

## **2008 SNA update issues**

### **I. Globalization**

1. Economic globalization has created new opportunities for businesses to organize their production chains more efficiently. This has increased the complexity of compiling economic statistics as it is more difficult to break down production activities on country-by-country basis. As a result, the measurement of key economic indicators, including gross domestic product, has been affected. Emerging global production arrangements pose challenges to business and macro-economic statistics, business registers and economic classifications. These challenges include implementation of the principle of economic ownership, especially in relation to intellectual property products, and the recording of cross-border transactions in goods and services in compiling national accounts and balance of payments statistics.

#### **1) A typology of global production arrangements**

2. Update the typology of global production arrangements with emerging types of global production arrangements and to test the usefulness of the existing typology on the basis of new case studies. The typology facilitates the international comparability by helping national accountants and balance of payments compilers to determine: a) The roles of the various actors in a global value chain; b) Who are the economic owners of inputs, outputs and assets along the production chain; c) The nature of transactions taking place inside the global value chain. Further work is needed on the global production in the domain of services, particularly the business models followed by so-called international service arrangers and international value chains of services.

3. Updating and advancing the typology require that national accountants and balance of payments compilers continue to closely cooperate with economic classification experts, business register specialists and experts in the field of the most relevant source statistics (e.g. business surveys, foreign affiliates statistics (FATS), foreign direct investment (FDA), international merchandise trade statistics (IMTS), statistics of international trade in services (SITS), research and development (R&D)).

#### **2) Factoryless goods producers and recording of their transactions**

4. Factoryless goods producers (FGP) are producers outsourcing their manufacturing activities but owning the underlying intellectual property products (IPP) and controlling the outcome of the production process. This type of arrangement is becoming more and more widespread and it raises the issues of: (a) the delineation and classification of factoryless goods producers; and (b) the correct recording of transactions between those producers and contractors. If determined to be a merchanting type transaction, since FGPs value creation reflects the inclusion of IPP (including brand value) it would be preferable to at least separately identify merchanting transactions where the value creation largely reflects distribution activities from those where the value largely reflects IPP, perhaps adopting new terminology.

### **3) Merchancing**

5. The merchancing of services payments should be re-routed through the service recipient. The proposed treatment assumes that the receipt of the services changes the productive capacity of the recipient, which would be reflected, in part, in the market value of the equity of the recipient. Where the third party facilitates the provision of the service and receives a commission, this should be treated as the provision of an “other business service” by the third party, provided to the payer of the commission. Where the third party bundles the services with other services, or transforms them before provision to the final recipient, then these services would be treated as an import of services by the third party from the service provider and an export of services to the final recipient

### **4) Special Purpose Entities and identifying economic presence and residency**

6. The use of special purpose entities (SPE) structures has increased in a context of multifaceted and flexible multinational enterprise (MNE) structures to obtain benefits from different legal and tax regimes which allows them to maximize profits after taxation. Identifying separately SPE activities is essential for market analysts and policy makers to analyse cross-border interconnectedness and understand the associated risks.

7. In a context of increasing globalization, SPEs have evolved beyond those structures anticipated in the current statistical manuals. While originally SPEs were mostly set up by financial institutions, they have evolved to include nonfinancial specialized entities established by MNEs to manage intellectual property rights, research and development, trade, and other activities as part of the group- wide financial and profit maximization strategy. Considering the evolving nature of SPEs, there is a need to develop further guidance on SPEs beyond what is in the current statistical manuals.

8. While there is not an internationally agreed SPE definition across all statistical domains the IMF’s BOPCOM Task Force on SPEs (TFSPE) proposed an international definition of SPEs in the context of cross-border statistics so that cross-country comparable data can be collected (BOPCOM 18/03). This definition has been adopted by BOPCOM and initial data collection will begin by the end of 2021 (for reference year 2020). The ISWGNA’s Task Force on the SNA Research Agenda: subgroup Globalization could study the extent to which a modified version of the proposed definition could be used for domestic-to-domestic relationships (such as those between central government and state-owned SPE-like enterprises).

9. A review of whether SPEs can be considered as separate institutional units from their parent companies may be needed. Currently, the residence of an SPE is determined according to the economic territory under whose legal jurisdiction the entity is incorporated or registered. If the entity is legally located in the same economy as its parent, the entity is (usually) combined with the parent and not recognized as a separate institutional unit because it does not satisfy SNA criteria for an institutional unit. However, if the entity is legally located in an economy different from its parent- by convention- the entity is recognized as a separate institutional unit. Some have called for a review of the residency principle as applied to SPEs and instead to reclassify the SPE to the economies of their parents.

10. As discussed in Moulton and van de Ven , there are two related reasons why the international standards currently treat SPEs as being resident in the economy in which they are legally registered. Firstly, only this treatment would be consistent with the actual cross-border cash flows resulting from economic transactions. Secondly, rerouting the transactions of SPEs would require a massive international exchange of individual data between statistical offices, which is not possible given existing legal constraints.

## **5) Economic ownership of Intellectual Property Products (IPPs)**

11. A strict recording of international transactions on a transfer of economic ownership basis (as opposed to legal ownership) can be challenging in the following cases:

- a) The parent may assign legal ownership of IPPs to SPEs which otherwise do not contribute to the MNE's production activities. National accountants will not easily be able to deviate from such legal arrangements. Usually they will be forced to follow reported earnings on IPP investment, despite the fact that these SPEs may not be considered as the economic owners according to the 2008 SNA principles. These "artificial" IPP services need to be identified in the national accounts or balance of payments, for example by presenting them in supplementary tables, to inform users about the significance of these flows (see issue 1 above).
- b) Recent work of the IMF's Task Force on SPEs put forward a proposal to collect supplementary information on SPEs for a reduced number of BOP and IIP components beyond direct investment activities. As transactions in goods would be relevant for merchanting SPEs, a separate line for net merchanting by SPEs is included. Regarding services, four distinct components of services have been included in the reporting list where SPEs can be of relevance: transport, financial services, charges for the use of intellectual property, and other business services. National accounts compilers should also consider whether the supplementary information meets their needs or whether additional information may be necessary. An additional complication is the intellectual property products (IPPs) and the measurement of 'intangible production', where the generation of mobile assets involves little or no physical presence (which is also tied to what constitutes a resident institutional unit under issue 1).
- c) Even when MNEs do not use SPEs as the legal owner of their IPPs, the principles of economic ownership of IPPs are difficult to apply inside multinational enterprises. The intangible nature of IPPs means that once they are produced their ownership and use are not easily observed since IPPs are not physically constrained and are non-rivalrous in nature. In other words, where IPPs are produced, used, and owned do not necessarily occur in the same country. This provides significant freedom for MNEs because the use of the IPP by one part of an enterprise group does not prevent the simultaneous use by another part and that the legal ownership of IPPs can be placed anywhere amongst the group. Various options for recording of IPPs have been discussed. Currently, the guidance states to record a change in economic ownership when a financial transaction between two institutional units occurs, which corresponds to a change in legal ownership.

