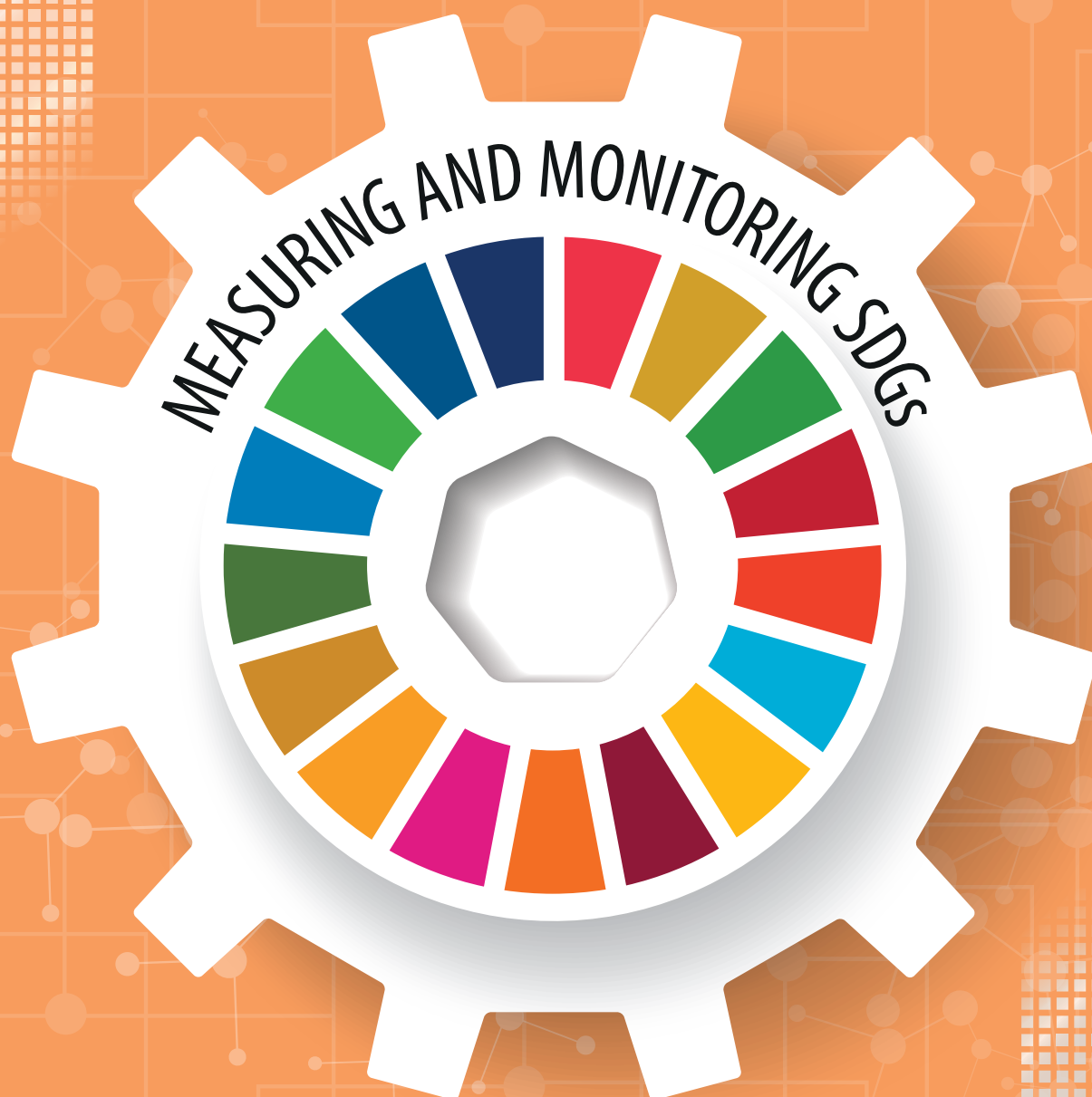


**UNECE**

# **Measuring and Monitoring progress towards the Sustainable Development Goals**



**UNITED NATIONS**



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**UNITED NATIONS**

Geneva, 2020

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ECE/INF/2020/5
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UNITED NATIONS PUBLICATION
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Sales No. E.20.II.E.36
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ISBN 978-92-1-117250-8
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eISBN 978-92-1-005186-6
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United Nations publication issued by the  
United Nations Economic Commission for Europe

# FOREWORD

The 2030 Agenda for Sustainable Development, with its 17 Sustainable Development Goals (SDGs), provides an ambitious and comprehensive framework that opens new perspectives for policymaking and international cooperation. While progress in its implementation is being made, current efforts are far below the scale needed to deliver the SDGs within the next 10 years. Ambitious action becomes even more important in the context of the response to the COVID-19 pandemic: the SDGs are vital for a recovery that leads to greener, more inclusive economies and stronger, more resilient countries.

The United Nations Economic Commission for Europe (UNECE) supports its member States in the implementation of the 2030 Agenda through concrete and results-oriented activities in the areas of its eight subprogrammes: environment, transport, statistics, economic cooperation and integration, sustainable energy, trade, timber and forestry, and housing, land management and population.

This multi-sectoral structure has allowed UNECE to address SDG implementation in an integrated manner, in line with the interlinked character of the SDGs, and to adopt a new way of working that cuts across sectoral boundaries. Four nexus areas have been defined where multiple SDGs converge:

- Sustainable use of natural resources
- Sustainable and smart cities
- Sustainable mobility and smart connectivity
- Measuring and monitoring progress towards the SDGs.

In each of these areas, a cross-sectoral, inter-divisional team of UNECE experts has undertaken an in-depth substantive analysis of current and future challenges and needs of UNECE member States and identified ways and means to address them, thus assisting member States to design and implement integrated policies in these areas. The findings of these analyses and corresponding policy recommendations are set out in a series of four flagship publications.

The publication *Measuring and Monitoring progress towards the Sustainable Development Goals* examines the complex process of measuring and monitoring SDGs involving multiple actors. High-quality statistics are vital for enabling national governments, local authorities, regional and global organizations, civil society, the private sector and the general public to measure progress towards achievement of the SDGs. Moreover, the very comprehensiveness of the 2030 Agenda creates the need for an unprecedented range of statistics at different levels, including those derived from official statistical systems and from administrative and non-traditional data sources. All countries face difficulties in measurement and monitoring and a key finding of this study is that cooperation and collaboration remain a challenge, although good progress is being made at national, regional and global levels.

Further, informed decision-making in times of crisis such as during the COVID-19 pandemic requires integrated, relevant, timely and easily accessible information, robust data and indicators, and their appropriate assessment. To achieve this and to ensure that necessary measures are taken on time to protect the most vulnerable, adequate monitoring programmes, information management systems and assessment and reporting routines must be in place.

I trust that these flagship publications will offer useful guidance to governments and other stakeholders engaged in developing integrated solutions to the multifaceted challenges of our time and in building back better from the COVID-19 pandemic.



**Olga Algayerova**

Executive Secretary

United Nations Economic Commission for Europe

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## ACKNOWLEDGEMENTS

This publication was prepared within the framework of the UNECE nexus on measuring and monitoring progress towards the SDGs. It is based upon a report produced by a consultant, Mr Robert Smith of Midsummer Analytics. The development of this publication would not have been possible without the responses provided by experts from UNECE member States to a questionnaire and contributions of staff from all UNECE divisions. The work was guided by the UNECE nexus team comprising Mr Alexander Blackburn, Mr Tony Bonnici, Mr Nicholas Bonvoisin, Ms Hana Daoudi, Ms Stela Derivolcov, Ms Agata Krause, Mr Igor Litvinyuk, Ms Gulnara Roll and Mr Ekrem Yazici, with Ms Lidia Bratanova as director. The questionnaire was administered by Ms Derivolcov. Mr Bonvoisin led and oversaw the preparation of the publication.





# ACRONYMS

CES . . . . .	Conference of European Statisticians
CES Road Map . . . . .	<i>CES Road Map on Statistics for Sustainable Development Goals</i>
EPR . . . . .	Environmental performance review
FAO . . . . .	Food and Agriculture Organization of the United Nations
FDES . . . . .	Framework for the Development of Environmental Statistics
FPOS . . . . .	Fundamental Principles of Official Statistics
GSBPM . . . . .	General Statistical Business Process Model
HLPF . . . . .	High-level Political Forum
IAEG-SDGs . . . . .	Interagency and Expert Group on Sustainable Development Goal Indicators
NGO . . . . .	Non-governmental organization
NRP . . . . .	National reporting platform
NSO . . . . .	National statistical office
NSS . . . . .	National statistical system
OECD . . . . .	Organization for Economic Cooperation and Development
PARIS21 . . . . .	Partnership in Statistics for Development in the 21 <sup>st</sup> Century
PPP . . . . .	Public-private partnership
PRTR . . . . .	Pollution release and transfer register
SDG . . . . .	Sustainable Development Goal
SDMX . . . . .	Statistical Data and Metadata eXchange (standard)
SEEA-CF . . . . .	System of Environmental-economic Accounting-Central Framework
UNDP . . . . .	United Nations Development Programme
UNECE . . . . .	United Nations Economic Commission for Europe
UNEP . . . . .	United Nations Environment Programme
UNICEF . . . . .	United Nations Children’s Fund
UNSD . . . . .	United Nations Statistics Division
VNR . . . . .	Voluntary national review
WHO . . . . .	World Health Organization







# EXECUTIVE SUMMARY

In order to better support member States in achieving the Sustainable Development Goals (SDGs), the United Nations Economic Commission for Europe (UNECE) has identified four areas where its programmes and expertise converge. These “nexus” areas are:<sup>1</sup>

- Sustainable use of natural resources
- Sustainable and smart cities for all ages
- Sustainable mobility and smart connectivity
- Measuring and monitoring progress towards the SDGs.

This publication has been prepared to support UNECE efforts within the fourth nexus area, measuring and monitoring progress towards the SDGs. It is based on a consultant’s report that was largely complete before the COVID-19 pandemic was declared, and its effects were felt across the region, but the pandemic has forcefully demonstrated the importance of well-informed decision-making in times of crisis.

Assessing progress towards the 2030 Agenda for Sustainable Development (2030 Agenda) and the associated SDGs is a complex, multi-faceted process involving actors at the subnational, national, regional and global levels. The activities related to compiling and disseminating the SDG indicators are commonly referred to as “measurement and monitoring” and are largely the domain of official statisticians and other data providers. All countries face challenges in measurement and monitoring, whether in terms of finding suitable methodologies, the quality of underlying data, the management and sharing of information or the ability to report indicators with the desired degree of disaggregation. The focus of this publication is on the challenges faced by countries in the UNECE region and on the responses taken by UNECE and other organizations at the national, regional and global levels to these challenges. More specifically, challenges and responses were reviewed in relation to:

- Defining the roles of National Statistical Offices (NSOs) in SDG measurement and monitoring and supporting NSOs in executing those roles
- Coordinating the activities of data producers and users involved in measurement and monitoring and ensuring collaboration among them
- Modernizing statistical processes and systems to better support measurement and monitoring
- Strengthening basic statistics and accounts for use in compiling SDG indicators
- Dissemination and communication of SDG statistics and indicators
- Securing adequate human and financial resources.

The publication draws mainly upon on-line materials available from the United Nations and other global institutions and from UNECE and other regional institutions. To supplement this – and to gain direct insight into the challenges that member States face – an electronic questionnaire was used to gather information from member States regarding their challenges and the responses they have made to them. Of 56 UNECE member States, 51 replied to the questionnaire. The most common challenges reported by these 51 countries were:

- Difficulties coordinating and collaborating among stakeholders
- Inadequacy of human and financial resources
- Gaps in required data
- Difficulties in disaggregating statistics to reveal trends in specific sub-populations (for example, the poor, urban versus rural populations and persons with disabilities).

1 A description of the four nexus areas is available at: <https://www.unece.org/high-impact-areas/general-introduction.html>.

## GENERAL FINDINGS

The first finding from the general review of challenges and responses is simply how impressive are the breadth, depth and quality of the actions that global, regional and national organizations have taken to support measurement and monitoring. Unlike in the case of the Millennium Development Goals, when measurement and monitoring were an afterthought and progress reporting was not as robust as it should have been, the national, regional and global statistical communities have all risen admirably to the challenge of measurement and monitoring the SDGs. This bodes well not just for the realization of the 2030 Agenda's ambitions, but also for the future of cooperation and mutual support between the policy agencies of governments and their statistical counterparts.

NSOs and other members of national statistical systems (NSSs) in the UNECE region are encouraged to familiarize themselves with the impressive range of supports for SDG measurement and monitoring available to them from UNECE and other regional and global organizations. This publication covers the most important of these, but it should only be a starting point. Far more initiatives, programmes and policies exist than could be covered here. Thus, NSOs and other members of NSSs are encouraged to explore on their own the supports that are available from regional and global organizations. At the same time, UNECE should encourage other regional and global organizations with initiatives, programmes or policies in place that, whether explicitly or indirectly, support SDG measurement and monitoring in the region to ensure their efforts are well-known among member States and the members of their NSSs.

When it comes to defining and supporting the role of NSOs, the global community is clear that NSOs must be at the centre of SDG measurement and monitoring. This is acknowledged in the text of the 2030 Agenda itself. While such strong support for the role of NSOs is appropriate and welcome, it must also be tempered with a dose of realism regarding what NSOs can and cannot achieve. NSOs are struggling in many ways (some predictable and others less so) to fulfil the role they have been given. UNECE should deepen its engagement with NSOs to understand more fully the challenges they face in fulfilling their central roles in SDG measurement and monitoring, while also acknowledging that municipalities, academia and many others play active roles in supporting NSOs in measurement and monitoring. Particular attention should be paid to their challenges in coordinating and collaborating with data users and other stakeholders involved as it is likely that challenges in this regard are preventing NSOs from fully meeting expectations.

Though modernization of statistical process was noted as a challenge for SDG measurement and monitoring by about half of member States, it did not rank among the challenges that countries were most concerned about. It is unclear whether this is because countries mostly know how to overcome the modernization challenges they face or because they do not see modernization as a top priority in terms of SDG measurement and monitoring. Certainly, regional and global organizations have clearly spelled out the benefits – indeed, the imperative – of modernization in the context of measurement and monitoring. Yet when asked in the survey to provide examples of specific modernization initiatives taken, relatively few initiatives were reported. In particular, no significant mention was made of using a non-traditional source of data to meet the challenge of SDG measurement and monitoring.

UNECE should work with other regional and global organizations to assist NSOs in moving beyond the promise of modernization – in particular, the promise of using complementary data sources (for example, big data) and interoperability with other administrative information systems (for example, open data, e-government and geospatial, health and environmental data) – to the realization of its benefits. Countries with well-funded, large statistical systems are likely to be ahead of those with smaller, more resource-constrained systems. UNECE should engage with member States that have achieved positive outcomes through modernization to transfer the lessons learned to those with less capacity to modernize all on their own. These efforts to support modernization should extend to sectoral, subnational and local members of NSSs to assist them in fulfilling their roles (for example, production of regionally disaggregated data) in measuring and monitoring the SDGs.

In the case of strengthening basic statistics and accounts, UNECE and other regional and global communities have a great deal to offer, particularly in the areas of environmental statistics that is relatively under-developed and key to SDG measurement and monitoring. Yet, despite the cross-cutting nature of the 2030 Agenda itself, much of the work done in the statistical domain within regional and global organizations remains siloed within traditional organizational structures. This is, arguably, not the best example to set for countries faced with the challenge of integrated measurement and monitoring. Regional and global organizations should, therefore, demonstrate leadership in the domain of SDG measurement and monitoring by working across traditional structures to support member States.

UNECE could, for example, undertake actions to promote, and support countries in implementing, recommendations in the *UNECE Road Map on Statistics for Sustainable Development Goals* and related outcomes of the work of the Interagency and Expert Group on Sustainable Development Goal Indicators on data disaggregation for the SDG indicators. Such work would demonstrate to member States the value of coordination and collaboration in addressing the complexities of measurement and monitoring.

Regarding dissemination and communication, there is a need to improve the collaboration between data producers and data users, to improve the usability of data in policy processes and the dissemination of data to the public. There is also a compelling case for a high degree of standardization across member States, regional and global organizations when speaking about data transmission. It would serve no one well if 56 different national reporting solutions were created to support SDG measurement and monitoring when a single standard, suitably adapted to meet country-specific needs where required, could suffice. UNECE should promote the development and implementation of SDG dissemination and communication platforms and the use of standardized solutions for data and metadata transfer and exchange, following internationally agreed standards (for example, the existing Statistical Data and Metadata eXchange (SDMX) standard). This work could also build upon the initiatives already taken by the United States of America and the United Kingdom of Great Britain and Northern Ireland in this regard.

Finally, human and financial resources are, as seems always to be the case, a concern for many countries. Despite the Dubai Declaration's clear call to mobilize funding for SDG measurement and monitoring, no global funding mechanism is yet in place. Regrettably, the pandemic of 2020 may well make it more difficult for the foreseeable future to create such a mechanism. Nonetheless, countries should, to the fullest extent possible, act upon the Dubai Declaration's call for increased funding for measurement and monitoring. In addition, low-cost means should be found to improve the skills and knowledge of member State experts required for measurement and monitoring. In cooperation with other regional and global institutions, UNECE should maximize use of on-line learning, as this is adaptable, does not require travel and, if done well, highly effective. More traditional forms of capacity building – workshops, expert group meetings and conferences – should also be pursued. UNECE is well regarded for its capacity to organize and deliver these kinds of events and this capacity should be leveraged and strengthened to the extent possible. At the same time, UNECE should actively explore new ways to deliver this capacity building that are more flexible and fully exploit the potential of modern electronic communications.

## FINDINGS FROM THE MEMBER STATE SURVEY

Beyond the general findings above, additional insights into what is working well – and what is not – at the member State level were gleaned from the survey. Regarding coordination and collaboration – one of the most commonly reported challenges – the results show clearly that naming some agency, whether it is the NSO (as recommended by the Conference of European Statisticians)<sup>2</sup> or another agency, a national lead on coordination and collaboration is essential. Coordination and collaboration do not happen on their own; they require dedicated effort and a clear legal mandate. It does appear, however, to be easier to succeed in coordination and collaboration in cases where the NSO has full responsibility – or takes the lead – for SDG measurement and monitoring.<sup>3</sup>

Given this, countries should ensure that an appropriate agency (ideally the NSO as recommended by the Conference of European Statisticians, though another relevant agency could take on this role if the NSO cannot do so alone) is assigned to the lead role for ensuring coordination and collaboration in SDG measurement and monitoring. Countries should expect that this agency's role will be easier in cases where the NSO has full responsibility for measurement and monitoring. In other cases, coordination and collaboration will be more difficult (due to the larger number of stakeholders involved) and, therefore, the effort required to succeed in it should be expected to be greater.

2 See the Conference of European Statisticians' *Road Map on Statistics for Sustainable Development Goals*, UNECE, 2017 (ECE/CES/STAT/2017/2), available at: <https://www.unece.org/stats/publications/roadmapsdg.html>.

3 Full responsibility means that the NSO is responsible for all SDG measurement and monitoring in the country, using both its own data and data it obtains from other agencies.

In terms of financial and human resource challenges, the survey showed a clear link between these and (i) the need for increased technical and managerial capacity and (ii) challenges related to modernizing statistical processes. This is to be expected, since both technical and managerial capacity, on the one hand, and modernization, on the other, require significant application of financial and human resources. At the same time, adequate human and financial resources do not appear to mean that the need for increased technical and managerial capacity or modernization disappear.

The survey results reveal that 12 out of 39 countries where NSO has the full responsibility for SDG measurement and monitoring mentioned data gap as a concern. The reason is that at least some NSOs are unable to reach beyond their own databases to obtain the data they require from other organizations. This is consistent with the finding that cooperation and collaboration is the greatest challenge to measurement and monitoring in the UNECE region. Countries in which overall data availability for SDG measurement and monitoring is known to be low, and in which mechanisms for assuring inter-agency coordination and collaboration are weak, should devote additional efforts to coordination and collaboration to ensure the NSO can access all available data for measurement and monitoring.

Finally, a similar number of countries in which the NSO has full responsibility for SDG measurement and monitoring reported challenges in disaggregating statistics to reveal trends in specific sub-populations. This is because no NSO can possibly compile all the data required for measurement and monitoring. Countries in which the NSO has full responsibility for measurement and monitoring must ensure the NSO has access to all data required to disaggregate statistics to reveal trends in specific sub-populations. This may require that additional effort be devoted to improving NSO access to administrative and non-traditional data sources and harmonizing definitions and promoting interoperability across different nationwide information systems within e-government and open data frameworks.









