The role of international organisations in defining standards that follow the quality requirements and ensure comparability of data

Pieter Everaers [1],

[1] European Commission, Luxembourg; Pieter.Everaers@ec.europa.eu

Abstract: The ownership by countries of outcomes for the indicators for the Sustainable Development Goals (SDGs), as agreed in the United Nations General Assembly (25-27 September 2015) results document, clearly increases their responsibility to deliver quality information independently from policies. With this decision, it seems that the role of the international organisations in the reporting and monitoring – for many of the SDG indicators – will change from preparing the indicators and controlling their quality to the role of advisor on methodology and production methods. Even when they would be involved as specialised thematic agencies in the collection and processing, the fact that the country can decide itself what to submit finally to the UN, the role of the International Organisation in assessing the quality will be restricted. The responsibility for the countries to deliver high quality statistics according to the Fundamental Principles of Official Statistics will increase and with that also the need for countries governments to facilitate the National Statistical Systems to follow the Fundamental Principles of Official Statistics' requirements. Overall, this seems to lead to a situation where the influence by international organisations on the quality of the indicators decreases, and responsibility on the validity and reliability will be in the hands of the national statistical organisations.
There are several ways of guaranteeing a high level of this 'institutional and contextual' quality. One possible way is via strengthening the quality frameworks by consolidating the Fundamental Principles revised in 2013. However, this process will take several years. Another approach could be strengthening the role of quality assessor for specialised UN agencies. This could be done by more explicit checking (peer reviews, audits) of the country specific statistics in combination with a further strengthening of the standards and guidelines.

Keywords: Sustainable Development Goals, statistical standards, quality

1. Introduction

In its 47th meeting the United Nations Statistical Commission (UNSC) agreed on an initial list of 241 global indicators for the Sustainable Development Goals (SDGs) in the context of the 2030 [1] agenda for sustainable development. The UN General Assembly (GA) resolution 70/1 *Transforming our world: the 2030 Agenda for Sustainable Development* adopted by the GA on 25 September 2015, states that follow up and review of the SDGs will be voluntary and country led (Para 74 (a)).

While this calls for high quality data (Para 74 (g)) enhanced capacity building support for developing countries (Para 74 (h)) and for an active support of the United Nations system and other multilateral institutions (Para 74 (i)), it does not foresee any external validation or audit mechanism. In practice international organisations have no mandate to check (let alone validate and sign) country data. Countries are fully responsible and finally free to report the data they want (for the full text see annex 1).

International organisations traditionally collaborate to avoid overlap both in the development of standards as well as in the production of statistics. They also have an important role for data quality: they ensure geographical comparability through the establishment of agreed standards and methodologies and through supporting individual countries in implementing statistical programs; fill data gaps with model-based estimates when national data are not available or not of sufficient quality reliable (this applies in particular to developing countries where the statistical system is not well developed yet).

The ownership by countries of outcomes for the indicators of the SDGs, as agreed in the UN GA (September 2015) results document, clearly increases countries' responsibility to deliver high quality statistical information. According to this process, the role of international organizations is mainly focused on methodological support and recommendations. The routing

---

[1] A/RES/70/1-Transformoing our world: the 2030 Agenda for Sustainable Dewvelopment (The 2030 Agenda)
http://www.un.org/ga/search/view_doc.asp?symbol/=A/70/L./C/lang=E

of indicators from the countries to the global level for the annual monitoring report on the SDGs allows for a few alternatives; production and submission directly from the country to the specialised UN agencies (the custodians of the specific indicators); the production by the custodian [2] or a similar international organisation and a submission via the country back to the global UN level. Further, from the last Inter Agency Expert Group on SDGs (IAEG-SDGs)[3] meeting in Mexico (30 March- 1 April 2016) it has become clear that the UN specialised agencies and other thematic international organisations or working groups are expected, to play in particular a crucial role in developing the so-called tier 2 and tier 3 indicators[4].