- d) The recording of what entity is the economic owner of the intellectual property product also has implications for how the related charges for the use of the intellectual property is recorded. Since intellectual property (e.g. R&D) is often considered corporate property, payments for its use may not always be observed separately and may instead be shown as distributed or retained earnings from Foreign Direct Investment.<sup>1 2</sup>
- e) Lastly, the typology of global production as discussed in the Guide to Measuring Global Production uses ownership of IPPs as one of the criteria in classifying certain global production arrangements. Implications on the recording, especially for factoryless goods producers, needs to be borne in mind when determining the economic ownership of IPPs (tied to issue 1 & 2 of this paper).

## **6) CIF/FOB recording of imports and exports**

12. The CIF/FOB recording of imports and exports in the national accounts and the supply-use tables is in practice difficult due to data limitations. It is argued from conceptual viewpoint that the CIF/FOB recording seems to contrast the actual economic state of affairs and should therefore be replaced by a recording of goods imports and exports at actual transaction values. While the 2008 SNA introduces several important improvements, compared to its predecessor (1993 SNA) with respect to recording of imports and exports at a strict transfer of ownership basis (e.g. goods sent abroad for processing, merchanting), the required FOB recording seems to deviate from its general recording principle of actually observed transaction prices. The 2008 SNA recording of CIF/FOB may lead to mistakes in the trade balance when such recordings are not according to actually observed transaction values. CIF/FOB recording adjustments are not according to the general SNA principle of recording on ownership transfer basis as they require adjustments of services flows as actually observed. The asymmetries in international trade and CIF/FOB valuation of imports and exports need further work and should be included in the research agenda as a priority issue to be resolved in cooperation with balance of payments statistics experts.

## **7) Price and volume measurement related to globalization**

13. Price and volume measurement in light of globalization is should be adapted to some of the key characteristics of the output of global producers. Inevitably this work will require the engagement of price statisticians. Representative producer prices indices (PPA) as laid down in the Producer Price Index Manual (PPIM) 2004 and the Export and Import Price Index Manual (2009) are essential in this context. Global production may involve (imports and exports of) goods and services which have different characteristics than those typically produced for the domestic market. The following list of goods and services should be part of a future research agenda on price and volume measurement in the context of global production:

- a) Industrial processing services;

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<sup>1</sup> <http://www.unece.org/index.php?id=42106>

<sup>2</sup> Some have even called for the payments for the use of IPPs to be recorded as income rather than payments for services. <http://www.iariw.org/copenhagen/lynch.pdf>

- b) The output of principal and contract producers in an FGP arrangement;
- c) Trade services in connection to merchanting;
- d) Head office services;
- e) Other intra-company services;
- f) IPP related services (specifically R&D); and
- g) Inventories held abroad.

**8) New data sources needed to measure global production**

14. The changing accounting conventions between the 1993 and 2008 SNA, and differences between the fifth and sixth editions of the BPM, with respect to recording processing of goods owned by others, merchanting and FGPs are well understood. However, the required modifications in data collection are not always straightforward. Reconciling IMTS statistics with the imports and exports required in national accounts and balance of payment involves several steps for inward and outward processing, merchanting and factoryless goods production, each with its own data requirements. Depending on circumstances in individual countries, these data may not be readily available and adjustments in data collection are recommended. More specifically, the additional data needs relate to:

- a) Identifying import and export of goods in IMTS statistics which are not subject to transfer of economic ownership (goods sent abroad for processing or repair) and which should not be recorded as imports and exports in the national accounts or balance of payments. In addition to processing other corrections in IMTS may be needed, particularly when shipped goods are not subject to change in ownership (e.g. goods sent for repair).
- b) Identifying purchases and sales of goods abroad which need to be recorded as imports and exports in the national accounts and balance of payments, but which remain unobserved in IMTS statistics, as these goods do not physically cross the borders of the domestic economic territory.
- c) The design of business surveys should be such that the principle of ownership, and not that of territory, is used as a key concept in questions on inventories held by the surveyed unit. Changes in inventories of goods held abroad need to be recorded in supply and use tables. Similarly inventories held abroad need to be recorded in the national balance sheets. The explicit recording of inventories held abroad (apart from domestically held inventories) is also recommended for measuring trade margins correctly (excluding holding gains or losses).
- d) The data collection on international trade in services is a challenge in many countries. It is advised to include explicit questions about intra-group services in international trade in

services surveys, depending of course on the relative size of MNE activities and related output or consumption of intra-group services. Respondents of MNE affiliated companies could be asked to report payments as contributions from affiliated enterprises for management services, which are not reported under any other heading. The refined classification as presented in MSITS 2010 provides a solid point of departure. The funding questions in the R&D survey are considered a second-best alternative to obtain information on R&D related international trade flows.

15. In many countries, a sound coverage of the items above requires expanding the scope of existing surveys. Aspects of global production may be difficult to measure with existing sets of source statistics, or may even remain unobserved altogether (e.g. transactions in goods under merchanting, inventories held abroad). Yet, many NSIs are facing strong constraints in this regard. The optimal use of existing data may be the only feasible way forward. One important step in this direction is data validation by bringing together, and reconciling, the results from business surveys, merchandise trade statistics and the international trade in services statistics. This should preferably be done on the basis of an integrated business register that allows bridging the statistical business register and the customs register. It is also recommended to utilize existing customs data or information from the tax authorities to the fullest extent.

16. This is more of a measurement issue; however practical constraints may have an impact on guidance.

#### **9) Nationality concept / Extension of IIP on a nationality basis**

17. There is need to (re)consider whether it is useful to introduce a nationality concept (domestic companies versus foreign companies) in BOP/IIP. Such a distinction is likely to serve user needs (in particular at national level) in a globalized world. There have been discussions on the definition of the residence criteria, however no discussion on managing the duality residence/nationality within the BOP- IIP framework. More generally, evidence of the complementarity of the two concepts (residence/nationality), notably to analyze financial stability as well as better understanding the passage from GDP to GNI or the value of conventional IIP.