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# CHAPTER 1

## INTRODUCTION AND METHODOLOGY

Assessing progress towards achievement of the 2030 Agenda for Sustainable Development (2030 Agenda) and the associated Sustainable Development Goals (SDGs) is a complex, multi-faceted process involving actors at the subnational, national, regional and global levels. Though complex, the process can be conceived of in broad terms as comprising two sets of activities, one objective and the other subjective. The objective activities – which are the focus of this publication – include all those associated with the compilation and dissemination of the 231 individual indicators<sup>4</sup> that have been chosen by the international community to measure the SDGs. The subjective activities include all those associated with the use of these indicators along with other information for the purpose of reviewing progress toward achieving the SDGs and explaining where progress is and is not being made. The objective activities related to compiling and disseminating the SDG indicators are commonly referred to as “measurement and monitoring” and the subjective activities related to reviewing progress are commonly referred to as “reporting”. Measurement and monitoring are largely the domain of official statisticians and other data providers, while reporting is largely the domain of departments or agencies with policy responsibilities.

At the global level, the most prominent example of SDG measurement and monitoring is the SDG indicator database<sup>5</sup> maintained by the United Nations Statistics Division (UNSD) and the most prominent example of SDG reporting is the annual progress report of the United Nations Secretary-General on the Sustainable Development Goals.<sup>6</sup> The latter draws heavily upon the former to support its review of global progress. Examples of measurement, monitoring and reporting can also be found at the regional, national and even subnational levels. At the national level, many countries have put in place SDG indicator databases similar to the global database. The national equivalent to the Secretary-General’s progress report is the voluntary national review (VNR),<sup>7</sup> a formal review of national progress toward the SDGs compiled by national governments and submitted to the United Nations. At the local level, municipalities make efforts to produce voluntary local reviews.

Regionally, each of the five United Nations regional commissions is active in supporting its member States in assessing progress toward the SDGs. In its region, the United Nations Economic Commission for Europe (UNECE) is supporting countries to address sustainable development challenges through an integrated, multisectoral approach that leverages UNECE norms, standards and conventions. The challenges facing countries in the region cut across most SDGs. Environmental pressures, the need for economic development, growing urbanization and other issues demand more effective policies and broader societal dialogue, neither of which can take place in the absence of robust statistics.

In order to better support member States in achieving the SDGs, UNECE has identified four areas where its programmes and expertise converge. These “nexus” areas are:<sup>8</sup>

- Sustainable use of natural resources
- Sustainable and smart cities for all ages
- Sustainable mobility and smart connectivity
- Measuring and monitoring progress towards the SDGs.

4 After the 2020 comprehensive review there are 231 indicators, see: <https://unstats.un.org/sdgs/indicators/indicators-list/>. Originally there were 232 indicators.

5 Available at: <https://unstats.un.org/sdgs/indicators/database/>.

6 See, for example, the 2020 report (E/2020/57), available at: <https://undocs.org/en/E/2020/57>.

7 A database of VNRs is available at <https://sustainabledevelopment.un.org/vnrs/>.

8 A description of the four nexus areas is available at <https://www.unece.org/high-impact-areas/general-introduction.html>.

This publication has been prepared to support UNECE efforts within the fourth nexus area, measuring and monitoring progress towards the SDGs. All countries face challenges in measurement and monitoring, whether in terms of finding suitable methodologies, the quality of underlying data, the management and sharing of information or the ability to report indicators with the desired degree of disaggregation. The focus of the publication is on the challenges faced by countries in the UNECE region with respect to:

- Defining the roles of National Statistical Offices (NSOs) in SDG measurement and monitoring and supporting NSOs in executing those roles
- Coordinating the activities of the myriad organizations involved in measurement and monitoring and ensuring collaboration among them
- Modernizing statistical processes and systems to better support measurement and monitoring
- Strengthening basic statistics and accounts for use in compiling SDG indicators
- Dissemination and communication of SDG statistics and indicators
- Securing adequate human and financial resources.

In each of the areas, the publication identifies the nature of the challenges faced (chapter 2) and the responses offered to the challenges (chapter 3). The publication emphasizes the responses offered by regional organizations (including, but not limited to, UNECE) and by member State central governments. The global and subnational responses cannot be overlooked, however, since measurement and monitoring extend beyond the activities of regional organizations and national governments. Thus, the publication touches on all of these. It concludes (chapter 4) with recommendations regarding the ways in which UNECE and other regional organizations can better support member States in overcoming their measurement and monitoring challenges.

## 1.1 METHODOLOGY

The publication draws upon material from a variety of sources. On-line materials available from the United Nations and other global institutions, UNECE and other regional institutions and member States were a primary source.

Of course, real insight into the challenges faced by individual member States can only be gleaned by asking them directly about their challenges and what they are doing to address them. For this reason, an electronic questionnaire was developed and sent to member States as part of the research for this publication. The questionnaire was designed to gather general information about the challenges faced in countries and to allow them to provide specific details about these challenges and their responses to them where such details were relevant. Of the 56 member States in the region, 51 replied to the questionnaire.







## CHAPTER 2

# OVERVIEW OF THE CHALLENGES IN MEASURING AND MONITORING THE SUSTAINABLE DEVELOPMENT GOALS

As noted in the United Nations Secretary-General's 2019 report on progress towards the Sustainable Development Goals,<sup>9</sup> high-quality statistics are vital for enabling governments, regional and global organizations, civil society, the private sector and the general public to measure progress towards achievement of the SDGs. Moreover, the broad ambition of the 2030 Agenda creates the need for an unprecedented range of statistics at the subnational, national, regional and global levels, including those derived from official statistical systems and from administrative and non-traditional data sources. The 231 indicators selected to measure the SDGs are varied, complex and, in many cases, methodologically underdeveloped. NSOs and the broader national statistical systems (NSS) they lead in many countries (see Box 1) face an urgent need to adapt and develop in order to rise to the challenge of SDG measurement and monitoring. Though there is a wide range of statistical capabilities across countries, with some countries facing greater challenges than others, all countries face at least some challenges in SDG measurement and monitoring. As a result, accurate and timely statistics about some critical aspects of development remain missing, leaving certain groups (such as migrants) less than fully visible to decision makers and many development challenges poorly understood. To address these shortcomings and improve the statistical basis for measurement and monitoring, new data sources and collection and treatment technologies must be explored. This cannot be done by NSOs alone, so vertical and horizontal partnerships with other members of NSSs, municipalities, civil society, the private sector and academia are needed.

### Box 1: National statistical systems

In many countries, there exists a formal national statistical system comprising all the departments and agencies of the central government with responsibilities for producing official statistics on behalf of the government. Where such systems exist, the national statistical office – as the agency mandated with production of the largest share of official statistics – is usually the lead agency of the NSS. In this role, the NSO:

- Defines standard concepts and methods for official statistics (for example, standard classifications of industries or methods for adjusting prices for inflation)
- Sets guidelines for the quality of official statistics in terms of, among others, timeliness, accuracy and accessibility (see below)
- Works to ensure coordination and collaboration among members of the NSS to, for example, avoid duplication of effort in data collection.<sup>10</sup>

9 Available at: <https://unstats.un.org/sdgs/report/2019/The-Sustainable-Development-Goals-Report-2019.pdf>.

10 As discussed below in section 3.1.1, NSOs adhere to the Fundamental Principles of Official Statistics in carrying out this role.

**Box 1: National statistical systems (continued)**

In some instances – for example, in the United Kingdom of Great Britain and Northern Ireland – statisticians working outside of the NSO but within the NSS are formally part of a national statistical “service” (a professional body of statisticians with its own code of conduct and a separate employer from other civil servants). This ensures that all official statisticians, whether working within or outside of the NSO, adhere to the same set of professional guidelines, thus providing users of official statistics with near certainty that all official statistics are free from bias. In such cases, the statistical units that comprise the NSS are clearly defined and a high degree of coordination among them can be expected.

In other instances, the structure and functioning of the NSS is looser, with the NSO working to ensure coordination and collaboration among statisticians in other departments or agencies but those agencies having greater control over the statistics they produce.

Given their importance in informing decision-making, official statistics must be of the highest quality possible. For this reason, the global statistical community has agreed upon a quality assurance framework for official statistics,<sup>11</sup> with an entire chapter devoted to quality assurance of data and statistics on the SDG indicators. The dimensions of statistical quality are widely agreed to be:<sup>12</sup>

- **Relevance:** the degree to which statistics meet the needs of users and stakeholders, which requires ensuring that statistical programmes remain aligned with information needs as they evolve and retaining the flexibility to respond to them
- **Accuracy and reliability:** the degree to which statistics correctly describe the phenomena they are intended to measure, which is usually quantified by the evaluation of different sources of error (coverage, non-response, measurement and processing)
- **Timeliness and punctuality:** the length of time between the end of the reference period (or the reference date) to which data relate and the date they are made publicly available (timeliness) and to the difference between planned and actual availability (punctuality)
- **Accessibility and clarity:** the ease with which users are able to identify, obtain and use statistical products and services (accessibility) and the degree to which metadata and other information are provided so that users are able to locate and select products or services that correspond to their needs (clarity)
- **Coherence and comparability:** the extent to which statistics are logically consistent in terms of definition and measurement and thus can be reliably combined in different ways and for various uses (coherence) and the extent to which differences over time or among sources can be attributed to changes in the true values of the statistics and not to changes in definition or measurement (comparability).

Adherence to these quality dimensions is one of things that sets official statistics apart from many of sources of data, not all of which are collected with a clear quality framework in mind. Other features of official statistics that make them well suited for use in SDG measurement and monitoring include their multi-purpose nature (collected once but used many times), their objectivity (NSOs and NSSs are generally located outside of policy departments or, when inside such departments, protected from undue influence by statistical legislation guaranteeing their independence) and their public trust.

11 The United Nations *National Quality Assurance Frameworks Manual for Official Statistics* (ST/ESA/STAT/SER.M/100) is available at: <https://unstats.un.org/unsd/methodology/dataquality/references/1902216-UNNQAFManual-WEB.pdf>.

12 See, for example, the quality assurance frameworks of Statistics Canada (third edition of 2017, available at: <https://www150.statcan.gc.ca/n1/en/pub/12-586-x/12-586-x2017001-eng.pdf?st=VhuzlO0R>); the European Union (*European statistics Code of Practice* — revised edition 2017, available at: <https://ec.europa.eu/eurostat/web/products-catalogues/-/KS-02-18-142>); the International Monetary Fund (available at: <https://dsbb.imf.org/dqrs/DQAF>); and OECD (*Recommendation of the OECD Council on Good Statistical Practice*, 2015, available at: <http://www.oecd.org/statistics/good-practice-toolkit/Brochure-Good-Stat-Practices.pdf>).



A landmark report outlining the challenges in SDG measurement and monitoring was published in 2014. Titled *A World that Counts*,<sup>13</sup> it was prepared by an Independent Expert Advisory Group commissioned by the United Nations Secretary-General to consider the implications for measurement and monitoring of the on-going “data revolution” driven by new information-generating technologies. The world today is one in which data are bigger, faster and more detailed than ever before. The Group identified two main challenges for measurement and monitoring. First, there are simply not enough high-quality statistics available. Second, many statistics are either not used or not usable.

To address these challenges, the International Expert Advisory Group provided the Secretary-General with recommendations in four areas:

- **Principles and standards for sustainable development statistics:** agree on and promote specific principles regarding data quality, management, governance and rights (see Box 2)<sup>14</sup> and legal, technical, geospatial and other standards
- **Technology, innovation and analysis:** leverage new data sources, develop systems for global data sharing and identify and fill research gaps
- **Capacity and resources:** develop new funding streams for SDG statistics and a proposal for developing statistical capacity
- **Governance and leadership:** create a global partnership for sustainable development statistics, including a World Forum on Sustainable Development Data.

### Box 2: The Independent Expert Advisory Group's principles for statistics for sustainable development

The Independent Expert Advisory Group set out nine principles to guide the improvement of statistics for sustainable development.

- Focus on **quality and integrity** of statistics through establishment of clear standards and a robust quality assurance framework.
- Ensure that all members of society are visible in statistics through appropriate **disaggregation** of statistics across, among others, geography, wealth, disability, age, ethnicity, migrant status, marital status, HIV status, sexual orientation and gender identity.
- Provide statistics on a **timely basis**.
- Ensure **transparency and openness** in statistics, making all official statistics open by default except where genuine security or privacy concerns exist. Open means both technologically and legally accessible.
- Ensure the **usability and curation** of statistics by creating user-friendly interfaces.
- Protect **privacy** through application of norms governing the use of statistics and enabling citizens to better understand and control their own information.
- Enable sufficient **resources and capacity** so that all countries may have an effective NSS capable of producing high-quality statistics in line with global standards and expectations.
- Support improved **governance and independence** in NSSs by strengthening NSOs and ensuring they are autonomous and independent of sectoral ministries and political influence.
- Enforce individual **rights** with regard to statistics, including the right to be counted, the right to an identity, the right to privacy and the right to ownership of personal data.

13 *A World that Counts: Mobilising the Data Revolution for Sustainable Development*, Independent Expert Advisory Group Secretariat, 2014, available at: <https://www.undatarevolution.org/wp-content/uploads/2014/11/A-World-That-Counts.pdf>.

14 These principles are based on and coherent with the United Nations *Fundamental Principles of Statistics* and *Principles Governing International Statistical Activities* (see section 3.1.1).

Following publication of *A World that Counts*, the global community acted on several of the Group's recommendations. The specific actions taken are spelled out more fully in chapter 3. One of them deserves mention in this overview chapter, though, since it laid out a clear agenda for addressing the needs of NSOs and NSSs in meeting the challenges of SDG measurement and monitoring. This is the Global Action Plan for Sustainable Development Data<sup>15</sup> agreed in Cape Town in 2017 at the first meeting of the High-level Group for Partnership, Coordination and Capacity-Building for Statistics for the 2030 Agenda for Sustainable Development (see section 3.1.1). The Cape Town Global Action Plan identified the six challenges mentioned in chapter 1 as the focus of this publication. They are repeated below for convenience:

- Defining the roles of NSOs in SDG measurement and monitoring and supporting NSOs in executing their roles
- Coordinating the activities of the myriad organizations involved in measurement and monitoring and ensuring collaboration among them
- Modernizing statistical processes and systems to better support measurement and monitoring
- Strengthening basic statistics and accounts for use in compiling SDG indicators
- Dissemination and communication of SDG statistics and indicators
- Securing adequate human and financial resources.<sup>16</sup>

Each of these challenges is discussed further in general terms in the remainder of this chapter. The global, regional and national responses to them are the subject of chapter 3.

## 2.1 DEFINING AND SUPPORTING THE ROLE OF NATIONAL STATISTICAL OFFICES

The 2030 Agenda clearly recognizes that global measurement and monitoring “will be primarily based on national official data sources.”<sup>17</sup> As the primary producers of official statistics in every country, most of the statistics required for measurement and monitoring therefore come from NSOs. Even in cases where the statistics come from other members of the NSS, the NSO – as lead agency in the NSS – has an indirect role to play in ensuring the success of measurement and monitoring. A challenge for every country, then, is ensuring that the role played by the NSO in SDG measurement and monitoring is both clearly defined and broadly understood by all national stakeholders. In broad terms, three possibilities exist for this role:

- **Full responsibility:** The NSO may be responsible – or take the lead – for all SDG measurement and monitoring activities, meaning it compiles all SDG indicators for the country, disseminates these indicators to the public and reports them officially on behalf of the government to regional and global bodies. In compiling the indicators, the NSO may draw upon its own statistics, other official statistics produced by the NSS and non-official statistics produced by other stakeholders as necessary.
- **Partial responsibility:** The NSO may be responsible – or take the lead – for some but not all SDG measurement and monitoring activities. It may compile and disseminate only those SDG indicators that rely exclusively on data from the NSO itself, leaving compilation and dissemination of other indicators to the departments and agencies that produce the relevant data.

15 *Cape Town Global Action Plan for Sustainable Development Data*, High-level Group for Partnership, Coordination and Capacity-Building for Statistics for the 2030 Agenda for Sustainable Development, available at: <https://unstats.un.org/sdgs/hlg/cape-town-global-action-plan/>.

16 It is worth noting that these challenges correlate well with the seven dimensions of statistical capabilities set out in the UNECE *Statistical Capacity Development Strategy*, available at: [https://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/2018/CES\\_10\\_rev1\\_Statistical\\_capacity\\_development\\_strategy\\_rev.pdf](https://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/2018/CES_10_rev1_Statistical_capacity_development_strategy_rev.pdf).

17 See paragraph 74(a) of *Transforming Our World: The 2030 Agenda for Sustainable Development* (A/RES/70/1), available at: <https://undocs.org/en/a/res/70/1>.



- **No particular responsibility:** It may be the case that the NSO has no specific role in SDG measurement and monitoring, with other departments and agencies assuming responsibility for compilation and dissemination of all SDG indicators. In such a case, the NSO may play the limited role of simply providing its statistics as required to the organizations responsible for indicator compilation.<sup>18</sup>

Which role the NSO plays is, of course, a matter for each country to decide. Whatever the role, though, it should be clearly defined and communicated to all stakeholders involved in measurement and monitoring and should derive, ideally, from a legal mandate. The legal mandate may arise implicitly from the general mandate given to the NSO in the national statistical law to produce official statistics. Or it may arise explicitly from a mandate for measurement and monitoring given to the NSO in a national law or policy related to sustainable development in general or to the SDGs in particular. In the absence of a clearly defined and legally mandated role for the NSO, confusion is likely to reign in the national SDG reporting system given the central role the NSO plays in providing official statistics in every country.

No matter the role assumed by the NSO in a country, the NSO is likely to require enhanced capabilities to deliver it. As noted already, the statistical demands created by the SDGs are unprecedented in breadth and depth and many NSOs (and NSSs) are simply not equipped to provide statistics of that scope with the necessary quality in terms of timeliness, accessibility and accuracy. Moreover, NSOs and NSSs are not keeping up with the private sector in all countries in the race to offer new statistics. Companies are increasingly developing the capacity to collect, analyse and respond to real-time data as quickly as it is generated. Rising to the challenge of measurement and monitoring therefore requires NSOs and other organizations and individuals within the NSS to build, maintain and strengthen their abilities to collect, produce, analyse and disseminate high-quality and reliable statistics. Among many others, areas in which increased capabilities are required include:

- Collection of data in non-traditional domains, such as vulnerability of populations to climate change
- Treatment of data from non-traditional sources, including so-called “big data”
- Methods for filling gaps in data series
- Management processes
- Dissemination and communications.

## 2.2 COORDINATION AND COLLABORATION

As noted in *A World that Counts*,<sup>19</sup> NSOs cannot take on the challenge of measurement and monitoring alone. New institutions, actors, ideas and partnerships are needed. NSOs, as the traditional suppliers of official statistics, remain central to the measurement and monitoring effort, as already noted. To play their role effectively, however, they need to adopt new data sources and production processes more widely and quickly than in the past. Using more administrative data from other government departments,<sup>20</sup> incorporating geospatial data and speeding up production so that the “data cycle” matches the “decision cycle” is key to success. This requires, among other things, vastly improved coordination and collaboration<sup>21</sup> both within the NSS and between the NSS and organizations outside government involved in collecting and using data. The list of stakeholders that must coordinate and collaborate includes:

18 For further discussion of possible roles NSOs can play, see the UNECE report *National Mechanisms for Providing Data On Global SDG Indicators*, available at: [https://statswiki.unece.org/display/SFSDG/Task+Force+on+National+Reporting+Platforms?preview=/128451803/170164504/National%20mechanisms%20for%20providing%20data%20on%20SDGs\\_note%20from%20UNCES%20SG%20SDG%20TF...pdf](https://statswiki.unece.org/display/SFSDG/Task+Force+on+National+Reporting+Platforms?preview=/128451803/170164504/National%20mechanisms%20for%20providing%20data%20on%20SDGs_note%20from%20UNCES%20SG%20SDG%20TF...pdf).

19 See page 9.

20 See section 2.4 for a definition of administrative data.

21 *Coordination* involves arranging the activities of different stakeholders such that they are mutually supportive; for example, dividing tasks among stakeholders to avoid duplication of effort and increase efficiency. *Collaboration* involves joint effort on specific tasks through the sharing of human and/or financial resources; for example, joint production of report or an indicator. Coordination does not necessarily require collaboration, but collaboration cannot occur in the absence of coordination.

- NSOs
- Other members of the NSS
- Other national government departments and agencies involved in the production of data
- National government departments and agencies that are users (rather than producers) of official statistics
- Subnational government departments and agencies, especially municipalities
- Civil society organizations
- Academic and research organizations
- Businesses
- Households.

All the above stakeholders have a role to play in SDG measurement and monitoring, either as providers of basic data or statistics, as compilers or disseminators of indicators or as users of data, statistics or indicators. Coordination of their activities is needed to ensure that measurement and monitoring is efficient, effective and transparent.

In countries where a formal and effective NSS exists, a natural choice is to mandate the NSS to undertake measurement and monitoring with the NSO as the lead agency. There should exist within the NSS ready-made coordination mechanisms – for example, a national statistical steering committee – that can simply be applied to the compilation and dissemination of SDG indicators. There may also exist within the NSS collaborative activities – for example, joint working groups on statistical methodologies – that can be similarly applied to measurement and monitoring. Coordination and collaboration within NSSs are likely to be greatest in countries where the NSS is highly formalized. Even in instances where the NSS is more loosely organized there should exist a degree of coordination and collaboration to build upon in SDG measurement and monitoring. Where no formal NSS exists, it may be the case that coordination and collaboration mechanisms are less evident (though this is not necessarily the case, as the existence of an NSS is certainly not a necessary condition for coordination and collaboration).