This arrangement on ownership of the indicators raises some doubts about the quality assurance of the available national data for the monitoring, especially for the countries where a national statistical system is not properly established or sufficiently developed or where official statistics are subject to political scrutiny. It also leads to questions about what the future role of the international organisations in the quality assurance of the indicators will be.

The focus in this paper is how to set up the governance framework for quality controlling the SDG indicators, including to ensure institutional and contextual quality[5], in particular the independence of the statistical authorities from political influence in regions and countries with less developed or no quality frameworks. An important question in discussing this governance is which role can/should international organisations play in monitoring/validating data quality of individual countries in each statistical domain.

---

[2] See also footnote 8

[3] Proposed and launched at the 46th UNSC, March 2015.

[4]   The IAEG-SDGs has developed a three-tier system, as follows: 1) indicators where methodology exists and data are already available; 2) indicators where methodology exists but no data are available (or not sufficient data); 3) indicators for which methodology still needs to be developed and no data are available. (see also paragraph 4)

[5] See annex 2.

2. The traditional role of international organisations in the global statistical system

The global statistical system has several actors. These are at the first place the National Statistical Institutes (NSI's) representing the Member Countries of the UN in the United Nations Statistics Commission (UNSC); the UN with its headquarters in New York includes firstly the UN Statistics Division (UNSD) as the apex of the global statistical system and the secretariat for the UNSC and secondly the specialised thematic UN agencies like FAO, ILO, UNDP, UNESCO, UNIDO[6], etc. that cover specific thematic fields also in statistics. Most of these specialised UN agencies, when having a statistical department or division, are also observers to the UNSC. The UN has a regional structure with offices for 5 regions [7] , each with a statistical department. These vary substantially in size, but in principle cover work in all domains of statistics. The International Monetary Fund (IMF) and World Bank (WB), the so-called Bretton Woods institutions, close to the UN but in principle independent, also have a strong statistical department. Supranational organisations based for example on Economic cooperation between countries (European Union, Gulf Countries) and sub regional organisations (groups of countries, gathered because of some specific reason or cooperation, COMESA, ASEAN, SADC, ECOWAS) and organisations like OECD also maintain an important statistical function. Finally international development banks have a statistics arm and there is a manifold of semi or nongovernmental organisations that are also part of the global statistical system as they can prove to have a recognised department for statistics[8]. Most

---

[6] For the list of the specialized UN Agencies please see:
https://en.wikipedia.org/wiki/List_of_specialized_agencies_of_the_United_Nations

[7] The 5 UN Regions are the African Group, with 54 member states; the Asia-Pacific Group, with 53 member states; the Eastern European Group, with 23 member states; the Latin American and Caribbean Group (GRULAC), with 33 member states; the Western European and Others Group (WEOG), with 28 member states, plus 1 member state as observer.

[8] The members of the CCSA comprise international and supra-national organisations whose mandate includes the provision of international official statistics in the context of the Principles Governing International Statistical Activities, and with a permanent embedded statistical service in their organisation and regular contacts with countries..

of these organisations are also members of the Coordination Committee for Statistical Activities [9] (CCSA).

The mandates of the regional, sub regional and supranational organisations are normally limited to the production and dissemination of harmonised information for their specific region or group of countries and often covering several domains of statistics. These, like the European Union, are often based on a legal base that guarantees a fit-for-purpose (agreed) quality of statistics. However, in the context of the SDGs it is expected that especially the specialised agencies will be given the role of custodian for certain indicators [10]. The mandates of these specialised agencies and working groups (or city groups and similar structures) contain the development of standards, methodologies and guidelines but also mention almost always explicitly the role of these organisations to collect data and to publish the harmonised results. There does not seem to be a rule in the mandates of these organisations that before publishing the statistical information needs to be validated or agreed on by the individual countries[11]. The strongest wordings used in this context in the mandates analysed is 'coordination' or the supporting of the MS in compiling the information.