#### **10) New methods to measure global production**

18. Large and complex enterprises units (LCU), which were set up in recent years by several NSIs can be efficient in collecting and compiling data on the largest and most complex MNEs in a consistent and effective way. Typical LCU activities include integrated data collection (including register data), data compilation and consistency analysis. In the context of further improving the performance of LCUs, the sufficient cooperation mechanisms and collaboration among producers of statistics, both nationally and internationally need to be developed. Issues related to global production may oblige NSI's to combine efforts in completing their views on MNEs and global production and international trade more generally. The following areas of further development are relevant:

- a) The development of common international business registers for the most complex

MNEs (such as the Euro Groups Register) will assist in assigning the economic activities of the enterprises on a country-by-country basis in a mutually consistent way. Such registers may become the platform supporting the production of statistics on globalization based on micro data and may assist in identifying the economic relationships and transactions taking place between the various member units of an MNE. The Guidelines on Statistical Business Registers (UNECE, 2015) provide recommendations and practical guidance on establishing and maintaining statistical business registers, targeting both developed and less developed statistical systems. The Guidelines also give some instructions on how to handle MNEs and enterprise groups in a systematic way. However, further work to address issues related to globalization and particularly aspects of global production is needed and has been brought into the future research agenda on statistical business registers.

- b) Improving the recording of intra-company services flows of MNEs in international trade in services statistics could be a joint effort by NSIs. The IPP ownership decision tree shows that the producers of IPPs are much easier to identify than the users. When the producing and consuming units of intra-company services are not situated in the same country, the observation and recording of international flows of intra-company services should preferably be coordinated between the NSIs, at least for the largest MNEs, in order to avoid asymmetries in trade statistics. Confidentiality policies and existing restrictions to data exchange have to be taken into account. Further work is needed to explore the possibilities for exchanging micro data between NSIs strictly for statistical purposes such as data validation. International organisations should consider what role they could play to facilitate this process.
- c) There is a need for a permanent forum where country experts could share information and experiences on measurement issues related to global production arrangements. Globalization will continue to lead to new global production related issues that have not been examined so far. Such a forum could support stocktaking of new cases, identifying best practices and further harmonization of accounting practices.

19. This is more of a measurement issue; however practical constraints may have an impact on guidance.

**11) Analysing global value chains and trade in value added amplifies the need of high-quality statistics on global production in national and international accounts statistics**

20. One key requirement of carrying out input output analysis for measuring trade in value added is reconciling trade statistics with input-output tables at bilateral level. Key in this process is avoiding (or otherwise eliminating) asymmetries in trade statistics. In addition, the analysis of global value chains requires that national statistics build in a global dimension from the outset. This could be done by developing aggregations, not only on the basis of industrial classification, but also on the basis of business functions, for example by showing separate sub-groupings of processors, FGPs, foreign owned firms, etc. Doing so would allow countries to construct supply-use tables, broken down by these new groupings, that would certainly have a higher degree of

homogeneity, compared to aggregations which focus only the industrial classification of firms, where there exists considerable heterogeneity. This supplementary classification, which is expected to help identifying the business functions along the global value chain, is an issue for future research.

21. This is more of a measurement issue; however practical constraints may have an impact on guidance.

22. Examine the possibility of breaking down BOP goods and services account by enterprise characteristics, such as industry, nationality (foreign owned/domestically owned) and firm size. To increase the relevance of the current account (including both goods and services as well as primary income) for the analysis of globalization, information on the characteristics of the enterprises involved in these transactions is highly useful.

## **II. Digitalization**

23. In recent years, macroeconomic analysis has become increasingly challenging due to rapid quality improvements and product innovations. Although many of these changes are driven by globalization and increased international competition for labour and management, the most prominent driver is technological innovation. The effects of this innovation include sharply lower prices and increased efficiency in computers, cell phones, and the Internet; new goods and services; innovations in financial markets and new methods of payment; and reductions in costs and improvements in quality and efficiency associated with the use of technology. This new phenomenon is often described in terms such as the Internet age, the information technology (IT) revolution, Internet economy, the digital economy and the sharing economy.

24. The understanding of the size of digital economy can help in understanding changes in the economy and ultimately also better understand the role of digital economy for development. This relies on a sound statistical measurement of the digital economy which has intrinsic challenges that are being discussed by national accounts experts at national and global level. In addition, the rising popularity of Big Data presents the statistical community with a potentially rich data source for tackling the measurement challenges posed by the digital economy.

### **12) Satellite framework for the digital economy.**

25. Attempts to measure the digital economy and efforts to derive various indicators contained within it have been limited to delineating a range of industries and products and labelling them as “digital”. However, the proposed digital supply and use tables aims to capture, in a more systematic way, the production chains and value added of the units involved within the digital economy. This includes activities of digital intermediary platforms, the producers that rely on them, online only retailers (digital trade and e-commerce) and producers as well as businesses that provide free digital services such as social media. It also provides details on how the digital supply-use tables would operate; including more precise definitions on the digital industries and products distinguished. The proposal attempts to strike a balance between what is practically possible and statistically informative. Not all data required to populate the cells will be available immediately, but much will be, allowing countries to begin to create internationally



comparable estimates of activity within the digital economy.

### **13) Household production and consumption of digital products**

26. The pervasiveness of Internet access by households has blurred the traditional boundary between household production for market purposes, own account production, consumption, and leisure. Households are increasingly involved in transactions which previously would have been carried out through an intermediary. In other words, households are increasingly engaged in activities that would previously have been included in GDP. Although the scale of this 'digitalized' participation activities is likely to be significantly less than those for other non-market services outside the SNA production boundary, the inclusion of estimates would remain distortive and would require a subjective view on the price of the activity.

27. The sharing economy has resulted in the increased household participation in the form of unincorporated enterprises in informal activities. This raises questions on how to delineate dual use consumer durables and fixed assets. A specific example would be an individual using his car both for personal use (which would count as a consumer durable) and to drive for a ride sharing company (which would count as a fixed asset). The SNA does not provide prescriptive guidance on how durables should or should not be included as investment when they are also used for production purposes. A better understanding of how economies make the relevant distinction and the source information used will be needed to understand the impact on the national accounts.