Whichever department or agency (or group) is chosen to lead SDG measurement and monitoring, it is likely that coordination and collaboration need to be improved if measurement and monitoring is to be as efficient, effective and transparent as possible. This is so for several reasons. First, coordination and collaboration are complex undertakings and rarely perfect, even in instances where governments take them seriously and practice them widely. Second, the SDGs cover a remarkably broad set of issues that touch upon the mandates and activities of an equally broad set of organizations. It is likely that many of these organizations have not worked together previously (for example, social development and environmental agencies) and, therefore, that no relevant coordination and collaboration mechanisms apply. Third, few governments are likely to collect all the data and statistics required for measurement and monitoring (again, due to the breadth of the SDGs), meaning that non-governmental sources may have to be drawn upon for some needs. Existing intra-governmental coordination and collaboration mechanisms do not cover such sources.

For all these reasons, coordination and collaboration mechanisms present a challenge for SDG measurement and monitoring.

### 2.3 MODERNIZING STATISTICAL PROCESSES AND SYSTEMS

The need for “modernization” of statistical processes and systems is increasingly recognized. The challenges of measurement and monitoring of SDGs at the national and local levels only amplify this need. The SDGs are not just calling for more statistics than ever before, they are calling for them in under-developed domains (like environmental statistics) and on topics that fall outside the traditional scope of official statistics (like material footprints). If the need for statistical modernization was clear before the advent of the SDGs, today it can only be understood as an imperative. No country can afford to rely any longer on the status quo.

Modernization can be broadly defined as: (i) ensuring the use of standard statistical production processes and tools between national, regional and global statistical systems; (ii) enabling international comparison and exchange of statistics; and (iii) integrating non-traditional data sources into official statistics to deliver them in a more timely and

cost-efficient way. Though modernization efforts have been underway in some countries for at least a decade, official statistics today continue to rest largely on methods and workflows that have existed for many decades. These include, among others:

- The use of large sample surveys or censuses of target populations to collect basic data
- Dissemination of statistics via periodic news releases, standardized reports and data tables
- A focus on a limited set of statistics defined by economic, demographic and social policy frameworks
- Use of data processing systems that are often outdated and poorly documented
- Human resource management that values depth of subject-matter expertise over flexibility of skill sets
- A preference for achieving statistical quality overall
- Standardized concepts and methods that change slowly
- A risk-adverse approach to data dissemination that privileges individuals' rights to privacy over collective rights to data access.

While these approaches have served the official statistics community well over many years, the information deluge created by the revolution in data creation, collection and sharing technologies threatens the status quo (by allowing many non-traditional actors to enter the world of data provision) and provides a strong impetus for NSSs to increase their efficiency through modernization.

## 2.4 STRENGTHENING BASIC OFFICIAL STATISTICS

The breadth of the SDGs means that high-quality statistics are required across a wide range of topics. As noted already, not all of them fall within the traditional areas of strength of NSOs. In particular, a number of the SDGs address environmental issues, which are not dealt with at all by many NSOs and, at best, are dealt with as a side-line to the much larger efforts devoted to measuring economic, social and demographic statistics.<sup>22</sup> Strengthening environmental statistics is, then, of particular importance to the success of measurement and monitoring. Environmental sustainability is crucial to the overall sustainability of development and basic official statistics must be improved to reflect this. This is an area where improved coordination and collaboration across the NSS is likely to pay dividends, since environmental data and statistics are often collected by environmental departments and agencies. States Parties to the UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention)<sup>23</sup> have to ensure that the collection of environmental statistics, their publishing and dissemination are done in accordance with the Convention; other member States are encouraged to follow this approach. The Aarhus Convention and its Protocol on Pollutant Release and Transfer Registers set out standards and principles for the management, including collection and update, and public accessibility of environmental information, including pollutant release (air, water and land) and transfer (waste) registers, state of the environment reports and other assessments that are directly relevant for certain SDG targets and indicators.

Household statistics is another area where the SDGs create new and challenging demands. Many of the indicators touch upon the conditions of households and do so in a way that requires a level of disaggregation that goes beyond what is common today in official statistics. SDG Indicator 10.2.1, for example, calls for a measure of the proportion of persons with disabilities living below 50 per cent of median income. Producing such an indicator requires either a survey of income that includes questions about disabilities (which most do not today) or a complex linkage between income and disability survey microdata.

22 As an illustration of the effort devoted to environmental statistics, Statistics Canada – which has one of the strongest environmental statistics programmes of any NSO – devotes only a few dozen of its several-thousand-person-strong workforce to the topic.

23 Full information on the Convention is available at: <https://www.unece.org/env/pp/introduction.html>.

A challenge with respect to household statistics in many countries is that the surveys used for their collection are sometimes conducted by global organizations rather than by NSOs. For example, the Multiple Indicator Cluster Survey<sup>24</sup> conducted by the United Nations Children's Fund (UNICEF) is an important source of data on women and children in many countries in the UNECE region and the World Health Organization (WHO)/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene<sup>25</sup> is an important source of data on water and hygiene. While these surveys are valuable sources of important data, reliance on national sources is always preferred, as they are more likely to take unique national characteristics into account, be trusted by national users and build national statistical capacity.

Official statistics rely not just on data collected through surveys, but also on the use of administrative data collected by governments for non-statistical purposes; for example, income tax filings used as a source of basic income statistics. Use of administrative data has a number of advantages: there is no increase in response burden or collection cost, since the data are collected in any case; data are put to multiple uses, increasing overall governmental efficiency; the data can be very detailed (a tax filing is made by every employed person, for example); and the data can be counted on to remain available so long as the programme that generates them remains. Increased use of administrative data is, then, an attractive option as a means of meeting the challenges of SDG measurement and monitoring. Increasing its use means overcoming some well-known obstacles, including:

- Reluctance on the part of the agencies that collect the data to share them
- Concerns regarding the privacy and rights of the individuals who provided the data<sup>26</sup>
- Building new systems to process the data
- Adapting the data for statistical purposes (for example, by reclassifying them to match standard classifications).

Meeting the challenges of SDG measurement and monitoring may require governments even to look beyond their own data and make use of data collected by extra-governmental organizations. The unprecedented scope of the SDGs means that even nations with highly developed and well-funded statistical systems find it challenging to identify data sources within their own governments. For example, Indicator 8.3.1 on the proportion of informal employment outside of agriculture may not be collected in government labour market statistics but may be monitored by non-governmental organizations (NGOs) focused on alleviating poverty or on justice for workers. When looking for data from outside government, countries can look to national or subnational organizations operating within their borders or to regional and global organizations. Using data from non-official sources comes with its own challenges, however, since data quality may be inadequate for the purposes of official statistics and the data source may not be reliable in the future. Nonetheless, some argue<sup>27</sup> the time has come not just to use non-official data as an input into compilation of official statistics, but to consider them as direct stand-ins for unavailable official statistics in cases where their quality can be ascertained and certified by NSOs. Given the pace of progress, the cost of developing the SDG indicators and the weight of expectations, ways must be found to collaboratively harness the intellectual power of those outside NSSs.

24 Information on the Survey is available at: <https://mics.unicef.org/>.

25 Information on the Joint Monitoring Programme is available at: <https://washdata.org/>.

26 Individuals who provide data to governments have a right to know how and to what end their data will be used. Integration of administrative data into the production of statistics could be considered a misuse if done without an explicit and transparent legal basis and without the consent, whether explicit or implicit, of the individuals to whom the data belong.

27 See, for example, the proposal by the United Nations Conference on Trade and Development to use unofficial statistics for SDG indicator compilation (ECE/CES/2019/34), available at: <https://undocs.org/en/ECE/CES/2019/34>; the Dubai Declaration on the mobilization of funding for measurement and monitoring, available at: <https://unstats.un.org/sdgs/hlg/dubai-declaration/>; and the brief by the United Nations Economic and Social Commission for Asia and the Pacific on SDG implementation, available at: <https://www.unescap.org/resources/stats-brief-august-2018-issue-no-16-sdg-implementation-what-do-when-it-s-not-clear-what-do>.

## 2.5 DISSEMINATION AND COMMUNICATION

Given the highly public and political nature of the SDGs, effective indicator dissemination and communication<sup>28</sup> are an essential element in successful measurement and monitoring. Failure to provide users with ready access to the indicators and clear documentation of their strengths and weaknesses risks bringing accusations of bias on the part of NSOs and/or NSSs. Moreover, regional and global organizations have created their own dissemination and communication platforms and approaches with which national governments have to align to the greatest extent possible.<sup>29</sup> This constrains the range of options available to governments and sets expectations in terms of the quality and nature of dissemination and communication.

Transparency in dissemination and communications is essential for all official statistics and this is certainly true for SDG indicators. The indicators are scrutinized at many levels by many stakeholders. The goal of the NSO or NSS must be to provide users with access to the indicators and enough information about them to eliminate any reasonable possibility that a user would suspect them to be biased in any way. In this way, the debate about the indicators can rest where it should – on the success or failure of policy efforts to achieve the SDGs – and not on the credibility of the indicators themselves.

Achieving transparency requires that indicator dissemination platforms – be they sophisticated, searchable on-line platforms such as that created by the United Nations or simpler approaches based on downloadable spreadsheets – be readily accessible by any interested user.<sup>30</sup> In today's world, this requires some form of basic electronic dissemination (spreadsheets, for example) at a minimum. In countries where Internet access is not yet universal, electronic dissemination should be accompanied by paper-based reports that can be distributed by regular mail service.

To ensure timely and efficient dissemination, countries ideally rely upon a standard data exchange format. This enables the automation of data exchange between countries and regional or global organizations while simplifying and improving data validation and dissemination. In practice, this implies adoption of the existing Statistical Data and Metadata eXchange (SDMX) format,<sup>31</sup> which is an International Organization for Standardization (ISO) standard<sup>32</sup> endorsed by global bodies, including the United Nations Statistical Commission. It is used successfully for data exchange and dissemination in areas such as macro-economic statistics and international trade and was used to a limited extent in the context of the measurement and monitoring for the Millennium Development Goals. Its use in the context of SDG measurement and monitoring remains limited. Although standard formats for SDG indicators<sup>33</sup> were released in 2019 and revised in 2020, and the IAEG-SDGs has established an SDMX working group,<sup>34</sup> the necessary SDMX infrastructure for SDG indicators became available only recently and most countries and global organizations have yet to adopt SDMX for SDG data transmission.

Another issue with respect to dissemination is the need to provide users with access to the micro-data underlying the indicators. As such micro-data are normally confidential, providing access can only be done under carefully controlled circumstances that ensure respect for respondents' privacy.

28 In the context of measurement and monitoring, *dissemination* is the process of making SDG indicators available to users in electronic, paper, audio or video format. Provision of basic meta-data describing the concepts, methods and data sources underlying the indicators is considered part of dissemination. *Communication* is the process of providing users with additional information they require in order to properly understand and use the indicators; it is active and may involve seeking feedback from users to take into account their needs, for example.

29 For example, the Aarhus Convention and its Protocol on Pollutant Release and Transfer Registers enhance the accountability, transparency and responsiveness of governments in environmental matters. They grant the public rights, and imposes obligations on Parties and their authorities, regarding access to environmental information.

30 The Aarhus Clearinghouse portal provides a wealth of information and a collection of good practice examples regarding effective access to environmental information that can be used for SDGs; see: <https://aarhusclearinghouse.unece.org/>.

31 Information on SDMX may be found at: <https://sdmx.org/>.

32 Information on the standard, ISO 17369:2013, is available at: <https://www.iso.org/standard/52500.html>.

33 Available at: <https://unstats.un.org/sdgs/iaeg-sdgs/sdmx-working-group/>.

34 Available at: <https://unstats.un.org/sdgs/iaeg-sdgs/sdmx-working-group/>.

Transparency is also essential in communications related to the indicators. Beyond having access to the indicators and related metadata, users require additional information to help them understand and use the indicators. For example, information is needed on the processes used in compiling the indicators (which organizations were involved and what roles each played); the reasons why some indicators cannot be compiled according to the approved global methodology (or not compiled at all); and what is being done to improve national capacity to compile the indicators. Such information must be communicated in a clear and accessible manner, ideally in the form of a report disseminated along with the indicators themselves. Any communications in the context of measurement and monitoring must be clearly separated from other communications related to the SDGs – for example, from VNRs – and must be strictly objective and factual in nature. A measurement and monitoring report could be published, for example, as a companion document to a VNR and users wishing to know more about how the indicators had been compiled and what improvements might be possible in the future could be pointed to it.

## 2.6 FINANCIAL AND HUMAN RESOURCES

Financial and human resource needs must be considered in any activity and SDG measurement and monitoring is no exception. As with the other issues discussed above, the breadth of the SDGs presents challenges in this area as well.

From a human resource perspective, challenges present themselves in terms of both identifying the necessary resources and managing them. Resources are needed across several domains: subject-matter experts (for example, health and environmental statisticians); experts in statistical methods; information technology experts; dissemination and communication experts; and project management specialists. Managing these resources, once identified, presents unique challenges. Even within NSOs, it is not common for subject-matter experts from different domains to work together on measurement and monitoring, as dissemination and communication of statistics remains largely subject-matter specific. This is all the more true across different departments and agencies. Bringing people together to work on measurement and monitoring, then, likely means creating a functioning team from individuals who are not accustomed to working with one another. In practice, success in such circumstances normally requires a mandate from and active engagement of senior managers, as only they have the authority to create inter-organizational teams.

While objective measurement and monitoring activities must be kept separate from subjective reporting activities, it is important nonetheless that there be interaction between the two groups. Those working on measurement and monitoring need to be certain that their activities in support of dissemination and communication of the indicators support and complement what their colleagues are doing in terms of reporting. It could be disastrous, for example, if the measurement and monitoring team was launching a new on-line dissemination platform at the same time as the reporting team was publishing the latest VNR if that led to high demand for access to the new platform and caused it to crash.

In terms of financial resources, measurement and monitoring in relation to the 2030 Agenda presents the obvious challenge of being a new, potentially expensive and additional activity for governments to fund over and above their current statistical activities. In a world in which statistical budgets are more often shrinking than expanding, it is not clear that this measurement and monitoring always receives the funding required. This is particularly the case for indicators that require significant disaggregation of statistics. The basic data required to permit such disaggregation may not exist in many cases and collecting it is, as with all statistical activities, an expensive undertaking.

Another challenge that the breadth of the SDGs presents for human and financial resources is the potential need to share resources across departments and agencies. Since the indicators cross subject-matter boundaries, it is unlikely that any one organization steps up to pay the cost of measurement and monitoring on its own. Given this, measurement and monitoring activities must be funded either by sharing existing organizational budgets or allocating new funding from central government agencies. Either approach presents challenges in terms of agreeing on the share of budget to be allocated to and, where new funding is not available, drawn from existing budgets. All of this is made more complicated by the potential for extra-governmental organizations (for example, NGOs or universities) to be involved in measurement and monitoring.

One possibility for meeting financing needs for measurement and monitoring is to look beyond governments to private donors as sources of funds. This requires the creation of innovative financing mechanisms and can raise questions of the impartiality of measurement and monitoring activities. To avoid this, any such mechanism must be consistent with the principle that decisions related to the collection, processing, dissemination and communication of official statistics must be made entirely based on professional considerations by the NSO and/or NSS.<sup>35</sup>

35 See Principle 2 of the United Nations *Fundamental Principles of Official Statistics* (A/RES/68/261), available at: <https://undocs.org/en/a/res/68/261>.







# CHAPTER 3

## MEETING THE MEASURING AND MONITORING CHALLENGE

The measures taken in response to the challenges of SDG measurement and monitoring are outlined below for global organizations (section 3.1), regional organizations (section 3.2) and national governments and organizations (section 3.3).

### 3.1 GLOBAL RESPONSES

#### 3.1.1 Overview of global initiatives relevant to measurement and monitoring

Two major bodies have been created at the global level to support SDG measurement and monitoring. The more significant of these is the High-level Group for Partnership, Coordination and Capacity-Building for statistics for the 2030 Agenda for Sustainable Development,<sup>36</sup> established to:

- Create a global action plan for SDG measurement and monitoring
- Provide strategic leadership for SDG measurement and monitoring
- Foster statistical capacity-building
- Ensure consistency between national and global measurement and monitoring
- Support efforts to modernize statistical systems
- Promote interaction between statistical systems and other stakeholders within and outside government.

The primary activity of the High-Level Group is organizing the United Nations World Data Forum,<sup>37</sup> a biennial gathering of the world's statistical community – including information technologists, geospatial information managers and data scientists – to discuss means of overcoming the challenges of SDG measurement and monitoring. Two such forums have been held to date, one in Cape Town in 2017 and the second in Dubai, United Arab Emirates, in 2018. The 2017 forum was notable for resulting in the Cape Town Global Action Plan for Sustainable Development Data<sup>38</sup> and leading to the associated Dubai Declaration on the mobilization of funding for measurement and monitoring,<sup>39</sup> signed at the 2018 forum. The next physical meeting of the forum is planned for October 2021, with a virtual event in October 2020.

The other major global body focused on issues related to measurement and monitoring is the Interagency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs)<sup>40</sup> established by the United Nations Statistical Commission in 2015 with the primary objective of developing and implementing the global indicator framework for the 2030 Agenda.<sup>41</sup> In addition to its mandate to develop the SDG indicators, IAEG-SDGs is charged with:

- Providing technical support for the implementation of the indicators, ensuring the use of agreed definitions and sharing experiences
- Reviewing statistical capacity-building needs and activities
- Supporting the development of an SDG data-user forum, tools for data analysis and an SDG dashboard.

36 For information on the High-level Group, see: <https://unstats.un.org/sdgs/hlg/>.

37 For information on the Forum, see: <https://unstats.un.org/unsd/undataforum/index.html>.

38 See: <https://unstats.un.org/sdgs/hlg/Cape-Town-Global-Action-Plan/>.

39 Available at: <https://unstats.un.org/sdgs/hlg/dubai-declaration/>.

40 For information on IAEG-SDGs, see: <https://unstats.un.org/sdgs/iaeg-sdgs/>.

41 The indicators are described in detail at: <https://unstats.un.org/sdgs/indicators/indicators-list/>, including references to the global indicator framework as amended.

The group comprises representatives from NSOs, United Nations regional commissions and regional and international agencies. It works in an open manner, inviting individual experts, as appropriate, from civil society, academia and the private sector to contribute their expertise. The group is supported by three working groups:

- A working group on **geospatial information**,<sup>42</sup> focused on how geospatial, Earth observation and other new data sources can be used in measurement and monitoring
- A working group on **integrated analysis**,<sup>43</sup> focused on identifying interlinkages between the economic, social and environmental dimensions of the SDGs and promoting integrated analysis of these dimensions by NSOs and NSSs
- A working group on **data flows**,<sup>44</sup> focused on developing and promoting a statistical data and metadata exchange standard for sharing SDG statistics between countries and regional and global organizations.

The work of IAEG-SDGs also included compilation of all categories and dimensions of data disaggregation currently in place and planned by custodian agencies and the policy priorities concerning the most vulnerable population groups (including, for instance, people with disability, migrants, refugees and older people).<sup>45</sup>

Beyond these two major bodies, the global community has responded to the measurement and monitoring challenge in a variety of other ways. For example:

- UNSD maintains a **global database and metadata repository for the SDG indicators**<sup>46</sup> that provide the ultimate “home” for the indicators and related metadata for each United Nations Member State. Countries can look to these as best practices in designing their own indicator and metadata dissemination platforms.
- UNSD has also created the **SDG data lab**,<sup>47</sup> an online platform to facilitate the exchange of data and metadata by countries and custodian agencies with UNSD that will gradually replace all other forms of data submission from custodian agencies and countries to the global SDG indicator data base.
- IAEG-SDGs has identified various global and regional organizations as **custodian agencies** for the SDG indicators.<sup>48</sup> Custodians are mandated to ensure the comparability of country data by ensuring use of international standards and strengthening national statistical capacities.
- **UN-Women supports monitoring of SDG 5** on gender equality, supporting the production of gender-based statistics and sex-disaggregated data across the SDG indicator framework.<sup>49</sup>
- **The Office of the High Commissioner for Human Rights advocates for a human rights-based approach** to the production of SDG data, providing recommendations on data disaggregation to support the “leave no one behind” principle of the 2030 Agenda.<sup>50</sup>
- **The Global Partnership for Sustainable Development Data** is a platform that brings together governments, the private sector, civil society and international development agencies to address the need for multi-stakeholder collaboration and mobilization of resources for measurement and monitoring.<sup>51</sup>

In addition to the above initiatives, which are just a few among the dozens that could be mentioned as providing direct support to SDG measurement and monitoring, the global community promotes a wide variety of activities, policies and guidelines that can indirectly support measurement and monitoring. One of these is the United Nations

42 Terms of reference are available at: <https://unstats.un.org/sdgs/files/Working-Group-ToR--GeoSpatial.pdf>.

43 Terms of reference are available at: <https://unstats.un.org/sdgs/files/Working-Group-ToR--Interlinkages.pdf>.

44 Information on the working group is available at: <https://unstats.un.org/sdgs/iaeg-sdgs/sdmx-working-group/>.

45 See: <https://unstats.un.org/sdgs/iaeg-sdgs/disaggregation/>.

46 Available at: <https://unstats.un.org/sdgs/indicators/database/>.

47 An introductory presentation of the SDG Data Lab is available at: [https://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.32/2020/mtg1/W\\_4\\_2\\_ENG\\_Webinar\\_Datalab.AG.CP.pdf](https://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.32/2020/mtg1/W_4_2_ENG_Webinar_Datalab.AG.CP.pdf).