Several of the global SDG indicators are already collected by international agencies. The current flow of many of them is that either the international agency collects information itself in the field (e.g. from ministries), or collects the information from data bases kept by the NSI or other national authorities that are part of the official statistical system Important quality benchmarks for the international agencies is of course the international comparability for which they maintain high level expertise via specialised staff. This role also includes

---

[9] For the members of the CCSA please see: http://unstats.un.org/unsd/accsub-public/members.htm

[10] A data custodian is a UN-designated agency or institution tasked with setting data collection criteria, definitions and guidelines. They are also in charge of monitoring and reporting on SDG progress. Custodians were designated for a few MDG goals and targets, but not universally or consistently.

[11] See for example; http://www.fao.org/statistics/en/ or http://www.ilo.org/stat/lang--en/index.htm or http://www.uis.unesco.org/AboutUIS/Pages/default.aspx

correcting or estimating data. The agencies only being observers in the UNSC to serve the countries, however, do in this case get a very important task that does not really seem to be reflected in the formal positioning in the global statistical system [12].

The new flow resulting from the UNSC, IAEG-SDGs and ECOSOC conclusions seems to lead to a situation where countries might receive the information as collected by the international agencies for review and might change them or decide to collect the data itself[13].

3. Ownership of SDG indicators

In the preparation of the selection of the indicators for the SDGs the UN member states were given a strong position. It was decided at the ECOSOC meeting in September 2015 that UN member states should have ownership of the indicators. According to the operationalisation of these decisions by the UNSC the international organisations received a role as observer and advisor in this process in the IAEG-SDGs[14] This caused unease with the international agencies, not only because of the perceived lack of recognition of the specific experience of the agencies on especially the requirements the international comparability and the methodological competences, but also because of the impression that many countries will not be able to produce the data on a sufficiently high level of quality.

As described earlier this means in practice that reporting on the indicators will be done by countries, under the assumption that they will use the internationally agreed methodology and

---

[12] See Everaers (Whitworth, J. and Santos M.J. 2009 Co-ordination in the Global Statistical System: a possible way forward…http://unstats.un.org/unsd/accsub/2009docs-14th/SA-2009-6-Add1-GSS-Eurostat.pdf

[13] In this context it is worth recalling the discussion in the UNSC on the Human Development Index. In 2014 a few countries did not feel comfortable with the outcomes of the UNDP exercise on the HDI and complained in the UNSC on UNDP using modelling and other methods to calculate the indexes. UNSC concluded that UNDP should consult the countries on the country scores on the HDI before publishing it. This discussion can be considered as a lining up to the current broader discussion on the role of international agencies and the ownership of statistical information by countries.

[14] The IAEG-SDGs met three times, in New York, Bangkok and finally Mexico. In between the meetings there was an intensive process of consultations. The agencies/observers were also several times invited to advice via these consultations. However, the decisions are made by the 28 country representatives that are member of the IAEG-SDGs.

standards. Indeed, UNSD proposes that the UN thematic agencies collect data for their indicators. For the global reporting the countries are afraid of reporting burden to too many different agencies and in general would favour a single data entry point.

As described in paragraph 2, this approach of having the reporting on the indicators directly from the member states is rather a fundamental change compared to how until recently in general international comparable statistics were compiled.

Agencies however, will still have another important task for the development of the indicators. The Member States via the ECOSOC have stated ''Member states also gave great importance of adequate data for the follow up and review of progress made in implementing the goals and targets of the 2030 agenda and agreed to intensify efforts to strengthen statistical capacities and to enhance capacity building support for developing countries, particularly African countries, least developed countries, landlocked developing countries, small island developing States and middle-income countries''.

4. The 'readiness' of the selected SDG indicators for global comparisons

The UNSC agreed on an initial list of 241 indicators[15] for the 17 goals and 169 targets. The methodological development of the proposed indicators is uneven and the availability of basic data for the indicators vary greatly. On the overall quality of the resulting individual indicators (per country etc.) not much is known, however one can assume that the more developed indicators have been used and interpreted longer and consequently might be more balanced.