### **14) Free digital products and services**

28. The digital economy has spawned free digital products which may be produced by volunteers, by consumers themselves or by platforms which are funded by advertising revenue and the collection of user data. The increase in household welfare from these products may not be adequately measured in the national accounts. Thus, there is a need to develop indicators of welfare from these products which are outside the boundaries of national accounts. These indicators could address issues such as the impact of digitalization on the welfare of different segments of the population, and how digitalization has changed the way households use their time. Households have been receiving free goods and services even before the advent of the Internet. An example is free media services (television and radio) financed implicitly via advertising. However, digitalization has sharply increased the scale of free or subsidized products. It has also created new complexities such as financing via the acquisition of Big Data in addition to the traditional model of financing via advertising.

29. Conceptual difficulties emerge when considering the creation of 'public goods' using labour provided for free, and where financing is typically only provided by donations (Wikipedia and Linux are two well-known examples). The activity of creating these assets is (correctly) not included in GDP and the assets have a zero value, although the assets are valuable to users. A better understanding of the economic benefits (and impact) through satellite accounts, in particular to households, but also to businesses would enable an assessment of the potential consequences on estimates of multi-factor productivity that occur when paid for assets is substituted by free assets.

## **15) The role of data and the SNA asset boundary**

30. Data have always had a central role in business decision making. Businesses strive to gather data on customers, to improve products and processes to enhance productivity, improve performance, and increase profitability. As storage and acquisition costs decreased and processing capacity (software, IT hardware) increased this led to an explosion in data accumulation. The simple fact that the data is in electronic form allows it to be analyzed for insights and decision-making at an unprecedented scope and scale. In some sense data itself has been transformed: it has become digital data. This digital data has allowed for new information/knowledge creation that could not have been done if the data were not in digital form. Consequently, digital data is becoming another factor of production and Bean (2016) states that it is analogous to physical and intangible capital.

31. The 1993 SNA introduced the notion of databases, with further clarifications provided in the 2008 SNA that specified that databases should reflect only the value of the underlying database management systems and the costs associated with the digitisation of data. This recommendation reflected the view that the underlying value (information content) associated with the data itself should not be capitalised because to do otherwise would indirectly open the door to the capitalisation of knowledge), , and as such, their contribution, as a factor of production, is de facto invisible in the accounts. Recent years have seen an explosion in the generation of data, and the use of data, notably in advertising-based business models, raising questions about the ‘invisibility’ of data in the accounts. There is a need for guidance on the treatment of data as part of the asset boundary or not; if it is a produced or non-produced asset; and the valuation of data

## **16) Price and volume measures related to digital products**

32. The digital economy has increased the ability of consumers to purchase customized goods and services. This makes it more difficult to control for quality differences when comparing prices. A more important challenge is how to capture the price changes arising from the shift to the digital economy so as to produce better quality GDP volume measures. For example, to the extent that Airbnb rooms are of higher quality than comparable hotel rooms, the use of a price index that only captures hotel rooms will fail to capture the switch to cheaper Airbnb rooms and underestimate the total volume of accommodation services.

## **17) Crypto assets**

33. With the rapid development in issuance and use of crypto assets for transactions, there is a need to develop guidance on the treatment of crypto assets and of compilation techniques, including data sources. Further research is needed on the recording of crypto assets with particular emphasis on their use as medium of exchange or store of value. Recording guidance currently developed for crypto assets are considered as interim, pending clearer future developments of crypto assets (e.g. regulatory measures).

### **III. Wellbeing and sustainability**

34. The SNA provides the overarching framework for the measurement of the macroeconomic activity via a set of interlinked coherent accounts. By its very nature the SNA sets boundaries around what is inside the System and what is outside of it – defining what is the ‘economy’. These boundaries have real world impacts for informed decision making and should be open for debate as society and the needs of users evolve. It is widely recognized that official statistics need to better inform on issues of wellbeing and sustainability, for example:

- a) The United Nations Sustainable Development Agenda identifies goals which build economic growth while addressing a range of social needs
- b) The Stiglitz-Sen-Fitoussi “Report by the Commission on the Measurement of Economic Performance and Social Progress” called for statistics to close the gap between aggregate production data and citizen’s well-being
- c) Many international organizations (e.g.. OECD, World Bank, IMF, G20) have adopted an Inclusive Growth approach which seeks to generate growth through inclusion

35. Guidance need to be developed to provide clearer links between material wellbeing, including for example distributional measures, and broader issues of wellbeing and sustainability. The latter could be further elaborated by developing a broader accounting framework, e.g. by combining the current framework with statistics on unpaid household activities, environmental-economic accounts, health and education. In addition, appropriate terminology (and branding) need to be developed to facilitate the integration of measures of wellbeing and sustainability with the core accounts and cooperation between those developing and preparing accounts in different fields to ensure the optimal use of resources.

36. As wellbeing and sustainability are all-encompassing themes and can’t be neat defined we need to have some principles to help us determine which domains to be included in the SNA research agenda. Suggested principles:

- a) Continue SNA focus on the economy - the economy contribution to wellbeing rather trying to measure wellbeing itself
- b) Ensure we have a household focus – informing outcomes for citizens
- c) Links to externalities – there will always going to be important measures outside of the SNA, need to link through to important issues even if they aren’t included in the boundary (i.e. SEEA approach)

#### **18) The broader framework for wellbeing and sustainability**

37. It is considered of the utmost importance to develop metrics that cast a wider net on the monitoring of the well-being of people and the sustainability of societal developments. As (sustainable) well-being is a multidimensional phenomenon, it may not be possible to capture it

in one catch-all indicator, and one thus has to agree and rely on a set of indicators which monitor the most relevant aspects. There are several ongoing initiatives in this area. The OECD Better Life Index is an example, in which eleven areas of (sustainable) well-being are being monitored: housing; income; jobs; community; education; environment; civic engagement; health; life satisfaction; safety; and work-life balance. But also the set of indicators developed for monitoring the Sustainable Development Goals (SDGs) can be grouped under this umbrella.

38. In trying to define a broader framework, the goal is to take all of this one step further, by developing a broader accounting framework that supports the monitoring and analysis of the interrelations between the various aspects of wellbeing and sustainability, thus providing a better understanding of the trade-offs and the win-wins between the various domains, and moving away from the primary focus on economic growth as the one and only indicator of progress.

39. This way of thinking about linking various areas of statistics has been developed and implemented in the area of environmental-economic accounting (SEEA 2012 Central Framework), but there are other promising initiatives as well. Furthermore, in the area of education and training, and in the field of unpaid household activities, more detailed guidance has been drafted and disseminated quite recently.