48 Information on custodian agencies is available at: <https://unstats.un.org/sdgs/dataContacts/>.

49 Further information is available at: <https://www.unwomen.org/en/news/in-focus/women-and-the-sdgs/sdg-5-gender-equality>.

50 Further information is available at: <https://www.ohchr.org/EN/Issues/SDGS/Pages/The2030Agenda.aspx>.

51 The Global Partnership is described at: <http://www.data4sdgs.org/>.

*Fundamental Principles of Official Statistics* (FPOS)<sup>52</sup> adopted by the United Nations General Assembly in 2014, reflecting the fundamental importance of official statistics for global development.<sup>53</sup> Through FPOS, governments and their national statistical agencies pledge to compile official statistics that meet the test of practical utility and make them available on an impartial basis to honour all citizens' entitlement to public information. To support application of FPOS, the United Nations also promotes a set of *Principles Governing International Statistical Activities*.<sup>54</sup>

Turning the ambition of the SDGs into reality requires robust data to capture progress and evidence to inform decision-making. The Organization for Economic Cooperation and Development (OECD) is helping countries track progress in areas such as trust, health inequalities, green growth, income and consumption inequality and job quality.<sup>55</sup> It supports countries in developing and using environmental and green growth indicators and in achieving environment-economy integration over time. An innovative approach it has taken in this work is found in its report on *Measuring Distance to the SDG Targets 2019*,<sup>56</sup> which aims to assist OECD member countries with their national implementation, measurement and data prioritization for the 2030 Agenda. The report uses a unique methodology to assess the distance countries need to travel to meet the SDG targets. It draws on the IAEG-SDGs global indicator list and uses publicly available data from OECD and United Nations SDG databases. Based on the data available in early 2019, the report covered 105 of the 169 targets. On average, OECD countries are closest to reaching targets on goals relating to Energy, Cities and Climate and furthest from Gender Equality, Reducing Inequality, Food and Institutions. However, the analysis also highlights important data gaps, which if addressed could change these results significantly: goals on Oceans, Sustainable Production, Cities and Reducing Inequality have 40 per cent or fewer targets covered. Health, Infrastructure and Education have the best data coverage, with 90 per cent or more targets captured by at least one indicator. In the spirit of leaving no one behind, OECD has extended the approach to assess the distance to the SDG targets for children and young people.<sup>57</sup> An analysis of distance to the SDG targets by gender was added in 2020.<sup>58</sup>

Having provided this brief – and incomplete – overview of global initiatives relative to SDG measurement and monitoring, it is possible to discuss the roles global organizations play more specifically in terms of the challenges that are the focus of this publication.

### 3.1.2 Defining and supporting the role of National Statistical Offices – Global responses

The global community recognizes that NSOs and the NSSs they lead have the overall ownership and primary responsibility for SDG measurement and monitoring at the national level. In both the 2015 resolution adopting the 2030 Agenda<sup>59</sup> and the subsequent 2017 resolution adopting the global SDG indicator framework,<sup>60</sup> the United Nations General Assembly recognized that measurement and monitoring would be primarily based on data produced by NSSs. The United Nations' acknowledgement that measurement and monitoring would be a process largely driven by NSOs is perhaps clearest though in the decisions to establish the two global groups comprising heads of NSOs mentioned above – IAEG-SDGs and the High-level Group for Partnership, Coordination and Capacity-Building – and mandate them to define the SDG indicator framework and ensure NSOs receive the support they require to implement it.

52 United Nations *Fundamental Principles of Official Statistics* (A/RES/68/261), available at: <https://undocs.org/en/a/res/68/261>.

53 FPOS were first adopted by the UNECE Conference of European Statisticians in 1992 and then by the United Nations Statistical Commission in 1994.

54 Available at: [https://unstats.un.org/unsd/methods/statorg/Principles\\_stat\\_activities/principles\\_stat\\_activities.asp](https://unstats.un.org/unsd/methods/statorg/Principles_stat_activities/principles_stat_activities.asp).

55 Further information is available at: <http://www.oecd.org/dac/sustainable-development-goals.htm>.

56 Available at: <http://www.oecd.org/publications/measuring-distance-to-the-sdg-targets-2019-a8caf3fa-en.htm>.

57 See OECD Statistics Working Papers 2018/05, available at: [https://www.oecd-ilibrary.org/economics/child-well-being-and-the-sustainable-development-goals\\_5e53b12f-en](https://www.oecd-ilibrary.org/economics/child-well-being-and-the-sustainable-development-goals_5e53b12f-en).

58 How far are OECD countries from achieving SDG targets for women and girls?, OECD Statistics Working Papers 2020/02, available at: [https://www.oecd-ilibrary.org/economics/how-far-are-oecd-countries-from-achieving-sdg-targets-for-women-and-girls\\_17a25070-en](https://www.oecd-ilibrary.org/economics/how-far-are-oecd-countries-from-achieving-sdg-targets-for-women-and-girls_17a25070-en).

59 See General Assembly resolution A/RES/70/1, paragraph 74(a), available at: <https://undocs.org/en/a/res/70/1>.

60 See General Assembly resolution A/RES/71/313, paragraph 7, available at: <https://undocs.org/en/a/res/71/313>.

The United Nations also recognizes that NSOs face challenges in playing an effective role in measurement and monitoring. Statistics on specific subjects, such as health, education, energy, transport and the environment, may be compiled by line ministries or specialized agencies. In some cases, these organizations are part of the formal NSS and in others not. Often, they serve as the point-of-contact for regional and global organizations in need of statistics rather than the NSO, making it harder for the NSO to ensure the overall quality and transparency of the measurement and monitoring process. Increasingly, it may be the case that government statistics will be overlooked entirely, as private data providers become more and more active and capable in providing statistics. For these reasons, it is important for countries and regional and global organizations to recognize and support the neutrality of NSOs and their honest-broker role as key elements in effective measurement and monitoring. In this regard, the United Nations General Assembly has clearly stated that FPOS are to be respected in measurement and monitoring.<sup>61</sup>

Among their other roles, NSOs should ensure that appropriate guidelines are in place to assure the quality of statistics used for measurement and monitoring. Playing this role – difficult at the best of times – is more difficult where the NSS is very diverse or operates without effective NSO leadership. This is why the coordination role of the NSO within the NSS is so important and in need of support from regional and global organizations. To support NSOs in this important role, the United Nations has published the *National Quality Assurance Frameworks Manual for Official Statistics* with a specific chapter devoted to quality assurance in the context of the SDG indicators.<sup>62</sup> The framework touches upon quality across four dimensions of official statistics:

- **Management of the statistical system**, including coordination across and beyond the NSS and standards setting
- **Managing the institutional environment**, including assuring NSO independence, impartiality and adherence with other dimensions of FPOS
- **Management of statistical processes**, including methodologies and response burden
- **Management of statistical outputs**, including their relevance, accuracy, timeliness, accessibility and coherence.

Global organizations also recognize the need to provide capacity-building support to NSOs and NSSs. This is particularly critical for developing countries, many of which lack the capacity to produce basic statistics even in traditional economic, demographic and social domains. Their capacity deficits are even more apparent when it comes to harnessing the opportunities offered by the data revolution and producing the broad-scope, disaggregated data needed for SDG measurement and monitoring. The SDGs themselves are explicit in recognizing this deficiency. Target 17.18 refers to the need to build the statistical capacity of developing countries to produce timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other relevant characteristics.

A particularly significant element of the global community's response to the need to develop the capacity of NSOs was the creation of the Cape Town Global Action Plan on capacity-building for sustainable development data and the associated Dubai Declaration on financing (see section 3.1.1). These initiatives can be seen as direct responses to the call in the 2030 Agenda<sup>63</sup> to increase statistical capacity-building. The Cape Town Global Action Plan is intended to provide a framework for discussion, planning and implementation of statistical capacity-building necessary to achieve the scope and intent of the 2030 Agenda. The plan acknowledges that capacity-building must be designed to meet countries' expressed needs and that regional and national statistical organizations should develop complementary action plans, including focused plans to address needs related to statistics for specific sectors.

Another global response to capacity-building is the data ecosystem mapping project of the United Nations Development Programme (UNDP),<sup>64</sup> which has been applied in six countries (see Box 3 for a case study on the

61 See General Assembly resolution A/RES/71/313, paragraph 8.

62 Available at: <https://unstats.un.org/unsd/methodology/dataquality/un-nqaf-manual/>.

63 See General Assembly resolution A/RES/70/1, paragraph 57.

64 Further information, including an assessment of the pilot countries, is available at: <https://www.undp.org/content/undp/en/home/librarypage/poverty-reduction/data-ecosystems-for-sustainable-development.html>.

Republic of Moldova).<sup>65</sup> The project assessed the readiness of national data ecosystems to harness the data revolution for SDG measurement and monitoring. It focused on legal and policy frameworks; capacities; obstacles to stakeholder engagement; approaches to filling data gaps; and infrastructure needs related to the collection, dissemination and use of statistics. Key recommendations from the project included opening up NSSs to non-official stakeholders and innovative data approaches; providing incentives for government institutions to share administrative data; paying increased attention to information technologies; coordinating donors' assistance; and strengthening collaborative partnerships.

### 3.1.3 Coordination and collaboration – Global responses

At the global level, coordination and collaboration for SDG measurement and monitoring is assured primarily by the High-level Group for Partnership, Coordination and Capacity-Building and IAEG-SDGs (see section 3.1.1). In addition, the Global Partnership for Sustainable Development promotes coordination and collaboration by working with stakeholders across countries and sectors to harness the data revolution for sustainable development. It is a network of governments, private sector and civil society actors, global organizations, academic institutions, foundations, statistics agencies and others. It works to ensure that all people can trust that their data are used for their benefit and with their consent and that data are used by:

- Governments to improve policymaking and service delivery, including aligning budgets with needs
- Citizens and civil society groups to make better decisions and hold leaders accountable for their actions
- Companies to build capacity and drive entrepreneurship and innovation.

UNDP has developed a *Rapid Integrated Assessment* tool<sup>66</sup> to support countries in mainstreaming the SDGs into national and subnational planning by helping assess their readiness for SDG implementation. The tool outlines the steps to conduct rapid integrated assessment of the SDGs to determine their relevance to the country context, both at the national and subnational level, and interlinkages across targets. One of the steps addresses measurement and monitoring. The assessment is a first step in defining a roadmap for a country to implement the SDGs. The target audience for the toolkit is decision-makers at the national and subnational levels. Other experts – in particular from regional and global organizations, NGOs and civil society – may also find it useful when developing plans to implement the SDGs in support of government partners.

#### Box 3: The Republic of Moldova and the data ecosystem mapping project

The Republic of Moldova carried out a desk review, identified stakeholders and organized five workshops as part of the data ecosystem mapping project. An initial review found that 211 of the SDG indicators are relevant for the country. Data for half of these are unavailable and only partially available for another 17 percent. The review determined that the Republic of Moldova faces challenges related to:

- Inconsistent methodologies, multiple data sources and weak statistical capacity
- Disaggregation of data
- Data gaps related to environment, energy and governance
- Lack skills and high turnover
- Limited use of data visualization tools
- Over-reliance on international donor funding and insufficient public funding.

65 Bangladesh, Mongolia, Republic of Moldova, Senegal, Swaziland and Trinidad and Tobago.

66 Available at: <https://www.undp.org/content/dam/undp/library/SDGs/RIA%20Tool%20-26.12.201-Final.pdf>.

**Box 3: The Republic of Moldova and the data ecosystem mapping project (continued)**

The review recommended that the Republic of Moldova:

- Ensure a stronger coordination role for its NSO
- Establish rules for collaboration among public agencies on generation and use of data
- Establish common nomenclatures and classifications and promote their use
- Increase capacity to process large volumes of data.

In response, the Republic of Moldova proposed to:

- Establish a national committee on sustainable development with the State Chancellery as the focal point
- Ensure a central role for the NSO
- Streamline relevant policy frameworks
- Undertake a mid-term review of nationalized SDG indicators and Moldova 2020 – a National Development Strategy
- Ensure data are open for use.

Source: UNDP, *Data Ecosystems for Sustainable Development: An assessment of six pilot countries*.<sup>67</sup>

**3.1.4 Modernizing statistical processes and systems – Global responses**

United Nations Member States, in the Addis Ababa Action Agenda of the Third International Conference on Financing for Development,<sup>68</sup> noted the importance of drawing on new data sources to meet user needs: “National statistical systems have a central role in generating, disseminating and administering data. They should be supplemented with data and analysis from civil society, academia and the private sector.”<sup>69</sup> National statistical offices can play a critical role in identifying potential new sources and helping to ensure quality so these data can complement data from official sources.

UNDP has developed a *Guide to Data Innovation for Development*.<sup>70</sup> Data innovation is defined as the use of new or non-traditional data sources and methods in combination with traditional data to study difficult issues. New, or non-traditional data sources may include digital data derived from social media, web content, commercial transaction data or radio-navigation (GPS) devices. Combining data sources often provides more complete, timely and/or granular information about an issue. Data innovation can, therefore, open opportunities for more cost-effective interventions, as well as provide entirely new insights that may have been overlooked through traditional approaches.

A *System-wide Roadmap for Innovating UN Data and Statistics*<sup>71</sup> has been developed by the United Nations Secretariat with the intent of supporting the development of NSSs and providing authoritative regional and global data to support the international community in responding in a timely fashion to policy needs. The roadmap aims to strengthen the position of the United Nations as a primary provider of global data. It covers all three pillars of the United Nations (peace and security, human rights and development) as well as humanitarian assistance.

67 Available at: <https://www.undp.org/content/undp/en/home/librarypage/poverty-reduction/data-ecosystems-for-sustainable-development.html>.

68 General Assembly resolution A/RES/69/313, available at: <https://undocs.org/en/a/res/69/313>.

69 General Assembly resolution A/RES/69/313, paragraph 125.

70 Available at: [https://reliefweb.int/sites/reliefweb.int/files/resources/UNGP\\_BigDataGuide2016\\_%20Web.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/UNGP_BigDataGuide2016_%20Web.pdf).

71 System-wide Roadmap for Innovating UN Data and Statistics, Committee of Chief Statisticians of the UN System (CEB/2020/1 – Segment 2), available at: <https://unstats.un.org/unsd/unsystem/documents/CEB-Segment2-Roadmap.pdf>.



### 3.1.5 Strengthening basic statistics and accounts – Global responses

Strengthening environmental statistics was noted earlier to be of particular importance to the success of SDG measurement and monitoring (see section 2.4). Demand for environmental statistics is increasing as environmental challenges become more serious. Governments, businesses, households and other decision-makers require improved environmental statistics. Providing such statistics is challenging because they cover a wide range of issues, are multi- and inter-disciplinary in nature and come from different institutions using varied methods. Recognizing this, two major guiding frameworks have been developed to bring order to this complex and important domain. The first is the United Nations *Framework for the Development of Environment Statistics* (FDES).<sup>72</sup> FDES is a flexible, multi-purpose conceptual and statistical framework that:

- Identifies the scope and topics relevant to environmental statistics
- Contributes to the assessment of data requirements, sources, availability and gaps
- Guides the development of multipurpose data collection processes and databases
- Assists in the coordination and organization of environmental statistics.

FDES marks out the scope of environmental statistics and provides an organizing structure to guide the collection and compilation of environmental statistics at the national level. It brings together data from various relevant subject areas and sources. It is broad and holistic in nature, covering the issues and aspects of the environment that are relevant for policy analysis and decision making by applying it to cross-cutting issues such as climate change. FDES is particularly useful for countries at early stages of developing environmental statistics.

The second global framework is the United Nations framework for environmental accounting, known as the *System of Environmental-Economic Accounting 2012 – Central Framework* (SEEA-CF).<sup>73</sup> SEEA-CF is a handbook outlining the internationally agreed concepts, definitions, classifications, accounting rules and tables for producing environmental accounts. It is the result of many years of cooperative efforts by national statistical agencies and the global statistical community to standardize the approach to the integrated measurement of environmental and economic issues. SEEA-CF integrates economic and environmental data to describe the interrelationships between the economy and the environment and the stocks and changes in stocks of environmental assets. SEEA-CF follows an accounting structure similar to that of the System of National Accounts in order to facilitate the integration of environmental and economic statistics. SEEA-CF is a multipurpose system that generates a wide range of statistics, accounts and indicators with many different potential analytical applications. It is a flexible system that can be adapted to countries' priorities and policy needs while at the same time providing a common framework, concepts, terms and definitions. Both FDES and SEEA-CF are relevant to measurement and monitoring of many SDGs.<sup>74</sup>

The UN-Water Integrated Monitoring Initiative for SDG 6 seeks to support countries in compiling data to report on global progress towards SDG 6 (ensure access to water and sanitation for all) and to monitor all SDG water- and sanitation-related indicators in an integrated and holistic manner.<sup>75</sup> The initiative brings together the United Nations organizations formally mandated to compile country data on SDG 6, building on existing efforts such as the WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene,<sup>76</sup> the Global Environment Monitoring System for Water<sup>77</sup> of the United Nations Environment Programme (UNEP), the Global Information System on Water and Agriculture (AQUASTAT)<sup>78</sup> of the Food and Agriculture Organization of the United Nations (FAO) and the

72 Information on the Framework is available at: <https://unstats.un.org/unsd/envstats/fdes.cshtml>.

73 For information on the System see: <https://seea.un.org/content/homepage>. Additional information on the Central Framework is available at: <https://seea.un.org/content/seea-central-framework>.

74 For information on SDG indicators' correspondence with the Basic Set of Environment Statistics of the FDES 2013, see: [https://unstats.un.org/unsd/envstats/fdes/SDGslnd\\_BasicSetMatrix.pdf](https://unstats.un.org/unsd/envstats/fdes/SDGslnd_BasicSetMatrix.pdf). For a presentation on SEEA and SDGs, see: [https://seea.un.org/sites/seea.un.org/files/da9\\_asia\\_304\\_seea-sdgs.pdf](https://seea.un.org/sites/seea.un.org/files/da9_asia_304_seea-sdgs.pdf).

75 Further information available at: <https://www.sdg6monitoring.org/about/integrated-monitoring-initiative/>.

76 See: <https://washdata.org/>.

77 See: <https://www.unenvironment.org/explore-topics/water/what-we-do/monitoring-water-quality>.

78 See: <http://www.fao.org/aquastat/en/>.

UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water.<sup>79</sup> This joint effort enables synergies across organizations as well as a harmonization of methodologies and data requests, leading to more efficient outreach and reduced reporting burden. At the national level, it promotes intersectoral collaboration and consolidation of existing capacities and data across organizations. The overarching goal of the initiative is to accelerate achievement of SDG 6 by increasing the availability of high-quality data for evidence-based policymaking, regulations, planning and investments at all levels.

A notable outcome of the initiative during its first phase was the development of the 2018 SDG 6 Synthesis Report on Water and Sanitation,<sup>80</sup> which assessed progress towards all SDG 6 targets and informed discussion at the 2018 High-level Political Forum (HLPF; see section 3.1.6). The influence of this report was enhanced by the fact that it represented a coordinated effort by all United Nations agencies responsible for SDG 6 indicators to speak with one voice. With support from the Governments of Germany, the Netherlands, Sweden and Switzerland, the second phase of the initiative (2019–2022) is concentrating on refining SDG 6 indicator methodologies;<sup>81</sup> further supporting countries to collect, analyse and report SDG 6 data; and supporting decision-makers at all levels to use the data. Box 4 provides an example of how the initiative has improved measurement and monitoring for Indicator 6.5.2 (proportion of transboundary basin area with an operational arrangement for water cooperation).

### 3.1.6 Dissemination and communication – Global responses

The global statistical community has invested a great deal in assuring the smooth flow of SDG data and indicators from the national to the regional and, ultimately, the global level so that progress toward the 2030 Agenda can be consistently and coherently communicated. In 2017, the United Nations Statistical Commission requested IAEG-SDGs to develop guidelines to ensure effective data flows between regional and global organizations and countries. According to the resulting guidelines,<sup>82</sup> SDG measurement and monitoring should be primarily based on data and statistics produced by NSSs.<sup>83</sup> The coordinating role of NSOs in NSSs should be encouraged and seen as central to the reporting process, while respecting and promoting existing data reporting arrangements between other actors in the NSS and regional and global organizations. The use of data transmission standards and tools to enable automated data exchanges, such as SDMX, should be promoted. NSOs and NSSs should, wherever possible, use internationally agreed standards, methodologies and definitions in data collection and statistical production. Metadata covering data sources, definitions, methods of data collection and computation used in indicator compilation should always be provided. International agencies and NSSs are expected to work together towards ensuring the most transparent and efficient way of reporting SDG indicators from the national level for international reporting, ideally using national reporting platforms (see section 3.2.5). Finally, SDG measurement and monitoring should always adhere to FPOS.