There are of course very well established, accepted and fully described indicators, available for all or some regions. For other indicators only a vague idea exists on a potential measurement, underlying classifications etc. Further experimental work is needed and the

---

[15] Of which there are 11 indicators that appear for different targets. This leads in total to 230 indicators.

development of categories and classifications still in its early beginnings. In its meeting [16]the IAEG-SDGs provisionally classified the indicators in three tiers according to their state of development. Tier 1 contains the indicators that are already regularly produced by countries, many already belonging to official statistics, as well as several which do not belong to official statistics (e.g. many means-of-implementation indicators). Tier 2 are those indicators where the indicator conceptually is clear, there is an existing methodology and standards available but data are not regularly produced by countries. Tiers 3 are those indicators for which there is no established methodology and standard yet. Together with the decision on the indicators the UNSC in March 2016 also agreed that further work needs to be done in developing the methodology for the tier 3 indicators. The state of methodological development, availability of basic data and quality assurance for the indicators is a first dimension to distinguish in describing the readiness for providing the indicators. The leadership in this methodological development will be a task of the UN agencies that are the 'custodians' of the respective indicators. In table 1 the current classification to these three tiers is illustrated as well as the estimated order of availability of these indicators in Eurostats' database.

Table 1: **Tier classification by UNSD and data availability on Eurostat's database**

Tier classification	full list	out of scope	in scope total	Eurobase dataset total		identical	similar
Tier 1	98	7	**91**	38	42%	12	26
Tier 2	50	5	**45**	16	36%	6	10
Tier 3	78	18	**60**	11	18%	2	9
unrated	15	3	**12**	1	8%		1
Total of indicators	**241**	**33**	**208**	**66**	**32%**	**20**	**46**

Out of scope: Global indicator is out of scope for official statistics ("Number of countries which …" or similar wording)

Eurobase dataset: A dataset identical or similar to the global indicator was identified in Eurostat's database; disregarding disaggregation requirements.

---

[16] Mexico, March 2016

A second dimension to distinguish readiness is based on the geographical availability: large disparities exist between different regions of the world and even between countries in a same region as regards data quality and implementation but even more on the availability of quality assurance frameworks, considering not only the mathematical and methodological development but even more the institutional quality. Developed statistical systems like the UNECE and ESCAP countries are more advanced. Less developed countries for example in Africa are lagging behind, the situation in Central and South America is mixed. In some regions or groups of countries there is an entity in place that can quality stamp a part of the indicators (Eurostat for 32 countries, OECD for 34)

A third dimension to distinguish the readiness is on the thematic dimension: statistics in some domains are of better quality and have more robust quality assurance than in other domains. This firstly depends on the organisations of the thematic UN agencies and their power. Virtuous examples are ILO and FAO. Such strong and established agencies are capable to quality stamp the indicators in their areas of expertise (e.g. one goal).

Finally an important fourth dimension in distinguishing the indicators is on the availability of methods to audit their quality. This may be the case for many of the indicators that come from official statistics and for a few indicators not produced by official statistics. According to the UNSD, the compiling entity – custodian - behind the large majority of the proposed indicators is one or several international organisations: UN (UNSD or DESA) and UN-family (FAO, ILO, WHO, UNIDO, UNICEF, etc.), OECD, World Bank or IMF. The exact meaning of "compiling entity" still needs to be clarified, but seems to point to the organisation where the methodology is developed/maintained. However, many other indicators are not produced by organisations that have subscribed to the Fundamental Principles of Official Statistics (FOPS), one might even think that many organisations are not even aware at all about such quality requirements: there is no system in place at all to guarantee their comparability let alone a methodology for the harmonised calculation.

5. The quality dimension

From the above categorisations of the readiness of the indicators[17] it is clear that this will influence their quality. The conceptual quality of the indicators is supposed to be covered by their acceptance and the proposed methodology. But independent from the mathematical, methodological and conceptual quality the quality in statistics also depends on the institutional arrangements of the agency and the trustworthiness of the environment in the statistical systems for producing and disseminating the statistics in a trustful and authoritative way, supported by a committed national government.