40. As a point on the horizon, one would like to see the development of an overarching accounting framework, in which statistics on economic, societal and environmental issues are integrated (not necessarily monetised), and in which one can easily drill down into micro-datasets. It is clear that this can only be a long-term goal, also requiring the development of a suitable conceptual framework. As a more realistic goal for the nearer future, one could envision the regular compilation of certain thematic satellite accounts, such as the ones mentioned above. Having accounts for the environment, health, education and unpaid household activities, or time use more generally, compiled on a regular basis for a substantial number of countries would definitely support the monitoring and analysis of quite a number of well-being aspects. In doing so, it is not necessary to compile all accounts at a quarterly or annual basis. Some accounts, for which structural developments are the primary focus, one could think of a compilation every 2-3 years, depending on user demands and the availability of source data.

41. In developing such a broader framework, one should also acknowledge the importance of communication, especially related to the terminology that is currently being applied. Referring to the traditional set of national accounts as being the “central framework” or the “core” set of national accounts and referring to the measurement frameworks for other areas as being satellite accounts, is not particularly helpful. One therefore also needs to rethink terminology and the content of what’s currently being referred to as the central framework. Vanoli proposes, for example, to refer to the current set of national accounts as the System of National Economic Accounts (SNEA), and to include a much broader set of accounts in the central framework of national accounts. In doing so, he also presents a concise conceptual foundation for the broader set of accounts, with reference to four spheres and their related information systems: economy, people, nature and society.

42. The System of Environmental-Economic Accounting (SEEA) 2012 Central Framework provides an accounting framework in which environmental issues are linked, in a consistent and

integrated way, with the economic activities as recorded in the current SNA. As such the SEEA provides an excellent example for defining supplementary tables for the broader framework within the context of national accounts. One of the discussion items in this area would be whether to simply include the whole SEEA Central Framework into the broader framework for measuring wellbeing and sustainability. Or should, in the context of defining a broader framework of national accounts, priority be given to some of the accounts defined in SEEA?

43. In any case, the above also warrants a more in-depth discussion about some broad potential paths for the future of the System of National Accounts as a set of international standards:

- a) Experimentation and flexibility – expansion through satellite accounts and supplementary tables where SNA includes a generalised chapter on “satellite accounts and other extensions”; with topic specific guidance contained in separate handbooks.
- b) Coherence and rigour – a family of standards: build on SNA-SEEA precedent by designing a family of standards covering the broad domains economy, environmental, human, and social.
- c) Towards measuring progress – expand the current SNA to cover a fuller range of wellbeing and sustainability topics beyond the current market economy focus.

## **19) Distribution of household income, consumption, saving and wealth**

44. There is a clear need and expectation to go beyond measuring the size or growth of the economy and better inform on who is benefiting – how the benefits of economic activity are being distributed. A significant amount of work has already been invested in putting more focus on household (adjusted) disposable income, in addition to economic growth. This includes decompositional analyses on which factors drive differences in economic growth versus the growth of real household disposable income, including its distribution across different household groups.

45. Significant investments have also been made in linking micro data on the distribution of household income, consumption, saving and wealth with the equivalent national accounts aggregates, leading to consistent distributional measures within the framework of national accounts, e.g. the work done by the OECD/Eurostat Expert Group on Disparities in National Accounts (EG-DNA), by the European System of Central Banks (ESCB) Expert Group on Linking Macro and Micro Data for the Household Sector (EG-LMM), and the World Income Database (DINA). Several countries have also put considerable efforts in advancing in this area, and some already compile and disseminate distributional results. As a consequence, much experience has been gained in this area, and excellent guidance on sources and methodologies is available.

46. From a conceptual point of view, this area can be considered as a “simple” breakdown of the household sector into a number of subsectors, be it based on income quintiles/deciles, composition of the household, or the type of income received. Annex 1 of the 2008 SNA already includes suggestions for the breakdown of the sector, based on the type of income received.

Having said that, a number of questions have been raised in relation to the measurement and recording of household transactions and positions. An example concerns the allocation of social transfers in kind to individual households, e.g. in relation to health and education. Furthermore, the recording of non-life insurance raises questions in the case of smaller groupings for which premiums and claims do not cancel out. Questions are also raised about the exact treatment of institutional households.

47. From a more practical point of view, breaking down the households' sector requires additional details on intra-household transactions and positions, such as those related to income and capital transfers between households, and transactions in second hand goods.

48. Finally, there is also a communicational aspect to this line of work. A key point here for the statistical community is to clearly understand and communicate the differences and relative strengths and appropriate uses between distributional results based on national accounts concepts and measures of inequality and poverty based on micro-based sources. These two bodies of work can inform one another in terms of quality and coverage.

## **20) Education and human capital, labour and productivity**

49. As the economy evolves (driven mainly by advances in technology), employment outcomes and the future of work have become an increasing concern of governments and societies. Changes in the arrangements of the production process (via globalisation, digitalisation, etc.) have real world impacts on the nature and availability of work and jobs. The role of the human capital content of labour is also growing. In turn these changes in the labour market drive changes in incomes, living standards, and wellbeing for many citizens. Understanding changes in the relationship between the production process and employment, including its human capital content, is thus critical for policy makers.

50. Despite labour being one of the two factors of production within the SNA production model, and being a fundamental component of the economic system more generally, it is not currently articulated as a separate account within the SNA. Unlike capital, there is no labour account to enable analysis of the stock, utilization, rates of return and so forth of labour within the production process. The study of productivity continues to develop with research initiatives including KLEMS; total factor productivity; quality adjusted measures of labour; human capital and so forth. Significant changes in the 2008 SNA, such as the capitalization of R&D, came about largely through the study of the role of capital in productivity growth. Having an explicit discussion of labour in the SNA would facilitate the research and analysis of productivity measurement.

51. Productivity is the key driver of real income growth, and real income growth is in turn the main determinate of material living standards. A major contemporary puzzle is the failure of recent advances in technology to translate into wage growth and increased real incomes for many citizens. Informing this puzzle must be one of the critical measurement challenges of our time. More fully articulating the role of labour within the economy can only help with this study.

52. A related issue concerns the role of education and human capital in the production

process, the labour market and its impact on people's income and wellbeing. Significant advances have been made on how to record and measure the increasing role of education and human capital, such as those included in the UNECE Guide on Human Capital<sup>3</sup>, in which ample guidance is provided on the compilation of satellite accounts on education and training, and also the development of satellite account on human capital, including methodologies for measuring investments in and stocks of human capital, and how to record all of this in the SNA.