Figure 1 shows the major players in global data flows for SDG measurement and monitoring. The system begins with NSOs and NSSs, who are responsible for preparing SDG indicators at the national level (whether they be for national reporting purposes or for reporting to the global system). Indicators intended for global reporting then flow to custodian agencies, which are generally organizations of the United Nations or other global bodies with responsibility for compiling specific indicators. Custodian agencies then feed the indicators into the global SDG database,<sup>84</sup> where they serve as an important input into the annual reports of the United Nations Secretariat and the United Nations Secretary-General on progress toward the SDGs.<sup>85</sup> These, in turn, serve as background materials for the annual meeting of United Nations Member States – the High-Level Political Forum on Sustainable Development

79 See: [https://www.unwater.org/publication\\_categories/glaas/](https://www.unwater.org/publication_categories/glaas/).

80 Available at: [https://www.unwater.org/publication\\_categories/sdg-6-synthesis-report-2018-on-water-and-sanitation/](https://www.unwater.org/publication_categories/sdg-6-synthesis-report-2018-on-water-and-sanitation/).

81 See: <https://www.sdg6monitoring.org/activities/phase-2-of-the-integrated-monitoring-initiative/>.

82 Available at: <https://unstats.un.org/unsd/statcom/49th-session/documents/BG-Item-3a-IAEG-SDGs-DataFlowsGuidelines-E.pdf>.

83 An accompanying set of best practices in data flows and reporting has also been prepared by IAEG-SDGs, available at: <https://unstats.un.org/unsd/statcom/50th-session/documents/BG-3a-Best-Practices-in-Data-Flows-and-Global-Data-Reporting-for-theSDGs-E.pdf>.

84 Available at: <https://unstats.un.org/sdgs/indicators/database/>.

85 Available at: <https://www.un.org/sustainabledevelopment/progress-report/> and: [https://sustainabledevelopment.un.org/content/documents/26158Final\\_SG\\_SDG\\_Progress\\_Report\\_14052020.pdf](https://sustainabledevelopment.un.org/content/documents/26158Final_SG_SDG_Progress_Report_14052020.pdf), respectively.



(HLPF).<sup>86</sup> Another set of major inputs into HLPF are VNRs on SDG progress prepared by Member States themselves. These reviews all contain statistical annexes in which SDG indicators are presented (either national indicators or global indicators or both).

#### Box 4: Monitoring transboundary water cooperation through SDG Indicator 6.5.2

SDG Indicator 6.5.2 monitors the proportion of transboundary water basins in a country covered by an “operational arrangement” for water cooperation. The indicator methodology provides criteria for determining “operationality”, including whether countries have established joint institutional arrangements, whether they exchange data at least annually, whether they meet at least once a year and whether they have coordinated management plans or joint objectives. Through UN-Water’s Integrated Monitoring Initiative for SDG 6,<sup>87</sup> UNECE and the United Nations Educational, Social and Cultural Organization took joint responsibility for developing the indicator methodology and, as co-custodians, are responsible for overseeing its implementation.

Reporting is to take place every three years, with the first data for 2017 based on reports from more than 100 of the 153 countries that share transboundary basins.<sup>88</sup> This high level of response – given it was the first time that countries reported on the indicator – bodes well for future reporting. It also played a role in the decision to elevate the indicator to Tier 1 status within the SDG indicator classification<sup>89</sup> – meaning it is recognized as being conceptually clear, based on internationally established methodology and standards and that data are available for at least 50 percent of countries sharing transboundary basins.

While the response to the first reporting exercise was positive, the exercise was not without its challenges. As this was the first time that countries applied the indicator methodology, it proved challenging to ensure that all relevant stakeholders were involved in reporting so that the most complete and accurate national data were provided. Data availability proved particularly challenging in relation to transboundary groundwater where data, if available, are held by national geological survey offices and/or not widely disseminated. However, the first reporting exercise also revealed several good examples inter-departmental coordination, with committees established to ensure collaboration. This led not just to better reporting but also the opportunity to deepen understanding of the state of transboundary cooperation across a wide range of sectors. A detailed report on the results of the first data collection exercise has been prepared.<sup>90</sup>

A further challenge in reporting on transboundary water cooperation related to differing understanding of the nature of operational arrangements. On occasions, countries reported different data on the same basin. It is hoped that countries can compare previous reports and address differences in future reports. Bi-national organizations can play a particularly useful role in coordinating responses between countries.

An additional feature of reporting under Indicator 6.5.2 is that it takes place in coordination with reporting under the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (known as the Water Convention).<sup>91</sup> In practice, this means that Parties to the Water Convention need only complete one questionnaire to report on both implementation of the Water Convention and Indicator 6.5.2.<sup>92</sup> Other countries are invited to complete the same questionnaire – more than 90 countries did so during the first reporting exercise – allowing them to substantiate the data provided and flexibility to report on a wider range of cooperative activities than the indicator itself allows.

86 Full information on HLPF is available at: <https://sustainabledevelopment.un.org/hlpf>.

87 Further information available at: <https://www.sdg6monitoring.org/>.

88 See: <https://sdg6data.org/indicator/6.5.2>.

89 For the tier classification, see: <https://unstats.un.org/sdgs/iaeg-sdgs/tier-classification/>.

90 *Progress on Transboundary Water Cooperation: Global baseline for SDG indicator 6.5.2 (2018)*, UNECE and UNESCO (ECE/MP.WAT/57), available at: [https://www.unece.org/fileadmin/DAM/env/water/publications/WAT\\_57/ECE\\_MP.WAT\\_57.pdf](https://www.unece.org/fileadmin/DAM/env/water/publications/WAT_57/ECE_MP.WAT_57.pdf).

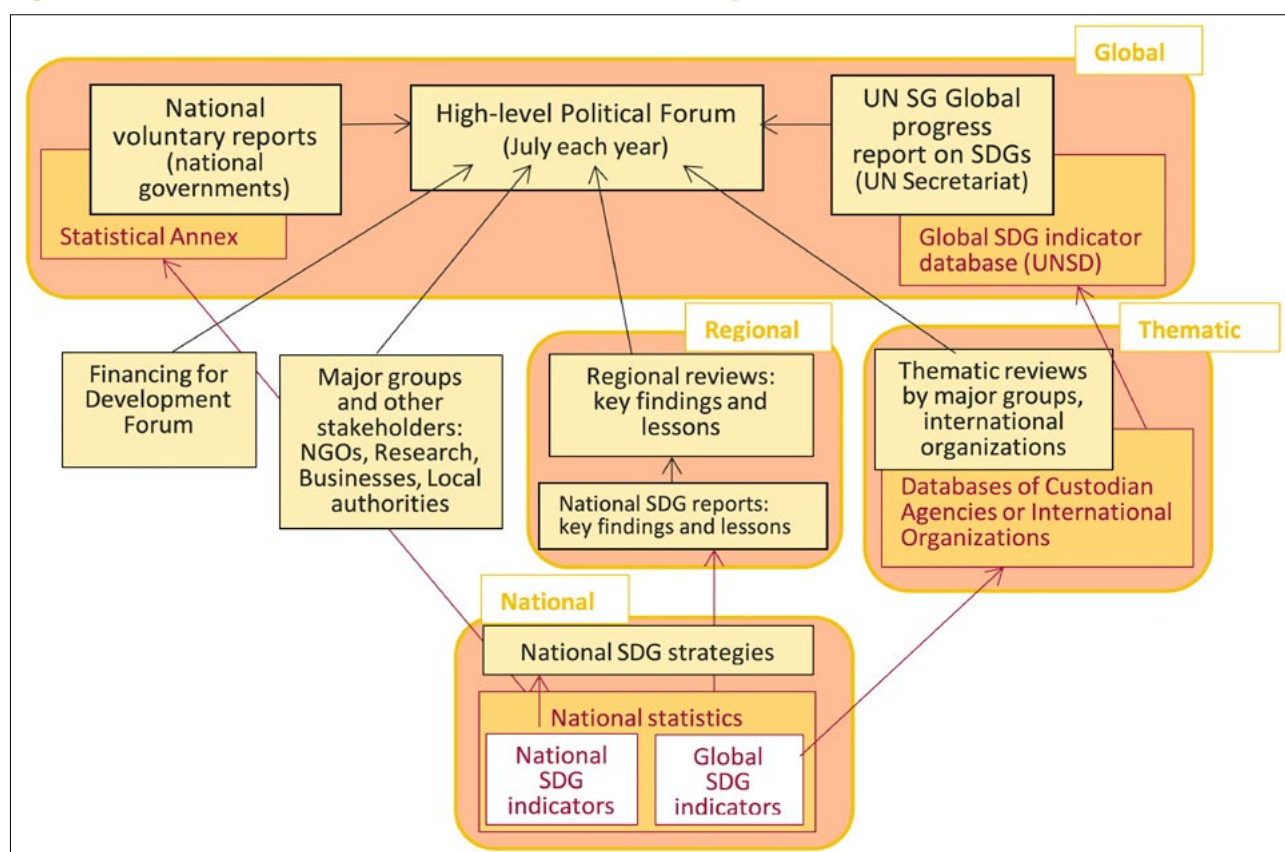
91 For further information on the Water Convention, see: <https://www.unece.org/env/water/>.

92 The reporting system is described at: [http://www.unece.org/water/transboundary\\_water\\_cooperation\\_reporting.html](http://www.unece.org/water/transboundary_water_cooperation_reporting.html).

In 2016, the Government of the United States of America developed and launched an online national reporting platform for the SDGs.<sup>93</sup> The innovation behind the initiative is the adaptation of an existing product with an established open-source community, offering a solution that is country-led, free for any country or organization to replicate and fully customizable. The United Kingdom Office for National Statistics further developed the tool and established it as its own national reporting platform for the SDGs.<sup>94</sup> New enhancements include the ability to display disaggregated data for indicators – a feature that helps identify and prioritize those furthest behind. Both online platforms are works in progress. The two countries' bilateral collaboration continues to support others, such as Armenia, Kyrgyzstan and Poland, in adopting their platforms and developing additional features, such as enhanced data visualization.

The approach to reporting global progress against SDG 7 (affordable and clean energy) provides an example of effective dissemination and communication. Called The Energy Progress Report,<sup>95</sup> the approach consists of an interactive website sponsored by the various custodian organizations for SDG 7 that provides a global overview of progress toward each of the goal's three targets, as well as county-specific data.<sup>96</sup> The site supports tracking of progress of the energy-related objectives. Building upon it, regional reports offer expanded and more in-depth analysis. The one for the UNECE region applies a broad concept of "energy for sustainable development", which measures progress towards all energy-related SDGs, reflecting the crosscutting interconnections.<sup>97</sup>

**Figure 1: Global data flows for SDG measurement and monitoring**



93 See: <https://sdg.data.gov/>.

94 See: <https://sdgdata.gov.uk/>.

95 Available at: <https://trackingsdg7.esmap.org/>. Until 2017, this report was referred to as the SE4LL Global Tracking Framework; see: <https://www.worldbank.org/en/topic/energy/publication/Global-Tracking-Framework-Report>.

96 The International Energy Agency, the International Renewable Energy Agency, the United Nations Statistics Division, the World Bank and WHO.

97 *Global Tracking Framework: UNECE Progress in Sustainable Energy*, UNECE (UNECE/ENERGY/108), available at: [https://trackingsdg7.esmap.org/data/files/download-documents/unece\\_regional\\_gtf\\_2017\\_report.pdf](https://trackingsdg7.esmap.org/data/files/download-documents/unece_regional_gtf_2017_report.pdf).

### 3.1.7 Financial and human resources – Global responses

The Dubai Declaration on global financing<sup>98</sup> in support of the implementation of the Cape Town Global Action Plan called in 2018 for the establishment of an innovative funding mechanism to mobilize both domestic and international funds to strengthen the capacity of national data and statistical systems for SDG measurement and monitoring. The funding mechanism should be created under the guidance of representatives of statistical systems and different data and donor communities who support the decision making on its operations. To date, no such mechanism has been put in place. This is a concern, since a 2018 survey on approaches to capacity development for measurement and monitoring,<sup>99</sup> under the Partnership in Statistics for Development in the 21st Century (PARIS21), found that the dominant factor preventing success of capacity development initiatives for most countries is a shortage of financial resources.

An innovative approach to supporting financing for measurement and monitoring was launched in 2019 by OECD in the form of an interactive website to inform policy leaders and decision-makers on resources to achieve the 2030 Agenda. Realizing that there are no global statistics available on financing the SDGs, the OECD SDG Finance Lab<sup>100</sup> was created to quantify the contribution of different donors to the SDGs and to help increase transparency and improve the impact of aid. The first product of the Lab – the SDG tracker – uses artificial intelligence to link the financial contributions of bilateral lenders, multilateral organizations and philanthropic foundations with specific SDGs.<sup>101</sup> The SDG Tracker draws data from the OECD Credit Reporting System,<sup>102</sup> which provides information on aid activities by country, sector and project, to map official development assistance to the SDGs. The results show, for example, that the highest funding goes to SDG 9 (industry, innovation and infrastructure), which received 12 per cent of the total, while SDG 14 (life below water) and SDG 15 (life on land) receive the least funding (3.5 per cent) among the SDGs. Users can view aid flows from the perspective of the donor or the recipient.

## 3.2 REGIONAL RESPONSES

### 3.2.1 Defining and supporting the role of National Statistical Offices – Regional responses

UNECE is actively supporting its member States in overcoming the challenges of SDG measurement and monitoring. The creation of the measurement and monitoring nexus team that commissioned the report that formed the basis for this publication is just one example of this. The nexus team provides focus to UNECE efforts to support countries and ensure that it does so in a way that is consistent across its subprogrammes.

UNECE, through the Conference of European Statisticians,<sup>103</sup> acted very quickly after the adoption of the SDGs in 2015 to formulate the Declaration on the role of NSOs in measuring and monitoring the SDGs.<sup>104</sup> The declaration emphasized the importance of sharing experience and cooperation at subnational, national, regional and global levels, recognizing that regional and global organizations have particular technical expertise in this area. It also emphasized the importance of effective data sharing from countries to regional and global organizations. More specifically, the declaration committed NSOs in the UNECE region to:

- Contribute actively to SDG measurement and monitoring using high-quality statistics produced using administrative, geospatial and other new data sources

98 See: <https://unstats.un.org/sdgs/hlg/dubai-declaration/>.

99 Available at: <https://paris21.org/capacity-development-40/cd40-survey>.

100 See: <https://sdg-financing-lab.oecd.org/?country=All%20providers&distribution=providers&sdg=1>.

101 For information, see: [https://www.oecd-ilibrary.org/development/linking-aid-to-the-sustainable-development-goals-a-machine-learning-approach\\_4bdaeb8c-en](https://www.oecd-ilibrary.org/development/linking-aid-to-the-sustainable-development-goals-a-machine-learning-approach_4bdaeb8c-en).

102 Available at: <https://stats.oecd.org/Index.aspx?DataSetCode=CRS1>.

103 The Conference of European Statisticians comprises the heads of the NSOs of all UNECE member States, plus the heads of statistics of OECD, Interstate Statistical Committee of the Commonwealth of Independent States, Eurostat, the International Monetary Fund, United Nations Secretariat and the World Bank as permanent observers; for more information, see: <https://www.unece.org/stats/aboutces.html>.

104 Declaration on the role of national statistical offices in measuring and monitoring the Sustainable Development Goals (ECE/CES/89/Add.1), available at: <https://undocs.org/en/ECE/CES/89/Add.1>.



- Engage effectively with other members of the NSS and with extra-governmental stakeholders
- Provide leadership in the dissemination and communication of SDG indicators
- Increase the availability of statistics disaggregated by specific groups
- Further develop their statistical capacity to ensure effective measurement and monitoring.

The Conference of European Statisticians (CES) went on to create the Steering Group on Statistics for Sustainable Development in 2016 with the aim of coordinating and guiding its work in this area and ensuring that the need to support measurement and monitoring is considered explicitly in all statistical activities of UNECE and not just in its Statistics Division.<sup>105</sup> The Steering Group, whose terms of reference were renewed in 2019, is supported by three task teams, each with its own terms of reference and objectives, addressing the UNECE regional reporting platform, data transmission, capacity development and communication of statistics for SDGs.<sup>106</sup>

Along with the declaration of the role of NSOs in measurement and monitoring, the major output of the Steering Group has been the publication of a generic Road Map on Statistics for Sustainable Development Goals (CES Road Map)<sup>107</sup> laying out what needs to be done, who the stakeholders are and what the opportunities are for cooperation in implementing the Declaration by the Conference of European Statisticians. The first edition of the CES Road Map was published in 2017 and an updated edition was being prepared in 2020. The road map provides guidance to NSOs on:

- Establishing national mechanisms for collaboration
- Assessing readiness to provide data on global SDG indicators (based on a self-assessment template)<sup>108</sup>
- Developing regional, national and subnational indicators
- Providing data on global SDG indicators
- Building statistical capacity for statistics for SDGs
- Communication and dissemination of statistics for SDGs.

Though not developed specifically in response to the 2030 Agenda, the *Generic Law on Official Statistics* (Generic Law)<sup>109</sup> developed jointly by UNECE, the European Free Trade Association and the statistical office of the European Union (Eurostat) is nonetheless a valuable tool for countries looking to better support the work of their NSO or NSS. The Generic Law specifically targets the countries of Eastern Europe, the Caucasus and Central Asia, providing a robust template from which laws underpinning national statistics can be drafted. The Generic Law is fully consistent with FPOS and aligned with the principles of the European Statistics Code of Practice where applicable. The intent is that the Generic Law be adjusted to national circumstances while maintaining as much of its content as possible, as it carefully defines the rights and obligations of the NSO as the lead agency in NSS, as well as the principles and procedures to be applied in developing, producing and disseminating official statistics.

### 3.2.2 Coordination and collaboration – Regional responses

As noted in the Declaration by the Conference of European Statisticians on the role of NSOs, NSOs have a key role to play in ensuring coordination and collaboration in SDG measurement and monitoring. Reflecting this, the CES Road Map devotes an entire section to related issues, noting that the precise role given to an NSO depends on the nature of the NSS (centralized versus decentralized), national statistical legislation and existing frameworks for coordination. As possible elements of their role, the CES Road Map notes that NSOs are well positioned to:

- Promote discussion of data collection and analysis between government agencies and regional and global organizations

105 For more information on the Steering Group, see: <https://www.unece.org/statistics/networks-of-experts/ces-steering-group-on-statistics-for-sustainable-development-goals.html>.

106 Additional information regarding the activities of the Conference of European Statisticians related to sustainable development, including work carried out that pre-dates the SDGs, is available at: <https://www.unece.org/stats/statistics-sustainable-development.html>.

107 Available at: <https://www.unece.org/stats/publications/roadmapsdg.html>.

108 Available at: <https://statswiki.unece.org/display/SFSDG/Statistics+for+SDGs+Home?preview=/127666441/128516394/Self-assessment%20template%20on%20availability%20of%20SDG%20indicators.xlsx>.

109 Available at: <https://www.unece.org/index.php?id=45114>.

- Communicate with stakeholders on statistical matters relevant to measurement and monitoring
- Coordinate advocacy for data collection
- Coordinate information exchange on SDG indicators
- Promote discussion on statistical capacity-building.

An important task for NSOs is preparation of detailed road maps for measurement and monitoring. Road maps should cover not just issues within the purview of the NSO and NSS but also those that require cooperation with partners outside the NSS; for example, coordinating data flows for indicators that require data from non-governmental sources.

In fulfilling their coordinating roles, NSOs should work in close collaboration with the organization responsible for national reporting. In many countries, the latter role is played by a policy body identified as the national SDG focal point, such as a unit in the prime minister's office or the planning ministry. The organization responsible for national reporting is likely to be well integrated into regional and global SDG processes and can be an important source of insight into the information needs of policymakers for the NSO. NSOs should be included from the outset in any reporting plan developed by the focal point to take advantage of this insight and apply it in coordinating the involvement of the NSS. Since some countries already have coordination frameworks between policymakers and statisticians, consideration should be given to integrating SDG measurement and monitoring into existing processes before creating new ones.

