to fully understand the production and outputs of these institutions, the entities providing the services, and how activities are financed.

2.96 Accounting for education and training can be undertaken through the compilation of thematic tables. These tables present data on output by provider and purpose, education expenditure by purchaser and purpose, financing of education expenditure by sector and purpose, and cost structures of education output by purpose. Chapter 34 provides further discussion of accounting for education and training expenditures.

7. Human capital

2.97 Assessing the role of human capital in the economy is gaining increasing prominence in discussions on productivity and sustainable development. Generally speaking, there is a need for a better understanding of the role of human capital in production and its relationship to other knowledge-based capital included in the SNA. How human capital is created, how it affects labour markets, and how it relates to the sustainability of future growth paths are all key topics of interest. As an important asset for households, it provides career opportunities, and benefits day-to-day activities.

2.98 To support investigation of these aspects of sustainability, extended tables on human capital can be compiled, encompassing stock estimates in both volumes and current prices and reflecting different demographic dimensions (e.g., gender, age, educational attainment). Two approaches to accounting may be applied, a cost-based approach and a lifetime income approach. Further discussion of these approaches to accounting for human capital is provided in Chapter 354.