53. A further elaboration of the above issues into a set of tables that supplement the traditional framework of national accounts could support the analysis of the production process and people's wellbeing in various ways. Assuming that a full integration of human capital measures into the SNA is not feasible and desired, this line of work is not expected to have an impact on the fundamentals of the current framework of national accounts, but it may lead to additional details and clarifications in the standard set of national accounts (e.g. more details on labour input), and it may also result in supplementary tables providing more detail (e.g. on expenditures on education) and/or alternative measures (e.g. on investments and stocks of human capital).

## **21) Health and social conditions**

54. Governments are under pressure to deliver the services expected by citizens, there is pressure on budgets across the globe driven by aging populations and technology advances (particularly in health care). Issues of productivity and outcomes in health and education are at the forefront of minds in most governments. The valuation of these non-market activities is a long-standing issue that needs to be addressed continuously. Also, building on work of the Atkinson Review and research by national statistical agencies, there is a clear need to have more guidance on the volume and price measurement of non-market output. It should also be considered whether there is an appetite for the SNA to more explicitly look at outcomes and not only outputs.

55. In this respect, it is also important to further elaborate the role of health and education in the context of wellbeing. Education has already been addressed in the previous item, but also in the case of health it is considered critical to design supplementary tables which provide a link between the traditional set of national accounts, including the measurement of outputs, and the outcomes of the process of producing health services. Here, reference can be made to the considerable work that has been done on the development and compilation of health satellite accounts.

56. Again, this line of work most probably won't have an impact on the fundamentals of the SNA, although a couple of issues could potentially lead to a reconsideration of current guidance. In respect of the latter, one can think of the measurement of the output value of non-market services. Also further guidance on the volume/price split could lead to changes in some of the recommendations in the 2008 SNA, although these may probably be considered as clarifications or interpretations.

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<sup>3</sup> "Guide on Measuring Human Capital", UNECE, New York and Geneva, December 2016. Available at: [https://www.unece.org/fileadmin/DAM/stats/publications/2016/ECECESSTAT20166\\_E.pdf](https://www.unece.org/fileadmin/DAM/stats/publications/2016/ECECESSTAT20166_E.pdf).

## 22) Unpaid household activities

57. The line between formal economic activity, informal activity and household activity continues to be questioned and to provide measurement challenges. While these issues are longstanding, recent developments in digital technology have led to a heightened interest and new questions on the role of unpaid household activities in the measured economy. In the past, lengthy discussions have taken place on the drawing of the SNA production boundary to exclude services generated by households for their own final consumption as well as services provided through volunteer activities. Whilst this issue has come up in several specific circumstances, a general reflection needs to be made again on whether the production boundary should be extended for these unpaid services. The Report by the Commission on the Measurement of Economic Performance and Social Progress, more commonly referred to as the Stiglitz-Sen-Fitoussi Report, also acknowledges this point of critique, and has included a recommendation (number 5), to “broaden income measures to non-market activities”, in which the latter refer to unpaid household activities. Furthermore, recently international guidance on valuing “unpaid household service work”<sup>4</sup> (UNECE, 2017) has been finalised.

58. It goes without saying that extending the current production boundary with unpaid household activities would have massive implications on all national accounts aggregates. Whatever the results of such a discussion, even without an extension of the production boundary, there is a clear need for developing a standardised framework, or supplementary tables, for the recording of the above services in physical and monetary terms. In physical terms, having a consistent set of data on time use, that monitors the trade-offs between paid work, unpaid work (e.g. child care, taking care of the elderly, various types of volunteer work) and the capacity for leisure activity, can provide significant insights in people’s choices and quality of life. Such information can also advance the agenda of compiling (experimental) results and supplementary aggregates.

59. Other issues that may need further consideration in this context include the following:

- a) the need for improved (possibly alternative) data sources on time use and consumer durables;
- b) the relationship with the provision of “free services” that have become available due to the digitalisation of the economy (Internet, social media, etc.);
- c) the treatment of household volunteer work, among which the creation of freely available asset created by communities of people (Wikipedia, R, etc.);
- d) the compilation of experimental results

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<sup>4</sup> “Guide on Valuing Unpaid Household Service Work”, UNECE, New York and Geneva, December 2017. Available at: <https://www.unece.org/fileadmin/DAM/stats/publications/2018/ECECESSTAT20173.pdf>.



## **23) Valuation and delineation of natural resources**

60. The valuation of natural resources poses significant measurement challenges that need to be addressed in order to ensure international comparability. The valuation of natural assets based on the net present value (NPV) method relies on the assumption that the commodity markets are in equilibrium, implying that the market value of the asset can be set equal to the sum of discounted (expected) future income, or resource rent, associated with the exploitation of the asset. However, as commodity prices show large swings, there is significant uncertainty about their future development and thus the value of the asset. Further research is needed to address volatile asset values where the valuation of natural assets exclusively relies on current commodity prices as being equivalent to the expected value of future incomes.

61. Whilst the SEEA follows the SNA in promoting the use of market valuation of stocks and flows which are "near-market", some stocks and flows are neither "market" nor "near-market" (such as water stocks and flows) and further guidance is needed for their valuation. Techniques to be used could include "mimicking markets" or deriving "proxy exchange values". This has a close linkage with discussions in the SNA context of valuation of mineral reserves (not currently extractable) and water resources. The valuation and recording of other assets, such as those related to stocks of renewable energy resources, may also need further elaboration, especially given the large-scale growth in these resources in the recent past and in the future. Furthermore, in the context of accounting for ecosystems (see below), some questions have been raised about the delineation of natural biological resources in the current SNA. This especially relates to the criterion of resources being managed, or not, by economic agents.

## **24) Accounting for depletion**

62. The depletion of non-renewable natural biological resources, in particular natural timber and aquatic resources constitutes an important flow in the existing SEEA 2012 Central Framework. The current SNA includes the concept of depletion of a natural resource with respect to its use in production, to be recorded as another change in the volume of assets (see para 1.47). Further research and discussion are foreseen on the practical measurement of depletion (which is linked to the valuation of natural resources, see above) and its role in the SNA sequence of accounts and main aggregates. The discussion could also include depletion of (non-renewable) mineral and energy resources, and conceptual issues on how to define the depletion of renewable resources.