At a higher level, UNECE coordinates the Regional Forum on Sustainable Development for the region,<sup>110</sup> which provides a platform for review, peer-learning and follow up of the implementation of the SDGs in the region. Similar regional forums exist in other parts of the world, feeding both national and global processes. The summary from each regional forum provides the region's official input to the annual HLPF on SDGs. The Regional Forum provides an important opportunity for statisticians and policymakers to discuss data needs for measurement and monitoring. At its 2017 meeting, for example, a roundtable was organized to address the following questions:

- What are the role and limits of official statistics for measurement and monitoring? How can other data sources be used? What mechanisms can support cooperation between policymakers and statisticians? How can the needs of policymakers be identified?
- How to prioritize national statistical programmes for measurement and monitoring in view of resource constraints?
- How can a measurement and monitoring process including national, regional and global considerations be established in the region? How can coordination between different organizations in the region and regional United Nations entities be achieved?<sup>111</sup>

The 2020 meeting saw the launch of several products that facilitate access to high-quality information on how the UNECE region and member States are progressing toward the SDGs:

- The **UNECE SDG Database**,<sup>112</sup> which allows users to compile customized tables that, by default, show all relevant indicators disaggregated by gender, a feature not available in any other regional or global database.
- The **UNECE Dashboard of SDG Indicators**,<sup>113</sup> which provides users with quick access to graphs, maps and tables focusing on the indicators deemed most relevant in the region, enhancing their visibility and simplifying their use.
- The **UNECE SDG Knowledge Hub**,<sup>114</sup> which provides a single point of entry to a wide range of information relevant to coordination, implementation and measurement and monitoring of the SDGs in the region.

110 See: <https://www.unece.org/unece-and-the-sdgs/regional-forum/regional-forum-on-sustainable-development.html>.

111 See the Report of the Regional Forum on Sustainable Development for the UNECE region on its first session for the outcome of the roundtable available at: [https://www.unece.org/fileadmin/DAM/sustainable-development/RFSO\\_2017/ECE\\_AC.25\\_2017\\_2-e\\_rev.pdf](https://www.unece.org/fileadmin/DAM/sustainable-development/RFSO_2017/ECE_AC.25_2017_2-e_rev.pdf).

112 Available at: [https://w3.unece.org/PXWeb2015/pxweb/en/STAT/STAT\\_92-SDG\\_01-sdgover/](https://w3.unece.org/PXWeb2015/pxweb/en/STAT/STAT_92-SDG_01-sdgover/).

113 Available at: <https://w3.unece.org/sdg/>.

114 Available at: <https://w3.unece.org/sdghub/>.

- The first **regional report on progress towards the SDGs** of UNECE,<sup>115</sup> which was created using the capacities of the Database and Dashboard. It describes the how countries are fulfilling targets and making progress and also those areas where additional efforts will be needed to ensure the goals are met by 2030.

Another major regional initiative relevant to coordination and collaboration is the Regional United Nations Coordination Group on Data and Statistics for Europe and Central Asia.<sup>116</sup> This reporting body under the Conference of European Statisticians is co-chaired by UNECE and UNEP and builds on the work of the previous Issue-Based Coalition on Data and Monitoring for the Sustainable Development Goals.<sup>117</sup> The objectives of the coordination group are to:

- Coordinate statistical work of different agencies to ensure coherence and synergies at the country level, as well as with the priorities and work carried out by the main intergovernmental body, the Conference of European Statisticians, and the activities of other regional organizations, including Eurostat, the European Free Trade Association and the Interstate Statistical Committee of the Commonwealth of Independent States.
- Adhere to statistical norms and standards in modernized national statistical systems (in line with FPOS) towards high quality, comparable and timely data for decision-making.

### 3.2.3 Modernizing statistical processes and systems – Regional responses

As the CES Road Map notes, the need for SDG measurement and monitoring strengthens the case for modernization of statistical processes and systems. No country can produce all the statistics required for measurement and monitoring and the pressure to meet SDG indicator needs comes at a time of generally shrinking financial resources, so efficiency improvements through modernization of statistical systems are paramount. UNECE has been actively supporting the statistical modernization agenda for the last decade. Its efforts have resulted in several major outputs, including:

- The **Generic Statistical Business Process Model** (GSBPM) describing the core business processes undertaken by statistical organizations to produce statistical outputs<sup>118</sup>
- The **Generic Statistical Information Model** describing the core information needed by statistical organizations to produce statistics<sup>119</sup>
- The **Generic Activity Model for Statistical Organizations**, which extends and complements the GSBPM by describing the overarching activities and processes that support the production of official statistics<sup>120</sup>
- The **Common Statistical Data Architecture**, which facilitates sharing of statistical services and provides a practical link between conceptual GSBPM and Generic Statistical Information Model standards and the statistical production process.<sup>121</sup>

The UNECE work in this area is led by the High-level Group for the Modernization of Official Statistics, a group of NSOs working to identify trends, threats and opportunities in modernizing statistical organizations.<sup>122</sup> The High-Level Group is supported in its work by four sub-groups:

- A group on standards for modernization responsible for developing, maintaining, and interlinking GSBPM, the Generic Activity Model for Statistical Organizations and the Generic Statistical Information Model

115 *Towards Achieving the Sustainable Development Goals in the UNECE Region*, UNECE, 2020, available at: [https://www.unece.org/fileadmin/DAM/stats/publications/2020/SDG\\_report\\_for\\_web.pdf](https://www.unece.org/fileadmin/DAM/stats/publications/2020/SDG_report_for_web.pdf).

116 The terms of reference of the Coordination Group are available at: <https://statswiki.unece.org/download/attachments/256970750/ToR%20Regional%20Coord%20Group%20on%20Data%20and%20Statistics.docx?version=1&modificationDate=1580805820249&api=v2>.

117 A brief description of the Coalition is available at: [https://www.unece.org/fileadmin/user\\_upload/IBC\\_on\\_SDG\\_Data\\_and\\_Monitoring..pdf](https://www.unece.org/fileadmin/user_upload/IBC_on_SDG_Data_and_Monitoring..pdf).

118 Information is available at: <https://statswiki.unece.org/display/GSBPM/Generic+Statistical+Business+Process+Model>.

119 See: <https://statswiki.unece.org/display/gsim/Generic+Statistical+Information+Model>.

120 See: <https://statswiki.unece.org/display/GAMSO/Generic+Activity+Model+for+Statistical+Organizations>.

121 Further information is available at: <https://statswiki.unece.org/display/CSPA/Common+Statistical+Production+Architecture>.

122 Full information on the High-level Group is available at: <https://statswiki.unece.org/display/hlgbas>.



- A group on capacity-building and communication focused on change management, collaboration frameworks and communications
- A group on tools sharing for developing the Common Statistical Data Architecture and facilitating the sharing of statistical services
- An “ideas factory”, known as the Blue Sky Thinking Network, for assessing emerging areas of work and new developments and for stimulating innovative practices.

Nearly all UNECE member States are using GSBPM to modernize their statistical production processes. Use is widespread in other regions as well, making it a global model. All the modernization standards developed by the High-Level Group have been pilot-tested first in the region before being applied in other parts of the world.

In addition to supporting the work of the High-Level Group, UNECE has published *Guidance on Modernizing Statistical Legislation* to assist countries wishing to benchmark or update the legal framework of their NSS.<sup>123</sup> The work responds to the need to reinforce legal frameworks to guarantee the independence, integrity and accountability of statistical systems and maintain data quality while supporting the introduction of new business models and data sources. Several countries in the region, including Malta, Norway, Slovakia and Switzerland, are applying the guidance to revise their statistical laws. In addition, Armenia, Kyrgyzstan and the Republic of Moldova have already adopted new statistical legislation based on the Generic Law.<sup>124</sup>

Eurostat is also contributing to the regional modernization agenda with its Vision 2020, which focuses on better addressing user needs, improving statistical quality, harnessing new data sources, promoting efficiency in production and new approaches to communication and dissemination.<sup>125</sup>

### 3.2.4 Strengthening basic statistics and accounts – Regional responses

UNECE and other organizations within the UNECE region have responded in many ways to the need to strengthen basic statistics and accounts and develop policy tools to improve SDG measurement and monitoring. Some of the initiatives undertaken are outlined below, starting with the significant efforts to improve environmental statistics.

#### **Environment**

Recognizing that environmental statistics are in particular need of improvement, the Conference of European Statisticians produced the first ever recommendations on climate change-related statistics in 2014,<sup>126</sup> providing the basis for effective decision-making for climate action. UNECE provides the secretariat for the Steering Group on Climate Change-Related Statistics, which hosts an annual expert forum for users and producers of climate change-related statistics to share ideas.<sup>127</sup>

The UNECE set of environmental indicators<sup>128</sup> is being aligned with SDG indicators by the UNECE Joint Task Force on Environmental Statistics and Indicators.<sup>129</sup> The Joint Task Force provides a central hub for building capacity and fostering discussion among countries of Eastern Europe, the Caucasus, Central Asia and South-Eastern Europe on indicators ranging from air pollution, climate change, water, biodiversity, land and soil to agriculture, energy, transport

123 *Guidance on Modernizing Statistical Legislation*, UNECE, 2019 (ECE/CES/STAT/2018/3), available at: <http://www.unece.org/fileadmin/DAM/stats/publications/2018/ECECESSTAT20183.pdf>.

124 For a news article on the activities in the Republic of Moldova, see: <http://www.unece.org/info/media/news/statistics/2018/supporting-reliable-statistics-in-the-post-truth-era-moldova-is-the-first-country-to-apply-the-unece-generic-law-on-official-statistics/doc.html>.

125 Available at: <https://ec.europa.eu/eurostat/web/ess/about-us/ess-vision-2020>.

126 *Recommendations on Climate Change-Related Statistics*, UNECE, 2014, available at: [https://www.unece.org/fileadmin/DAM/stats/publications/2014/CES\\_CC\\_Recommendations.pdf](https://www.unece.org/fileadmin/DAM/stats/publications/2014/CES_CC_Recommendations.pdf).

127 Further information on the activities of the Steering Group is available at: <http://www.unece.org/statistics/networks-of-experts/steering-group-on-climate-change-related-statistics.html>.

128 See guidelines available at: <http://www.unece.org/env/indicators.html>.

129 Information on the Joint Task Force is available at: <http://www.unece.org/environmental-policy/environmental-monitoring-and-assessment/about-us/joint-task-force-on-environmental-statistics-and-indicators.html>.

and waste. The UNECE set of environmental indicators, among others, also has a major role to play in measuring and monitoring a circular economy in the region; regularly assessing the state of the environment can support progress in implementing a circular economy.

Other notable UNECE efforts to support improvement of environmental statistics include the following:

- A dedicated **Task Force on Waste Statistics**<sup>130</sup>
- The regional **Convention on Long-range Transboundary Air Pollution**,<sup>131</sup> which supports air quality monitoring via a network of over 150 sites that collect data to help assess the environmental and health impacts of air pollution (see Box 5)
- Integration of SDGs into national **environmental performance reviews** (see Box 6)
- Recommendations on the Role of Official Statistics in **Measuring Hazardous Events and Disasters**.<sup>132</sup>

#### Box 5: UNECE air pollution monitoring

In the domain of air pollution statistics, the UNECE Working Group on Effects<sup>133</sup> (established in 1980) is the world's most extensive network of harmonized environmental monitoring for air pollution effects. The network studies air pollution effects in the pan-European area and North America based on international cooperation on research, monitoring and modelling. It manages six international cooperative programmes, a joint Expert Group on Dynamic Modelling and a joint Task Force on Health with WHO. The network carries out:

- Long-term monitoring of ecosystems and materials at thousands of sites
- Intensive monitoring for research and modelling at selected sites
- Trend exposure programme for materials and case studies at cultural heritage sites
- Assessment of relationships between pollutant load and impacts
- Studies on modelling and mapping of critical loads and levels for acidification, eutrophication and ground-level ozone impacts
- Evaluation of air pollution effects on human health.

The extensive monitoring network and long-term data are unique and are vital to detecting the rate, trend, extent and intensity of changes of air pollution effects on ecosystems and materials. The network enables forecasting of potentially adverse effects, provides early warnings and helps to assess the effectiveness of air pollution policies.

### Forests

The joint UNECE/FAO forest resources programme<sup>134</sup> collects data on the state of forests and their management. Following the adoption of the SDGs, there was need for greater focus on reporting on the achievement of Goal 15 (protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss). In 2018, at the request of member

130 See: <http://www.unece.org/statistics/networks-of-experts/task-force-on-waste-statistics.html>.

131 See: <https://www.unece.org/env/lrtap/welcome.html.html>.

132 UNECE, 2019 (ECE/CES/STAT/2019/3), available at: <https://www.unece.org/fileadmin/DAM/stats/publications/2019/ECECESSTAT20193.pdf>.

133 The work of the Working Group is described at: <https://www.unece.org/environmental-policy/conventions/envlrtapwelcome/convention-bodies/working-group-on-effects.html>.

134 See: <http://www.unece.org/forests/areas-of-work/forest-resources.html>.

States (see Box 7), an updated reporting system containing indicators to measure targets 15.1 and 15.2<sup>135</sup> was launched and guidance on reporting was provided through face-to-face training sessions. As a result, extensive and high-quality data are being provided for targets 15.1 and 15.2 on sustainable forest management for 50 of 56 member States. Beyond the two SDG indicators, the reporting system includes additional variables at the global level, further extended at the pan-European one. This should make it possible to identify and address specific challenges in the achievement of those targets.

In addition, Guidelines for sustainable forest management indicators (see Box 8) have been developed by UNECE.<sup>136</sup>

### Box 6: Integration of the SDGs in Environmental Performance Reviews

A UNECE environmental performance review (EPR) is an assessment of the progress a country has made in reconciling its environmental and economic targets and in meeting its international environmental commitments. The EPR programme assists and supports member States in improving their environmental management and performance; promotes information exchange on policies and experiences among countries; helps in the integration of the environmental policies into economic sectors; promotes greater accountability to the public; strengthens cooperation with the international community; and contributes to the achievement and monitoring of relevant SDGs.<sup>137</sup>

The most recent cycle of EPRs has focused on environmental governance and financing in a green economy context; cooperation with the international community; and environmental mainstreaming in priority sectors. In line with the Batumi Ministerial Declaration in 2016,<sup>138</sup> EPRs began in 2017 to address relevant SDGs to provide guidance to countries in designing policies and measures to achieve the 2030 Agenda,<sup>139</sup> leading to a variety of valuable lessons learned.<sup>140</sup> Reviews have also addressed systemic issues such as the existence of institutional frameworks for implementation and review of the 2030 Agenda; integration of SDGs into national policy; data gaps; and resource availability. The following EPRs published up to 2019 integrated SDGs: Albania,<sup>141</sup> Bosnia and Herzegovina,<sup>142</sup> Mongolia,<sup>143</sup> Kazakhstan<sup>144</sup> and North Macedonia.<sup>145</sup> EPRs of Romania and Uzbekistan were being prepared in 2020.

The coverage of the SDGs in EPRs has been tailored on a case-by-case basis to be relevant to the content of the reviews, which has, in turn, been determined in consultation with the member State concerned. During preparatory missions, the UNECE secretariat has consulted with relevant national institutions and the United Nations in-country teams on the needs and practicalities of integrating SDGs into the reviews. The goals most often covered in the reviews include 6 (clean water and sanitation), 12 (responsible consumption and production), 13 (climate action) and 15 (life on land).

135 Target 15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements. Target 15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.

136 *Guidelines for the Development of a Criteria and Indicator Set for Sustainable Forest Management*, UNECE and FAO, 2019 (ECE/TIM/DP/73), available at: <https://www.unece.org/forests/forestspublications/resources/discussion-papers/2019/guidelines-for-the-development-of-a-criteria-and-indicator-set-for-sustainable-forest-management/docs.html>.

137 Activities on EPRs are described in detail at: <https://www.unece.org/env/epr.html>.

138 Declaration: "Greener, cleaner, smarter!" by Ministers of the region of the United Nations Economic Commission for Europe (ECE/BATUMI.CONF/2016/2/Add.1), available at: <https://undocs.org/en/ECE/BATUMI.CONF/2016/2/Add.1>.

139 See paragraph 9 of the Declaration.

140 See article at: <https://sdg.iisd.org/commentary/guest-articles/integrating-sdgs-into-environmental-performance-reviews-lessons-learned-in-europe/>.

141 UNECE, 2018 (ECE/CEP/183), available at: [http://www.unece.org/fileadmin/DAM/env/epr/epr\\_studies/ECE.CEP.183\\_Eng.pdf](http://www.unece.org/fileadmin/DAM/env/epr/epr_studies/ECE.CEP.183_Eng.pdf).

142 UNECE, 2018 (ECE/CEP/184), available at: [http://www.unece.org/fileadmin/DAM/env/epr/epr\\_studies/ECE.CEP.184\\_Eng.pdf](http://www.unece.org/fileadmin/DAM/env/epr/epr_studies/ECE.CEP.184_Eng.pdf).

143 UNECE, 2018 (ECE/CEP/182), available at: [http://www.unece.org/fileadmin/DAM/env/epr/epr\\_studies/ECE\\_CEP\\_182\\_Eng.pdf](http://www.unece.org/fileadmin/DAM/env/epr/epr_studies/ECE_CEP_182_Eng.pdf).

144 UNECE, 2019 (ECE/CEP/185), available at: [http://www.unece.org/fileadmin/DAM/env/epr/epr\\_studies/ECE\\_CEP\\_185\\_Eng.pdf](http://www.unece.org/fileadmin/DAM/env/epr/epr_studies/ECE_CEP_185_Eng.pdf).

145 UNECE, 2019 (ECE/CEP/186), available at: [http://www.unece.org/fileadmin/DAM/env/epr/epr\\_studies/ECE.CEP.186\\_Eng.pdf](http://www.unece.org/fileadmin/DAM/env/epr/epr_studies/ECE.CEP.186_Eng.pdf).



**Box 6: Integration of the SDGs in Environmental Performance Reviews (continued)**

The level of awareness of the SDGs is different in each reviewed country. In none of the countries reviewed to date is the national environmental authority the leading or coordinating authority for SDG measurement and monitoring. Given this, the simple exercise of integration of SDGs into the reviews has raised the profile of the national environmental authorities within the national setting. The countries are at various stages of defining institutional and policy frameworks for measurement and monitoring. In some countries, these frameworks are already in place and functional. In others, the process is only beginning and the EPR process has helped draw attention to their importance. In all countries, the process of setting the national SDG targets and indicators is in its early stages, making the SDG-related EPR recommendations timely and relevant.

The key challenge for the integration of SDGs into EPRs is data availability. In some cases, efforts to include specific targets had to be dropped due to the lack of information. The fact that a data availability review was undertaken, however, made the exercise valuable for the countries.

Incorporating SDGs into EPRs requires effort from both national and international experts to assemble and review the necessary data. This process has been useful in strengthening cooperation between national environmental authorities, NSOs and the authorities responsible for coordination of the 2030 Agenda.

**Box 7: Supporting UNECE member States to overcome challenges in forest resource reporting**

UNECE member State capacities to report data on forest resources vary greatly. Challenges include lack of basic source data and data collection systems and lack of resources to compile and report available data. Effective dissemination of data is not yet a given in many countries. Coordination between data compilers and data providers works well in some countries but not in others. National data are provided by officially nominated national correspondents who transform them to a common format. Each country develops its own structure, mechanism and funding in support of this activity. Countries have limited capacity to collect and validate high-quality data and, although international cooperation mechanisms are well developed and available, several countries lack the resources to implement them at the national level.

Together with FAO (custodian organization for SDG forest indicators) and other international partners (notably Forest Europe), UNECE developed a programme to support national data collection systems, develop forest information systems and build country capacity. The work benefited from cooperation and concerted actions among the main international partners engaged, which avoided overlaps and confusion, facilitated coordination of work and focussed and strengthened support for national work done in this area.

**Energy**

In the domain of energy statistics, UNECE supports quality improvements through, among other initiatives, promotion of the United Nations Framework Classification Resources – a global, principles-based and user-friendly system for classifying, managing and reporting mineral, petroleum, renewable energy and anthropogenic resources and injection projects.<sup>146</sup> UNECE contributes to advancing the energy statistics by participating in the development of a series of policy briefs to support SDG 7 review at the High-Level Political Forum.

146 For full information, see: <https://www.unece.org/energy/se/reserves.html>.

**Box 8: UNECE assistance for development of sustainable forest management criteria and indicators**

To strengthen national capacity for development of national criteria and indicators (C&I) for sustainable forest management,<sup>147</sup> UNECE is completing a project titled Accountability Systems for Sustainable Forest Management in the Caucasus and Central Asia.<sup>148</sup> The project targets five beneficiary countries (Armenia, Georgia, Kazakhstan, Kyrgyzstan and Uzbekistan). Its objective is to enable the beneficiary countries to develop the foundations of coherent forest information systems, participate in international processes related to forests and contribute to sustainable forest development and, ultimately, support development of the green economy. National C&I serve as tools to communicate the environmental and socioeconomic importance of forests at national, regional and international levels. They are also essential in measurement and monitoring for Goal 15. Through national and regional workshops and technical support, the project supports the development of national C&I sets in the beneficiary countries, cross fertilization and mentoring.

As a result of the project, all beneficiary countries will develop a final C&I set. To ensure sustainability and impact of project results, countries will have full ownership of their sets and receive on-going support for their implementation and integration. The sets will be aligned with existing forest monitoring facilities (for example, state forest monitoring centres, national forest inventories and data collection from local forest administrations).

Three project countries (Armenia, Kazakhstan and Kyrgyzstan) have asked for further support to facilitate and enhance data gathering for the C&I sets and with forest policy and management tools.