Considering the state of the statistical systems to deliver the SDI indicators there is a strong need to increase support to strengthen national statistical capacities, which can be achieved by stronger national ownership, capacity building and partnerships. The crucial role of international and regional organisations in the development of methodologies and thus assurance of quality cannot be overestimated. The mathematical quality depends on the rather straightforward quality of the staff of the organisations involved, the data sources etc. The methodological quality is of course dependent on the existence of well established guidelines and recommendations and proposed methodologies. Quality profiles of course need to be included in the metadata. The selection and justification of the choices via the very inclusive process of worldwide consultations of the indicators by the IAEG-SDGs in principle should guarantee the conceptual quality. As a very serious issue remains the statistical quality assurance capacity of the organisations and agencies, the institutional quality and the facilitation of the production of high quality statistics by the national governments. The implementation and compliance of the countries statistical system to the Fundamental Principles of Official Statistics is crucial.

---

[17] The initiative for the 'Transformative agenda for official statistics' and the setting up of the High Level Group for capacity building try to answer on this necessity to increase capacities to produce the SDG indicators. See http://unstats.un.org/unsd/statcom/47th-session/documents/2016-4-Transformative-agenda-for-official-statistics-E.pdf

As mentioned earlier, those indicators already part of official statistics, with a role for the custodian agencies to collect and process, will have an acceptable level of quality. However, the final delivery of the data from the national level to the global system contains a risk of conflict between the agencies' quality assessment and the quality as perceived by the countries.

A first publication of a report on monitoring the indicators is foreseen already in 2016. The UN agencies responsible for certain domains as well as international working groups active – the custodians - in that specific domain, are – as few no real data are foreseen to be already collected in 2016 – expected to draft a kind of state of the art report on the indicators in their domain and use indicators they have already in their data bases. Only in 2017 countries will be asked to report on the tier 1 indicators.

6. The quality requirements for the SD Indicators

The above reflections give reason to worry about the developments of the indicators and especially about the ways to guarantee their quality. Not only the intrinsic quality of the outcomes of indicators per country and goal, but beyond that the international comparability is a point raising concerns and requesting high level of attention. The CCSA as gathering of the international organisations and agencies especially responsible for that part of quality needs to play an active role in promoting and supporting the required quality levels across all SDG indicators. Guaranteeing sufficient comparability involves development and review of the data sources and consequently a better use of these data for statistics. There is currently no way to establish this and there is a clear need to enhance the work on internationally comparable procedures, adopted definitions, classifications and computation rules. International comparability based on international agreements is only possible to establish after hard international work. The SDG process may indicate needs for new international classifications but this practical work is not yet included in the road map. However, it also involves the assurance that the statistics are made under the highest standards for trust and authority in

accordance with the Fundamental Principles of Official Statistics. There is no external validation procedure in place for this aspect. What the statistical community therefore needs to discuss is the setting up of an overall governance framework and Quality Management System for quality-controlling the SDG indicators, especially in regions and countries with less developed or no quality frameworks. With this in mind, a first step could be to build a consensus that it is in the common interest to have a Quality Management System based on an independent review mechanism (content and procedures) on data quality based on a generally accepted quality assessment framework. Possible elements of such a Quality Management System:

- Peer reviews for independence
- Validation of core SDG indicators
    o Regional stamping (Eurostat, OECD, etc)
    o Topical stamping (UN thematic agencies)
    o Who stamps for those that do not come from NSI's .
- Role of agencies in validation. Options could be:
    o SDG indicators delivered via the agencies
    o SDG indicators are included in the standard data collection program of the agencies (and thus quality assured) but the 'official' submission is not via the agencies but directly from the country government (except for EU, maybe OECD). Data would be taken from the data sets of international agencies?
    o Agencies as validators of the country data
- Worldstat or an UN institution assessing statistical governance. It cannot systematically assess all indicators for all countries but can establish general guidelines and conduct sample checks for some areas.