## **25) Losses**

63. There are a number of issues related to "losses" which are not fully described in the SEEA and need to be further clarified. Notable examples include energy and water losses during the chain from original source to consumer. Whilst the SNA accounts for the recording of losses of inventories (see the Annex to SNA Chapter 6), the guidance could be further elaborated, particularly as it impacts the recording of transactions within and between industries and households.

## **26) Accounting for ecosystems**

64. The ecosystem accounting framework incorporates ecosystem services by extending the concept of production to include natural processes. The result is that ecosystem services become additional outputs within the national accounting system alongside the set of goods and services defined in the current SNA. Having been recognised as outputs produced by ecosystem units, one could consider recording these ecosystem services as being transacted within the accounting system. As such, the ecosystem accounting framework aims to treat ecosystem services and assets in a manner that is as analogous as possible to the treatment of produced assets and standard goods and services as described in the SNA. There are, however, several issues that still need further discussion, such as recording ecosystem services within a broad extended sequence of institutional sector accounts; the need for a clear articulation of the underlying economic assumptions and associated implications; guidance on valuation for non-monetary and imputed transactions; the valuation of ecosystem assets; and how measures of ecosystem degradation can be attributed to economic units (based on costs borne or costs caused).

## **IV. Cross cutting issues**

### **27) The relationship of SNA and IASB**

65. The International Accounting Standards Board is an independent, privately funded accounting standard-setter. The Board members come from nine countries and have a variety of functional backgrounds. The IASB is committed to developing, in the public interest, a single set of high quality, understandable and enforceable global accounting standards that require transparent and comparable information in general purpose financial statements.

66. The IASB works with national commercial accounting standard-setters to achieve convergence in accounting standards around the world. Nearly one hundred countries currently require or permit the use of IFRSs (International Financial Reporting Standards) or have a policy of convergence with them. The development of IFRSs reflects the changing needs and circumstances of the global economy in ways that can be directly relevant to the use and requirements of the SNA. The adoption of IFRSs by corporations can have a major impact on corporate accounting and the data available from corporate accounts.

67. The IASB works in a three-stage process to develop a new standard. The first is a draft with an invitation to comment (ITC); the second is an exposure draft (ED) also inviting comment; the third is the new standard. At each stage the background to the issue is clearly explained and the reasons are given for the choice recommended. In both the first two stages comments are invited from any interested party. The development of a regular dialogue between the national accounts community and the IASB would be a way to assure the needs of national accountants were represented to the IASB and national accountants were aware of the possible developments in the data sources. Already during the 2008 revision consultation of IASB standards and their counterpart for public accounting standards (the International Public Sector Accounting Standards Board, IPSASB) has been extremely beneficial. It is therefore desirable that a dialogue be established and maintained with the IASB with a view to amending the SNA to follow new accounting standards when appropriate.

68. One area of developing interest in international accounting, relating back to the question of multinational enterprises, is that of mergers and acquisitions. The text in chapter 21 draws on information in the OECD Benchmark Definition of Foreign Direct Investment. IASB work in this area should be monitored to see if these recommendations need amending.

69. There is therefore a need to compare SNA with the latest IFRSs and discuss if some IFRS aspects should be brought into the SNA.

## **28) Statistical units**

70. One of the challenges brought about by the rapidly changing nature of production and particular the ways in which enterprises produce goods and services has cast a spotlight on the SNA's preference for the use of the establishment as the preferred unit to compile industrial statistics, and in particular, supply and use tables. To investigate this issue, an ISWGNA Task Force on Statistical Units has been established to take stock of the 2008 SNA recommendations on statistical units (including institutional units), and to reflect on whether or not the recommendations on statistical units need to be adjusted in the future. The Task Force is expected to provide a clear view of what needs to be measured in the economy in order to identify ways to improve the definitions, if necessary, and taking into consideration: current country practices; regional accounts as well as productivity measurement.

### *The treatment of establishments in the SNA*

71. At the present there are two reasons to have the concept of establishment within the SNA. The first of these is to provide a link to source information when this is collected on an establishment basis. In cases where basic information is collected on an enterprise basis, this reason disappears. The second reason is for use in input-output tables. Historically, the rationale was to have a unit that related as far as possible to only one activity in only one location so that the link to the physical processes of production was as clear as possible. With the change of emphasis from the physical view of input-output to an economic view, and from product-by-product matrices to industry-by-industry ones, it is less clear that it is essential to retain the concept of establishment in the SNA.

### *Consolidation of enterprise groups*

72. Many enterprises operating within an economy are linked with other enterprises by complete or partial common ownership and a shared management structure to form an enterprise group. Enterprises also often share common ownership and management with foreign affiliates. It is common for enterprises within an enterprise group to trade with each other, sometimes exclusively, as when they perform an intermediate stage in a vertically integrated production process, and share the outputs and costs of ancillary production. They may also share the outputs and costs of research and development activities. Given their close ties it may be sometimes desirable to consider an enterprise group as a single entity and to consolidate the accounts of its members. (This is already the practice in some other statistics such as AMNE, FATS and Bank for International Settlements (BIS) consolidated presentations.) Members of an enterprise group

are usually engaged in different activities and sometimes in more than one sector, and so consolidation could affect aggregates, such as industry value added, and sectoral balance sheets. It is therefore probable that the most likely way forward would be by way of supplementary tables.

73. Separate consideration needs to be given to the case where some parts of the group are non-resident.

## **29) Trusts**

74. The SNA recommends that trusts be treated as quasi-corporations. In some cases, though, when one is used in effect as an SPE for a corporation, it is not considered to be a separate institutional unit but is merged with its parent, so long as they are both resident in the same economy.

75. No detailed description of trusts is given, though some may be owned by households and NPIs as well as by corporations. Further clarification on the nature of trusts and when their assets should be treated as belonging to separate units and when merged with the assets of their owners would be helpful.

## **30) Broadening the fixed asset boundary to include other intellectual property assets**

### *Innovation*

76. The fixed asset boundary of the SNA has been expanded to include the output of research and experimental development (R&D) that meets the general definition of an asset. It is evident that R&D captures part, but not all, of the innovation process. It may exclude many expenditures by the production and engineering departments of an enterprise. These same departments may also be responsible for identifying a potential new product and referring it to the R&D department to develop the science behind it. In addition, an enterprise may incur other expenditures before a new product goes to market. These include market research to determine the demand for a new product and marketing expenditures to promote it.