**Demography**

In terms of demographic statistics, the Conference of European Statisticians has prepared a set of recommendations to countries on the planning and execution of population and housing censuses, which are a fundamental source of information for many SDGs.<sup>149</sup> The recommendations aim to improve comparability of census data at the regional level through the identification of a core set of census topics and the harmonization of concepts, definitions and classifications.

**Gender**

Gender statistics play a central role in the SDG framework. Goal 5 of the SDGs calls for gender equality and empowerment of all women and girls. Gender equality is fundamental to all aspects of development, however. In total, 80 gender-relevant indicators are found across 14 of the 17 SDGs. With each of these comes the need for high quality data on often hard-to-define or sensitive topics. In this regard, UNECE leads the five-yearly regional review of progress in the implementation of the Beijing Platform for Action on the empowerment of women,<sup>150</sup> helping countries assess trends and progress in achieving gender equality in the region, identify current challenges, highlight good practices and commit to concrete actions in a range of key areas. Additionally, UNECE conducts methodological work to ensure appropriate measurement of gender issues in official statistics.<sup>151</sup> Internationally agreed guidance on valuing unpaid household service work is just one example.<sup>152</sup> Moreover, UNECE maintains a gender statistics database,<sup>153</sup> which highlights key trends in gender equality in the region. See Box 9 for other examples of ongoing UNECE work in the field of gender statistics.

147 *Guidelines for the Development of a Criteria and Indicator Set for Sustainable Forest Management*, UNECE and FAO, 2019 (ECE/TIM/DP/73).

148 For full information on the project, see: <http://www.unece.org/forests/areas-of-work/capacity-building/unda2016-2019.html>.

149 *Conference of European Statisticians Recommendations for the 2020 Censuses of Population and Housing*, UNECE, 2015 (ECE/CES/41), available at: [https://www.unece.org/fileadmin/DAM/stats/publications/2015/ECECES41\\_EN.pdf](https://www.unece.org/fileadmin/DAM/stats/publications/2015/ECECES41_EN.pdf).

150 See: <https://beijing20.unwomen.org/en/about>.

151 For a description of the activities, see: <https://www.unece.org/stats/gender.html>.

152 *Guide on Valuing Unpaid Household Service Work*, UNECE, 2017 (ECE/CES/STAT/2017/3), available at: <https://www.unece.org/fileadmin/DAM/stats/publications/2018/ECECESSTAT20173.pdf>.

153 Available at: [https://w3.unece.org/PXWeb2015/pxweb/en/STAT/STAT\\_30-GE\\_00-GenderOverView/001\\_en\\_GEOVFirst\\_r.px/](https://w3.unece.org/PXWeb2015/pxweb/en/STAT/STAT_30-GE_00-GenderOverView/001_en_GEOVFirst_r.px/).

**Box 9: Examples of UNECE work on gender statistics**

**Women in local government** – UNECE has been working closely with UN-Women over several years to ensure collection and compilation of data for the newly-defined SDG Indicator 5.5.1b on women in local government, for which UN Women is the custodian agency. This close cooperation led to UNECE replacing a previously existing indicator of women in municipal councils with a new one beginning in 2018.

**Intra-household power and decision-making** – Methodological work to improve the measurement of intra-household power and decision-making was launched by UNECE in 2017. A task force was established to produce a set of recommendations, which are expected to be endorsed by the Conference of European Statisticians and published in the course of 2020.<sup>154</sup>

**Communication of gender statistics** – Guidance notes on the communication of gender statistics were prepared by another UNECE task force and are expected to be published in the course of 2020, together with an inventory of good practice in communication of gender statistics.<sup>155</sup>

**Gender responsive standards** – UNECE guidance on gender responsive standards enables consistent treatment of women's health and safety needs in standard-setting activities with direct relevance to Goal 5 (gender equality) and target 8.3 (development-oriented policies for productive activities),<sup>156</sup> while the portal on standards for the SDGs<sup>157</sup> provides guidance on deploying standards for development in a manner that is consistent with national needs.

**Measurement of gender identity** – Many countries in the UNECE region and outside have been working on the measurement of gender identity, conducting research and testing questions. A task team was created to support regional networking and support collaboration among experts in the field.

**Trade**

Through the United Nations Global Survey on Digital and Sustainable Trade Facilitation,<sup>158</sup> implemented jointly with the regional commissions since 2015, UNECE generates indicators for measuring progress towards achieving SDG target 17.10 (universal, rule-based, open, non-discriminatory and equitable multilateral trading system) and tracking the spill-over effects of associated reforms. The UNECE recommendation on Trade and Transport Facilitation Monitoring Mechanisms<sup>159</sup> provides guidance on mechanisms for tracking the contribution of trade and transport to achievement of the 2030 Agenda. Since 2017, UNECE national assessments of regulatory and procedural trade barriers have involved whole-of-government approaches to non-tariff measure reforms, with detailed recommendations for monitoring progress.<sup>160</sup> UNECE launched a framework of quantitative and qualitative indicators in 2020 to help governments harness trade to serve as a means of implementation. The framework draws on UNECE national assessments and is being developed in consultation with the relevant agencies from countries where the studies were undertaken. It provides policymakers with a suite of development-driven indicators to choose from, as they strive to localize the 2030 Agenda. The indicators capture non-tariff measures, legislative reforms and capacity-building efforts aimed at increasing the efficiency and effectiveness of end-to-end supply-chain operations, and reference UNECE standards, recommendations, conventions and good-practice guidelines developed under the UNECE subprogrammes on trade, economic integration, transport, environment and statistics.

154 For information on the Task Force on Measuring Intra-household Power and Decision-making, see: <https://www.unece.org/statistics/networks-of-experts/task-force-on-measuring-intra-household-power-and-decision-making.html>.

155 For information on the Task Force on Communicating Gender Statistics, see: <https://www.unece.org/statistics/networks-of-experts/task-force-on-communicating-gender-statistics.html>.

156 Gender Responsive Standards, UNECE, 2019 (ECE/TRADE/445), available at: [https://www.unece.org/fileadmin/DAM/trade/Publications/ECE\\_TRADE\\_445E.pdf](https://www.unece.org/fileadmin/DAM/trade/Publications/ECE_TRADE_445E.pdf).

157 See: <https://standards4sdgs.unece.org/>.

158 Full information is available at: <https://untfsurvey.org/>.

159 Trade and Transport Facilitation Monitoring Mechanism, Recommendation No. 42, UNECE United Nations Centre for Trade Facilitation and Electronic Business, 2017, available at: [http://www.unece.org/fileadmin/DAM/trade/Publications/ECE\\_TRADE\\_437E\\_Rec42.pdf](http://www.unece.org/fileadmin/DAM/trade/Publications/ECE_TRADE_437E_Rec42.pdf).

160 For information on the assessments, see: <http://www.unece.org/trade/studies-on-regulatory-and-procedural-barriers-to-trade.html>.

### *Science, technology and innovation and public-private partnerships*

Science, technology and innovation and public-private partnerships (PPPs) are directly relevant to SDG 9 (build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation), as well as being key means of achieving the entire 2030 Agenda. PPPs help raise the funds needed to close the infrastructure investment gap, while science, technology and innovation are needed to develop new and cost-effective ways to meet society's material needs while safeguarding the environment for future generations.

UNECE supports SDG measurement and monitoring through a series of national reviews of innovation for sustainable development and its new Subregional Innovation Policy Outlook.<sup>161</sup> UNECE assists policymakers with methods and analytical support in measuring the contribution that science, technology and innovation makes to national sustainable development priorities and in monitoring the impact innovation policies have on this contribution. In addition to recommendations on improving statistical reporting on indicators under SDGs 9 and 17, UNECE advises member States on systemic issues such as aligning innovation policies with national sustainable development priorities, assessing the impact of innovation policies on specific SDGs and identifying inconsistencies across policy domains that undermine overall progress.

The PPP Project Impact Assessment Tool<sup>162</sup> is being developed to assess the compliance of infrastructure projects with the SDGs and the five “people-first” SDG outcomes.<sup>163</sup> This methodology, also called the People-first Impact Assessment Tool, will also allow governments to assess the resilience of infrastructure projects and their contributions to mitigating pandemic and other risks, as well as to distinguish between SDG-compliant and non-compliant projects in areas such as renewable energy, water and sanitation, waste management and urban transport. The tool will allow projects that score highly on all indicators to be showcased, encouraging their replication and scaling-up. The evaluation methodology will be rolled out both as a web-based self-assessment tool that will provide a score based on a simple questionnaire of closed-ended questions, and as a certified evaluation based on a detailed review of documentary evidence to get a score and a “People-first certification”.

### *Transport*

In the domain of transport statistics, providing improved compilation guidance for Indicator 9.1.2 (passenger and freight volumes, by mode of transport) is a priority for UNECE. A framework for measuring the indicator will be released in 2020. Though it is classed as a Tier 1 indicator, data availability, methods, definition and interpretation are not settled.<sup>164</sup> The indicator is interpreted at the national level either as a simple measure of volumes (in which case, more traffic could be interpreted as a good thing) or as a modal split indicator (in which case, the policy goal should be explicitly defined; for example, to reduce the passenger car share of passenger transport). Modal splits pertain to many aspects of sustainable transport, due to the differing negative externalities of each mode in terms of the four pillars of sustainable transport (safety; environmental sustainability; efficiency; and affordability and accessibility). The forthcoming guidance will assist countries in interpreting the indicator for their own national circumstances and policy goals, addressing the choice of modes to include, units of measure, scope and advice on additional indicators that countries can use to measure sustainable transport. Country case studies on the indicator are available (see, for example, Box 10).<sup>165</sup>

161 See: <https://www.unece.org/innovationpolicyoutlook.html>.

162 The draft of the tool is available at: [http://www.unece.org/fileadmin/DAM/ceci/documents/2020/PPP/WP/ECE\\_CECL\\_WP\\_PPP\\_2020\\_03-en.pdf](http://www.unece.org/fileadmin/DAM/ceci/documents/2020/PPP/WP/ECE_CECL_WP_PPP_2020_03-en.pdf).

163 The people-first outcomes are: increased access and equity, replicability, sustainability and resilience, economic effectiveness and stakeholder engagement.

164 See a presentation available at: [http://www.unece.org/fileadmin/DAM/trans/doc/2019/wp6/Presentations/2019\\_06\\_13\\_UNECE\\_sdg912.pdf](http://www.unece.org/fileadmin/DAM/trans/doc/2019/wp6/Presentations/2019_06_13_UNECE_sdg912.pdf).

165 A description of national experiences is available at: <https://statswiki.unece.org/display/CES19/National+Experiences+in+Monitoring+SDG+9.1.2>.



### Box 10: Measurement of SDG Indicator 9.1.2 in Slovenia

Slovenia argues<sup>166</sup> that Indicator 9.1.2 (passenger and freight volumes, by mode of transport) should include all modes of transport and be measured according to the territorial principle.<sup>167</sup> Both passenger-km and tonne-km are well suited as units of measurement for the indicator. Slovenia compiles indicators for all modes of transport but the data are not comparable in all cases, since some are based on the residency principle (road freight transport, public transport) while others are based on the territorial principle (freight transport).

The modal split for freight transport between road and rail is important in Slovenia. In the case of passenger transport, the split between private cars and public transport is most relevant. Slovenian transport statistics track both passenger and freight volumes, but only rarely is it possible to present modal splits. Currently, the indicators published by the Slovenian NSO relevant to Indicator 9.1.2 are:

- Public land transport (passenger-km) by mode (train, bus)
- Share of rail (tonne-km) in total land freight transport.

Both are based on Eurostat data and estimates rather than national data and, therefore, are not fully satisfactory, but nevertheless make the best of existing data.

In addition, UNECE disseminates road safety data that directly monitor Indicator 3.6.1 (death rate due to road traffic injuries) based on official statistics provided by national administrations. Data are disaggregated by, among others, gender, age and type of road user. Data on public transport use (buses, trams and metros) relevant to Indicator 11.2.1 (proportion of the population with convenient access to public transport) are also produced.

For all transport statistics production, relevant methodological guidance is provided through common definitions given in the *Glossary for Transport Statistics*, a joint publication of UNECE, Eurostat and the International Transport Forum.<sup>168</sup>

## Housing

The backbone of the successful implementation of SDG 11 (make cities and human settlements inclusive, safe, resilient and sustainable) is improving the access and availability of housing data. Although UNECE member States and their municipalities have made considerable progress in the production of housing data and statistics, multiple challenges remain.<sup>169</sup>

One of the key issues is the limited capacity of NSOs and other data producers in countries with economies in transition to produce housing statistics that highlight the local dimension of housing problems and shed light on the challenges facing disadvantaged groups with regard to access to decent and affordable housing. NSOs struggle to produce regular and frequent housing data disaggregated according to size and location of settlements, income, ethnicity, religion, migratory status and disability. Detailed housing statistics in many UNECE countries are collected only every 10 years on the occasion of the housing and population census. Availability and access to data about housing problems, such as homelessness and the condition of the housing stock (such as energy efficiency) also remains an issue.

166 A description of Slovenia's experience is available at: <https://statswiki.unece.org/display/CESI9/National+Experiences+in+Monitoring+SDG+9.1.2>.

167 According to the territorial principle, indicators should include all activity that occurs within the national territory of a country regardless where the economic units responsible for the activity are resident. For example, according to the territorial principle, rail transport activities taking place within country X by a railway owned in country Y should be attributed to country X and not country Y. The residency principle is the opposite of the territorial principle: it should include all activity of units that are resident in a country regardless of where the activity occurs.

168 5th edition, 2019, available at: <https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-GQ-19-004>.

169 Described in a presentation available at: [https://www.unece.org/fileadmin/DAM/hlm/Meetings/2020/02\\_19\\_Roundtable\\_Kyrgyzstan/2\\_AK\\_Evidence-based\\_guidelines\\_ENG.pdf](https://www.unece.org/fileadmin/DAM/hlm/Meetings/2020/02_19_Roundtable_Kyrgyzstan/2_AK_Evidence-based_guidelines_ENG.pdf).

It is housing data that shed light on affordability challenges in countries and cities in the region, for example, through the development of housing affordability measures that account for the costs of household operations (for instance, energy costs), the costs of commuting and others.

UNECE supports countries and cities in the UNECE region in the development and implementation of housing policies that are based on the best available data and evidence. In the context of the project *Evidence-based policies for sustainable housing and urban development in selected countries with economies in transition*,<sup>170</sup> carried out in Albania, Belarus, Georgia and Kyrgyzstan, UNECE brings together data producers and users with a view to improving the production of a high quality, detailed and timely housing data.

### **Cities**

With regard to cities, UNECE and the International Telecommunication Union developed Key Performance Indicators for Smart and Sustainable Cities.<sup>171</sup> The indicators were brought under the United for Smart Sustainable Cities initiative,<sup>172</sup> which associates 16 United Nations agencies to achieve SDG 11 and other urban-related SDGs. The initiative serves as the global platform to advocate for public policy and encourage the use of information and communication technology to facilitate and ease the transition to smart sustainable cities. To date, over 150 cities have been assessed against the key performance indicators, including cities in Albania, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Montenegro, Norway and Ukraine among others in the UNECE region (see Box 11 for an example from Voznesensk, Ukraine).

The Key Performance Indicators support cities in evidence-based decision-making, especially establishment of policies aligned with the objectives of the 2030 Agenda and review of progress toward achievement of the SDGs at the local level. Each key performance indicator, of which there are 91, is related to a specific SDG target. They are divided into three dimensions of sustainable development: economy, environment and society and culture. The full list of key performance indicators, along with descriptions of the compilation methodology, is found in the 2017 Collection Methodology for Key Performance Indicators for Smart Sustainable Cities.<sup>173</sup>

The City Prosperity Initiative<sup>174</sup> developed by UN-Habitat can be used to evaluate how policies influence the prosperity of cities and ensure policy objectives at the local level are aligned with the SDGs. The Initiative allows the monitoring of SDGs at the city level and is based on a statistical approach that integrates and measures all indicators of Goal 11 and a selected number of other SDG indicators grouped into six dimensions: productivity; infrastructure development; quality of life; equity and social inclusion; environmental sustainability; and urban governance and legislation. UN-Habitat has supported more than 400 cities across the world in monitoring urban development against the targets of Goal 11.

170 Described at: <https://www.unece.org/housing/unda10.html>.

171 See: <https://www.itu.int/en/ITU-T/ssc/Pages/KPIs-on-SSC.aspx>.

172 Information on the initiative is available at: <https://www.itu.int/en/ITU-T/ssc/united/Pages/default.aspx>.

173 Available at: <https://www.itu.int/en/publications/Documents/tsb/2017-U4SSC-Collection-Methodology/mobile/index.html#p=1>.

174 See: <http://urbandata.unhabitat.org/>.

**Box 11: Smart Sustainable City profile - Voznesensk, Ukraine**

Voznesensk is a medium-sized city in Ukraine, located in the Mykolaiv Oblast. It is the administrative centre of the Voznesensk district. Between 2016 and 2019, UNECE carried out an evaluation of the performance of Voznesensk against the key performance indicators for smart and sustainable cities.<sup>175</sup> Among other findings, the evaluation noted that:

- Productivity needs improvement
- Voznesensk suffers from water losses, high electricity costs, poor solid waste treatment and sewerage coverage and an ageing building stock which requires retrofitting
- The city benefits from abundant water of good quality, though 25 per cent of the population is not connected to the municipal water system and uses its own, sometimes illegal, wells
- Solid waste collection is managed well, though the existing landfill is almost full and attempts to establish separate waste collection have failed
- Student Internet access, enrolment and literacy rates are high, though the number of people with higher education qualifications is low compared to the national average
- Housing costs account for an average of 22 per cent of household income and the quality of the housing stock is poor and hard to maintain
- The city is reasonably safe in terms of violent crime and traffic accidents, but citizens are concerned about robbery, drug dealing and wild dogs.

The evaluation highlighted the ways in which the key performance indicators can be used to measure progress of cities towards smart and sustainable urban development and realization of the 2030 Agenda. It recommended priorities for action at the local level, such as the need to link the city's economic and social development with the use of the local natural resources and agriculture.

**Health**

Finally, in the domain of health statistics the joint UNECE/WHO Protocol on Water and Health is an international agreement aimed at protecting human health and well-being through better water management.<sup>176</sup> The Protocol is the first international agreement adopted specifically to ensure adequate safe drinking water and sanitation for all and to protect water used as a source of drinking water. In many ways, it can be considered a precursor of Goal 6 (ensure access to water and sanitation for all) given its focus on the entire water and sanitation cycle and its inclusion of principles such as universality, horizontality, equity, prevention and safety.

Under the Protocol, Parties collect and evaluate data on their national situations regarding water, sanitation and health. In order to review progress, they make use of common indicators, which cover areas such as access to water and sanitation services; water quality; wastewater treatment; and effective management, protection and use of freshwater resources. Parties to the Protocol are encouraged to provide disaggregated data to capture inequities that might be hidden in official statistics, such as reduced access to drinking water and sanitation in rural areas. They also collect data on the provision of water, sanitation and health services in schools and health-care facilities. Based on these data, national summary reports are prepared and submitted to the three-yearly Meetings of the Parties.

Data collected through the Protocol can be used to support SDG measurement and monitoring by aligning protocol indicators with SDG indicators. Data have already been used in global monitoring programmes for Goal 6; specifically, in the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation and the UN-Water Global Assessment and Analysis of Sanitation and Drinking Water. Box 12 provides an example of how the Protocol supports SDG measurement and monitoring in Portugal.

175 *Smart Sustainable Cities Profile: Voznesensk, Ukraine*, UNECE, 2019 (ECE/HBP/199), available at: [https://www.unece.org/fileadmin/DAM/hlm/documents/Publications/SSC\\_Profile\\_Voznesensk.ENG.pdf](https://www.unece.org/fileadmin/DAM/hlm/documents/Publications/SSC_Profile_Voznesensk.ENG.pdf).

176 An introductory brochure is available at: [http://www.unece.org/fileadmin/DAM/env/water/publications/brochure/Protocol\\_E\\_A4.pdf](http://www.unece.org/fileadmin/DAM/env/water/publications/brochure/Protocol_E_A4.pdf).

### Box 12: Integrating the Protocol on Water and Health and SDGs in Portugal

The Portuguese strategy for target setting under the Protocol on Water and Health is based on national legislation, national strategic plans and SDGs. Where possible, indicators used for measuring progress towards targets set under the Protocol are the same as the ones for the national targets established under the SDGs. For example, the indicator established under article 6.2(d) of the protocol (increasing the level of service coverage through sewerage networks) is aligned with the Portuguese indicators proposed for monitoring SDG target 6.2. The data used for monitoring both the Protocol and SDG indicators is collected by the Portuguese Water and Waste Regulation Authority.

As regards on-site sanitation, in 2016 Portugal added an indicator under article 6.2(d) of the Protocol to measure whether municipalities collect and safely dispose of wastewater from on-site sanitation systems. Although collection and disposal of wastewater by private operators is not covered by the indicator, it nonetheless supports improved management of on-site sanitation systems.