A starting point for setting up such a mechanism would be a mapping of the quality elements along the dimensions set out in section 4 above. It is clear that the international organisations have a very important role to play in this context.

Annex 1: Commitment to quality

The relevant point on the data in the UN GA document "2030 agenda for SDG – Transforming our world" is number 74 in the section on the follow up and review. Indents g, h, and I there (*reported below) require that data countries ensure high quality data, call for enhanced capacity building and for active support of the UN system and other multilateral institutions, but does not foresee any external validation or audit mechanism.

(g) They will be rigorous and based on evidence, informed by country-led evaluations and data which is high-quality, accessible, timely, reliable and disaggregated by income, sex, age, race, ethnicity, migration status, disability and geographic location and other characteristics relevant in national contexts.

(h) They will require enhanced capacity-building support for developing countries, including the strengthening of national data systems and evaluation programmes, particularly in African countries, least developed countries, small island developing states, landlocked developing countries and middle income countries.

(i) They will benefit from the active support of the United Nations system and other multilateral institutions.

Annex 2. Quality in official statistics

Quality in official statistics is multi-dimensional It covers the dimension of basic mathematical and methodological issues, the dimension of (scientific and societal) of the justified choice of the concepts for describing phenomena, the institutional dimension, the environment in which the statistics are produced and disseminated and last but not least the the role of official statistics and the norms and values of the society in which they are produced, disseminated and used in decision making, monitoring and evaluating. Simplified these elements can be described as levels of increasing quality of official statistics *(see figure 1)*. Each level requesting a specific assessment by a different stakeholder. Highest quality official statistics have naturally to score high on all these elements.

Level 1: Mathematical quality: this relates to the correct choice and application of certain measures and using (descriptive and inductive) statistics to value with numerical values the phenomena. Based on the measurement level of the available information a researcher has to make choices between available statistical (in a narrow sense) techniques. Professional statisticians are trained in this competence.

Level 2: Methodological quality: this relates to the use of the correct (justified) methods to collect and analyse the data and includes issues like the definition of the research population, the entities, and the use of data collection techniques; in short the combination of type of research strategy and data sources. These choice and application of methodology is part of the training of researchers in social sciences and economics.

Level 3: Conceptual quality refers to the use of the correct 'theoretical model'; correct from the point of view of the societies common understanding (and the current paradigm in science), its norms and values. Such a theoretical model describes the evolution and/or the functioning, via assumed (causal) relations between the 'theoretical concepts', of a specific issue in society. For example the concept of 'poverty' (a multidimensional theoretical construct) can be described via the combined effect of the theoretical concepts income, access to services, etc.. The operationalisation of these theoretical concepts via indicators (for example household income in the example above), into measurable variables (net yearly disposable household income in Euros) is a crucial part of the research model. Different theories lead to different theoretical models, use of different concepts and different choices of variables. The acceptance in a certain societal environment of this translation of the relationship between theoretical concepts into measurable variables is often considered as an element of the quality of statistics. By using the results, science and society (policymakers) are the main assessors of this quality element.

Level 4: Institutional quality is in official European statistics reflected by the level of compliance to the principles of the European Statistics Code of Practice of the National Statistical Institute and the Other National Authorities (ONA) involved in providing information to official European statistics as disseminated by Eurostat. The institutional quality in European statistics in the European Statistical system is assessed via a system of regular peer reviews and improved/maintained via agreed improvement actions. The principles of the code of practice cover the correct application and the responsibilities of the quality on levels 1 to 3. The European Statistics Governance Advisory Board (ESGAB) plays an important role in monitoring this quality of European Statistics (see paragraph 3).

Level 5: Contextual quality describes the level of formal facilitation by the highest authority, be it the national government or prime minster, or in the case of Eurostat, the College of Commissioners, of the institutional quality: the correct implementation of the Code of Practice in producing and disseminating European Statistics. ESGAB also assesses on this quality level the state of affairs.

Quality levels

Conceptual

Methodological

Mathematical

Institutional

Contextual