### *Marketing assets*

77. Marketing assets include brand names, mastheads, trademarks, logos and domain names. Marketing is a key driver of brand value and big corporations invest heavily in building and supporting their brands by advertising, sponsorship and other measures to build a positive image with customers. The SNA treats marketing assets as being non-produced and the expenditures incurred in their creation as intermediate consumption. They appear in the balance sheet only when they are sold. The major reason for not treating marketing assets as fixed assets is due to the difficulty of measuring their value.

### *Human capital*

78. Apart from any staff training required in bringing a new product to market, innovation

expenditures are disembodied from the people undertaking the innovation. Therefore they exclude to a large extent the “investment in human capital”.

79. Human input is the major input in most production processes, and the value of that input is to a large extent dependent on the knowledge that humans bring to the production process. It is well recognized that an educated population is vital to economic well-being in most countries. Despite the fact that there are major conceptual and practical problems with identifying the value of an educated labour force, there are repeated requests to address this issue within the SNA framework.

80. Following the publication of the Guide on Measuring Human Capital, and experience in some countries in producing human capital measures, there is therefore a question if the SNA capital boundary should be extended to include human capital as an asset.

### **31) Leases to use or exploit natural resources**

81. Part 5 of chapter 17 deals with the treatment of licences and permits to use a natural resource. Because the treatment for individual resources was developed independently there are some inconsistent treatments recommended.

82. In the case of a natural resource that has an infinite life and whose use in production does not affect the nature or value of the asset, the owner may allow the resource to be used for an extended period of time in such a way that, in effect, the user controls the use of the resource during this time with little if any intervention from the legal owner. In the case of land, the SNA recommends that the agreement between the owner and the user constitutes a sale of the land. In the case of a lease of the radio spectrum, the SNA recommends that the permission to use the spectrum does not change the ownership of the spectrum but constitutes a non-produced asset under the heading contracts, leases and licences. In the case of permission to use the atmosphere or a water body as an environmental sink, the SNA recommends that the payment be treated as a tax.

83. In the case of a natural resource that is subject to replenishment and which can be used indefinitely providing the use is restricted and the owner extends or withholds permission to continued use of the asset from one year to the next, payments by the user to the owner are recorded as rent. No adjustment is made to the value of rent recorded as to whether the use is in fact sustainable or not. If it were not sustainable, part of the payment should be seen as being compensation for the non-sustainable use.

84. In the case of a natural resource that is not capable of replenishment on a human time-scale and the use in production eventually exhausts it, the owner may permit the resource to be used to extinction. In this case the SNA recommends that economic ownership of the natural resource remains with the lessor while the lessee pays royalties recorded as rent. Only the lessee and not the lessor undertakes production. This means that the reduction in the value of capital due to production is recorded in the balance sheet of the owner as another change in volume of assets. The link between the rundown in the value of the assets and its use in production is lost. As in the previous case, the fact that part of the rent paid is compensation for the reduction in the

value of the asset is not recognized.

### **32) Treatment of Private-Public Partnerships**

85. The 2008 SNA retained a somewhat open position on the statistical recording of Public-Private Partnerships. Following greater experience of statisticians in dealing with these operations, and evolution in the structure of these operations, the statistical treatment can be revisited. BPM6 has no reference on PPPs, while the External Debt Statistics Guide 2013 refers to PPPs in its Appendix I. It would be adequate to have consistency across the guides.

## **V. Compilation issues**

### **33) Harmonization of SNA and BOP**

86. The underlying methodology and concepts of the most recent revisions of the statistical standards for the national accounts (2008 SNA) and the balance of payments (BPM6) are consistent with each another. However, large differences in the statistical data still remain in practice and guidance is needed in order to reconcile the data discrepancies between the national accounts and the balance of payments. Recently regional workshops were organized to discuss the main challenges in the production of national accounts and balance of payments statistics in the participating countries with a view of identifying priorities and recommendations for improving the consistency between SNA and BOP data.

87. This is more a measurement issue, but textual changes may need to be made to ensure complete consistency in practical application. For example, the terms employed by BPM6 and the 2008 SNA for payments made by policymakers are different and should be harmonized.

### **34) Islamic finance**

88. Islamic finance does not operate in the same way as conventional finance as it follows the Shari'ah Islamic law, principles and rules. The Shari'ah Islamic law does not permit receipt and payment of "riba" (interest), "gharar" (excessive uncertainty), "maysir" (gambling), and short sales or financing activities that it considers harmful to society. Instead, the parties must share the risks and rewards of a business transaction and the transaction should have a real economic purpose without undue speculation, and not involve any exploitation of either party.

89. However, issues on the implementation of the 2008 SNA recommendations for Islamic finance were raised during several meetings in the Arab Region organized by the Statistics Division of the United Nations Economic and Social Commission for Western Asia (ESCWA).

90. The Advisory Expert Group (AEG) on National Accounts agreed that further research on the statistical implications of Islamic finance in the national accounts is required and that practical guidance on the treatment of Islamic finance transactions; the sectorization of Islamic financial corporations; classification of Islamic financial instruments and corresponding property income; and calculation and recording of various types of Islamic financial services and related transactions needs to be developed.

### 35) Informal Economy

#### a) Informal economy in national accounts and external sector statistics

91. The informal economy broadly comprises (i) the production of goods and market services of households; and (ii) the activities of corporations (illegal; underground) that may not be covered in the regular data collection framework for compiling macroeconomic statistics. The 7th IMF Statistical forum considers not only the domestic activities, but also the cross-border transactions of resident units and reflects the need for a coherent macroeconomic statistics framework. The current statistical manuals, 2008 SNA and BPM6, fall short in providing a clear definition that is suitable for compiling the requisite statistics for policy analysis, therefore more clarification in the international standards may be needed.

#### b) Income from activities undertaken on an informal basis

92. Establishing the connection between the work on the informal sector and the SNA was an important contribution of the 2008 SNA. Interest in this area continues to attract considerable attention especially in developing countries, where a large proportion of people work in the informal sector. However, an exhaustive measurement of the size of the informal sector and the contribution of informal sector activities and informal employment to GDP and cross-border transactions is particularly challenging.

93. Data collected for understanding the informal sector are often not sufficient for measuring economic activity, and various surveys and collecting methods – focusing on household, consumption and employment data – may be needed as source data for an exhaustive measure of the informal sector in the national accounts. The supply and use framework, with a possible distinction between formal and informal activities, provides the greatest potential in which available source data are combined and balanced to arrive at exhaustive estimates of economic activity.