### 3.2.5 Dissemination and communication – Regional responses

As the CES Road Map on Statistics for SDGs notes, assessing progress toward the SDGs involves stakeholders from both statistical systems and the world of policymaking, making clear dissemination and communication both challenging and essential. Statisticians may not be accustomed to communicating outside of traditional statistical domains and policymakers may not be aware of the unique characteristics of official statistics. Both sides must therefore agree upon communication principles. This should begin with acknowledging the NSO as an independent provider of statistics and that not all available statistics are fit for purpose for measurement and monitoring, especially when non-official statistics from non-traditional sources must be used. Policymakers need to understand that data produced by NSOs and NSSs have undergone rigorous quality review, are independent and are comparable over time and between countries. When data from non-traditional sources must be used in measurement and monitoring, it is essential to clearly communicate their strengths and weaknesses.

The CES Road Map stresses that responsibility for dissemination and communication in relation to measurement and monitoring should rest with NSOs. It is their role to decide which statistics to disseminate and communicate, to whom and how. To this end, the Road Map itself should be a communication tool, as it helps explain the challenges and importance of measurement and monitoring and the role of official statistics and NSOs in it. A generic presentation on the Road Map has been prepared for this purpose.<sup>177</sup>

Given the volume of statistics involved, SDG measurement and monitoring requires modern and efficient dissemination and communication approaches. A national reporting platform (NRP) is one such approach. NRPs are integrated systems for disseminating SDG statistics comprising: (i) a website (or portal) that facilitates data uploading and downloading; (ii) one or more databases for organizing and storing data; and (iii) associated IT infrastructure to gather, host and secure the statistics. A properly designed NRP:

- Provides a convenient and simple-to-use portal through which statistics and related metadata required for measurement and monitoring can be both collected (uploaded) and disseminated (downloaded)
- Makes time-series of SDG statistics readily available on a timely basis and in a format suitable for electronic processing to any user with on-line access
- Facilitates data flows between countries and regional and global organizations involved in SDG measurement and monitoring and reporting (see more on this below)
- Avoids confusion by ensuring consistency with statistics published elsewhere (for example, in a database maintained by a member of the NSS other than the NSO)
- Is regularly maintained and updated
- Enhances statistical quality (for example, by permitting gaps in statistics to be identified).

177 Available at: <https://statswiki.unece.org/download/attachments/129174652/CES%20SG%20Statistics%20for%20SDGs%20-%20Generic%20Presentation.pptx?version=1&modificationDate=1520607101810&api=v2>.



To support NSOs in developing such systems, a UNECE Task Force on National Reporting Platforms<sup>178</sup> prepared a practical guide to building a platform to support measurement and monitoring. Developing an NRP requires resources and time, especially when built from scratch. The process may be challenging for NSOs with little experience in the area. For this reason, the Task Force recommends that countries begin with simple, low-cost platforms that draw upon existing dissemination systems and learn from other countries' experience. According to a survey of country progress in measurement and monitoring,<sup>179</sup> around 46 of the 56 countries in the UNECE region had developed or were building platforms to disseminate and communicate SDG indicators as of the end of 2019.

In order to facilitate sharing of SDG statistics regionally and globally, it is important the countries adopt global data sharing standards in whatever dissemination approach they take (be it a highly structured NRP or something less formal). As the CES Road Map notes, the SDMX standard is a useful resource in this regard. SDMX is a set of technical standards and content-oriented guidelines, together with an IT architecture and tools, used for the exchange and sharing of statistical data and metadata. SDMX is the basis for data sharing that underlies the United Nations Country Data database, which many countries already use to share their official statistics at the global level, and which could be adapted for use in SDG measurement and monitoring.

In addition to its efforts to support member States in developing national dissemination and communication approaches, UNECE has developed a regional platform, launched in 2020, that comprises three elements:

- A knowledge hub on statistics for SDGs<sup>180</sup>
- A dashboard of SDG indicators for the region<sup>181</sup>
- A database of SDG indicators.<sup>182</sup>

The objectives of the regional platform are to facilitate communications related to SDG measurement and monitoring in the region, provide ready access to up-to-date indicators and disseminate data and metadata. The knowledge hub and database are aimed primarily at statisticians and other professionals interested in methodologies, detailed indicators and analyses. The dashboard targets the public and policymakers, providing them with a simple means of comparing their country against its regional peers.

UNECE also has considerable experience in facilitating the coordinated dissemination of statistics through its efforts to develop a Shared Environmental Information System (see Box 13).<sup>183</sup> This system enables countries across the region to connect databases and make environmental statistics more accessible, facilitating their use for, among others, SDG measurement and monitoring.

In addition, the Aarhus Convention promotes public rights in environmental matters with regard to: (i) access to environmental information; (ii) public participation in environmental decision-making; and (iii) access to justice in environmental matters. It defines procedures and standards that can be applied to a wide range of environmental matters. Thus, its implementation supports governments in the pursuit of numerous commitments, including those related to SDGs. The access-to-information pillar covers both the obligation of public authorities to respond to requests for environmental information and the obligation to collect and disseminate environmental information to the public. Public authorities are, with very few exceptions, to collect, maintain and disseminate various types of environmental information to the public. Environmental information is to be made available in electronic databases which can easily be accessed.

178 Information on the Task Force is available at: <https://statswiki.unece.org/display/SFSDG/Task+Force+on+National+Reporting+Platforms>.

179 Results of the survey are available at: <https://statswiki.unece.org/display/SFSDG/Summary+of+Progress+in+UNECE+countries>.

180 See: <https://w3.unece.org/sdghub/>.

181 See: <https://w3.unece.org/sdg/>.

182 Available at: <https://w3.unece.org/PXWeb/en/>.

183 For information, see: <https://www.unece.org/environmental-policy/environmental-monitoring-and-assessment/areas-of-work/shared-environmental-information-system.html>.

Finally, the Protocol on Pollutant Release and Transfer Registers (PRTR)<sup>184</sup> to the Aarhus Convention requires that countries establish PRTRs, which are databases of releases and transfers of a broad range of pollutants from industrial facilities. These registers have proven to be an effective and relatively low cost means of gathering environmental information from operators and industry and putting it in the public domain, thereby also promoting public participation in environmental matters.<sup>185</sup> Box 14 discusses the ways in which the Aarhus Convention and the PRTR Protocol support SDG measurement and monitoring further.

### Box 13: The Shared Environmental Information System

The Shared Environmental Information System (SEIS) began as an initiative of the European Commission but was later adopted by Ministers of Environment at the Seventh Environment for Europe Ministerial Conference (Astana, 2011), when they decided to develop SEIS across the pan-European region to connect existing databases and make data more accessible.

SEIS facilitates regular environmental assessments and reporting. It links existing data and information flows relevant for national authorities in their monitoring and assessment activities by means of information and communication technologies. It creates online systems that make information available to others for multiple purposes, without a need to make duplicates. According to the SEIS principles information should be:

- Managed as close as possible to its source.
- Collected once and shared with others for many purposes.
- Readily available to easily fulfil reporting obligations.
- Easily accessible to all users.
- Accessible to enable comparisons at the appropriate geographical scale and the participation of citizens.
- Fully available to the general public and at national level in the relevant national language(s).
- Supported through common, free, open software standards.

SEIS includes a network of public information providers who share their environmental data and information. SEIS helps simplify, streamline and modernize existing systems and processes. It is a decentralized yet integrated system that improves the quality, availability, accessibility and understanding of environmental information. A functional SEIS should be structured around three pillars: content (data), (technical) infrastructure and cooperation.<sup>186</sup>

### 3.2.6 Financial and human resources – Regional responses

Partly in recognition of the challenges of measurement and monitoring, the Conference of European Statisticians adopted a new approach to statistical capacity-building in 2018<sup>187</sup> in line with the Capacity Development 4.0 initiative of PARIS21 (see section 3.1.7). In the past, UNECE capacity-building was carried out mainly through training workshops, which placed the focus on people rather than organizations. In view of the challenges of measurement and monitoring and other issues, the need for a more holistic approach was identified on the grounds that capacity gaps often exist in terms of organizational and management culture. The new approach aims to continue building individuals' capacities across seven dimensions (Figure 2) while also enhancing organizational capacity for, among others, risk management and planning. In addition to supporting SDG measurement and monitoring, the Conference of European Statisticians sees a need for organizational capacity-building with respect to:

184 For information on the Protocol, see: <https://www.unece.org/env/pp/prtr.html>.

185 See more on public participation at: <https://www.unece.org/env/pp/welcome.html>.

186 See "What is SEIS?" at: <https://www.eea.europa.eu/about-us/what/shared-environmental-information-system-1>.

187 Available at: [https://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/2018/CES\\_10\\_rev1\\_Statistical\\_capacity\\_development\\_strategy\\_rev.pdf](https://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/2018/CES_10_rev1_Statistical_capacity_development_strategy_rev.pdf).

- Geospatial information management
- Population and housing censuses, migration and gender statistics
- Environmental statistics and environmental-economic accounting
- Modernizing official statistics
- Core economic statistics and the impacts of globalization.
- The CES Road Map on Statistics for Sustainable Development recommends the assessment of capacity-building needs at the country level. To support this, a matrix on capacity development has been prepared by a Task Team on Capacity Development.<sup>188</sup> This is a practical tool in the form of a spreadsheet designed to match the needs of countries with providers of capacity-building activities. It covers capacity-building not just at the level of individual staff members and statistical domains but also in terms of organizational governance and management (legal frameworks, institutional structures, planning, user relations, etc.) and statistical infrastructure (methods, information technology, standards, etc.). After an assessment of needs, the next step is to establish priorities for capacity-building, as available resources will not be enough to cover all needs. This will keep capacity-building focused and account for national circumstances.

#### Box 14: The Aarhus Convention and SDG measurement and monitoring

Due to their cross-cutting nature, the Aarhus Convention and the PRTR Protocol are applicable to a range of sectors (environmental protection, urban development, tourism, energy and green economy) and are, therefore, relevant for achieving all SDGs; in particular, however, they are relevant to SDG 16 (promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels). Reporting on the environmental dimension of SDG 16 is a challenge because few quantitative data are collected specifically for that purpose.

States Parties to the Convention and Protocol must submit national implementation reports every third or fourth year in which they report progress on legislative, institutional and practical measures to enhance public access to information, participation and access to justice.<sup>189</sup> The reports provide information regarding legislative frameworks and their enforcement and application that is relevant to:

- Target 16.3 (promote the rule of law at the national and international levels and ensure equal access to justice for all)
- Target 16.7 (ensure responsive, inclusive, participatory and representative decision-making at all levels)
- Target 16.10 (ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements).

In addition, PRTRs, in particular when they are linked with other data sources (for example, in the health, energy or planning domains), can be used to measure achievement of a number of other SDGs, such as goals 7 (affordable and clean energy), 9 (industry, innovation and infrastructure), 11 (sustainable cities and communities), 12 (responsible consumption and production) and 13 (climate action).

Though implementation of the Convention and Protocol have potential to help countries address data gaps related to SDG measuring and monitoring, officials are often not aware of this potential. Consequently, the measures required to exploit it are often not implemented (for example, adapting data collection activities, creation of software tools and elaboration of cooperation mechanisms between institutions). For example, PRTRs can be readily modified to permit collection of data on resource use and energy consumption. This is done by several countries, but not all Parties, as it is not required under the Protocol. Examples of the use of PRTR data for measuring and monitoring progress towards SDGs have been described in some detail in the OECD Framework on the Role of Pollutant Release and Transfer Registers (PRTRs) in Global Sustainability Analyses.<sup>190</sup>

188 Available at: <https://statswiki.unece.org/download/attachments/127666441/CAP%20Matrix%20-%20updated%20June%202019.xlsx?version=1&modificationDate=1561102125386&api=v2>.

189 Information on the reporting mechanism is available at: <https://www.unece.org/env/pp/reports.html>.

190 Available at: <https://one.oecd.org/document/ENV/JM/MONO%282017%297/en/pdf>.

### 3.3 NATIONAL RESPONSES

To gain a deeper understanding of the challenges faced by UNECE member States in measurement and monitoring progress towards the SDGs, a survey was carried out in early 2020. The survey was administered using an online data-collection platform. Respondents were given the choice of completing the survey using the online platform or an offline document version of the questionnaire. The survey covered:

- The role played by NSOs in measuring and monitoring the SDGs
- The approach taken to coordination and collaboration among stakeholders
- Challenges related to:
  - Technical and/or managerial capacity in statistical systems and processes
  - Modernization of statistical systems and processes
  - Social statistics
  - Economic statistics
  - National accounts
  - Public-sector statistics
  - Environmental and natural resource statistics
  - Dissemination processes and systems
  - Relationships between NSOs and third parties involved in data collection
  - Financial and human resources.

In total, 51 of 56 UNECE member States responded to the survey. In all cases, the responding individual was a representative of the NSO.

**Figure 2:** The seven dimensions of statistical capabilities



Source: UNECE Statistical Capacity Development Strategy.<sup>191</sup>

191 Available at: [https://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/2018/CES\\_10\\_rev1\\_Statistical\\_capacity\\_development\\_strategy\\_rev.pdf](https://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/2018/CES_10_rev1_Statistical_capacity_development_strategy_rev.pdf).



### 3.3.1 Defining and supporting the role of National Statistical Offices – National responses

All 51 responding member States indicated that their NSO plays a role in measuring and monitoring progress toward the SDGs. Most member States (40 of 51) reported that the NSO had full responsibility for SDG measurement and monitoring, whether using data exclusively produced by the NSO or a combination of data produced by it and other national entities. The other 11 member States reported their NSO having partial responsibility for measurement and monitoring for those indicators that can be compiled using its own data, with some other agency (for example, a ministry of sustainable development or the prime minister's office) having responsibility for the remaining indicators.

### 3.3.2 Coordination and collaboration – National responses

The strong role member States reported for NSOs in SDG measurement and monitoring was reflected in the equally strong role reported for them in ensuring coordination and collaboration among the stakeholders involved; 39 of 51 member States named the NSO as having lead responsibility for ensuring this coordination and collaboration. NSOs appear to be on solid legal ground in carrying out this role. More than two thirds (35 of 51) of member States reported the NSO having a legal mandate for this role stemming from its general legal mandate to coordinate the overall NSS (23 of 51) or from a specific mandate for coordination set out in a national sustainable development law or policy (8 of 51). Only 5 of 51 reported that the NSO role stemmed from a general, *de facto*, mandate for coordination. A small number did not report the basis on which the NSO carries out this role.

When asked to describe any special efforts taken to ensure coordination and collaboration among the stakeholders involved in measurement and monitoring (such as creation of data sharing platforms, national steering committees or staff exchanges), most UNECE member States reported relevant initiatives, including those listed below:

- In **Belarus**, a Council for Sustainable Development has been established with the NSO (Belstat) as a member and head of the sub-group charged with coordination of indicators. To facilitate its activities, Belstat has created a section devoted to the SDGs on its official website,<sup>192</sup> prepared a statistical road map for the compilation of the SDGs (based on the CES Road Map) and formed a working group on the use of remote-sensing technologies for SDG measurement and monitoring.
- In **Ireland**, the NSO has prepared a statistical road map and created an SDG indicators data hub.<sup>193</sup>
- **Bosnia and Herzegovina** has made use of the UNDP Rapid Integrated Assessment tool to facilitate the mainstreaming of SDGs into national and local plans.
- In **Canada**, a member of the NSO is co-located within the policy unit of the country's employment and social development ministry responsible for coordination of the SDGs.
- **Denmark** is establishing a partnership for SDG data comprising governmental agencies, civil society, academia, the private sector and other relevant stakeholders where information on data will be exchanged.
- In **Israel**, an inter-governmental committee was established for coordination and sharing of SDG-related data. Thanks to its work, Israel was able to develop new SDG indicators related to policy and legislation.
- **Kazakhstan** has created an intergovernmental coordination committee with five working groups chaired by the Deputy Prime Minister, with the Ministry of National Economy as the coordinating body.
- In **Kyrgyzstan**, the NSO is a member of five working groups created under the Vice-President to coordinate the national response to the 2030 Agenda; the NSO leads the working group on monitoring and evaluation.
- Interdepartmental working groups and committees of similar sorts have been created as well in Albania, Armenia, Azerbaijan, Croatia, Czechia, Georgia, North Macedonia, Russian Federation, Slovenia, Tajikistan and Turkey.
- In the **Netherlands**, the NSO works with municipalities to improve the quality and timeliness of data for SDG measurement and monitoring through the Urban Data Centres initiative (Box 15).<sup>194</sup>

192 See: <https://www.belstat.gov.by/en/ofitsialnaya-statistika/sustainable-development-goals/>.

193 See: <https://irelandsdg.geohive.ie/>.

194 Full information on the initiative is available at: <https://www.cbs.nl/en-gb/dossier/regional-statistics/cbs-urban-data-centres-substance-and-added-value>.

### Box 15: Urban Data Centres in the Netherlands

Urban Data Centres emerged as a result of collaboration between Statistics Netherlands, which produces all official statistics in the country, and municipalities. The objectives of the centres are to broaden, deepen and improve data at local level by combining the knowledge, data and expertise of Statistics Netherlands and municipalities.

In order to deepen its interactions with citizens and adapt its services to users' needs, Statistics Netherlands took the initiative to transform its data production and collection systems to better focus on needs for policymaking at regional and local levels. The idea is that this will result in a broader and better basis for decision-making at municipal level and provide a solid basis for municipal forecasts. Since its start in 2016, the Urban Data Centres initiative has led to better understanding of cities and towns; more evidence-based municipal decision-making; improved potential for savings in city budgets; and a greater focus on harmonized, standardized and benchmarked local, subnational, national and international data.

### 3.3.3 Modernizing statistical processes and systems – National responses

In general, member States reported facing considerable measurement and monitoring challenges with respect to the management of statistical processes and systems. The greatest challenge in this regard (reported by 29 of 51 member States) was the lack of technical and managerial capacity. The most common concerns (reported by about half of these 29 member States) were:

- The lack of statistical expertise
- The need for improved information technologies (for example, data reporting platforms)
- The need for improved external management (for example, better coordination with external stakeholders).

The needs to improve communications and internal management (for example, management of survey operations) were of concern for about a quarter of the 29 member States reporting concerns about management of statistical processes and systems.

Many member States reported undertaking specific activities to address the lack of technical and managerial capacity, including:

- **Belarus** has developed a national SDG reporting platform<sup>195</sup> with financial support from UNICEF and UNDP. The platform provides on-line access to both national and global SDG indicators where they are available. It also includes a link to Belarus's roadmap for SDG statistics,<sup>196</sup> which was developed following the CES Road Map. Similar platforms have also been created in Albania,<sup>197</sup> Armenia,<sup>198</sup> Bulgaria,<sup>199</sup> Croatia,<sup>200</sup> France,<sup>201</sup> Georgia,<sup>202</sup> Hungary,<sup>203</sup> Kyrgyzstan,<sup>204</sup> Poland<sup>205</sup> (see Box 16) and Slovakia.<sup>206</sup>
- The national audit office of **Bosnia and Herzegovina** conducted a performance audit on the readiness of national institutions to respond to the 2030 Agenda.

195 See: <http://sdgplatform.belstat.gov.by/en/sites/belstatfront/home.html>.

196 Available at: [https://www.belstat.gov.by/upload-belstat/upload-belstat-image/SDG/Road\\_map\\_ru.pdf](https://www.belstat.gov.by/upload-belstat/upload-belstat-image/SDG/Road_map_ru.pdf).

197 See: <http://instat.gov.al/en/sdgs/>.

198 See: <https://sdg.armstat.am/>.

199 Available at: <https://monitorstat.nsi.bg/en/Strategy?GroupId=b2f70ffc-d61f-4caf-99b6-2cb39c3dbf19>.

200 See: <https://croatianbureauofstatistics.github.io/sdg-indicators/>.

201 See: <https://www.insee.fr/fr/statistiques/2654964>.

202 See: <http://sdg.gov.ge/intro>.

203 See: <http://www.ksh.hu/sdg>.

204 See: <https://sustainabledevelopment-kyrgyzstan.github.io/en/>.

205 See: <https://sdg.gov.pl/en/>.

206 See: <https://agenda2030.statistics.sk/Agenda2030/en/home/>.

- In **Spain and Turkey**,<sup>207</sup> plans to address SDG measurement and monitoring have been integrated into the latest national statistical plans.
- The National Statistical Committee of **Kyrgyzstan** has undertaken several capacity-building exercises, including technical workshops on SDMX implementation and national reporting platforms for SDG data and metadata.

#### Box 16: Development of Poland's national SDG reporting platform

In order to increase its technical capacity for SDG measurement and monitoring, Statistics Poland worked with the United States-based Centre for Open Data Enterprise<sup>208</sup> and the United Kingdom's Office for National Statistics to modernize its national SDG reporting platform, which it relaunched at the beginning of 2019. The changes introduced to the platform addressed the need for greater coherence with international reporting standards to facilitate data exchange between the country and international agencies. The new platform was created using open-source code made available by the Centre for Open Data Enterprise and the Office for National Statistics, suitably adapted for use in the Polish context. The code for the Polish reporting platform has been published online and is also open for use by any country.<sup>209</sup>

The need for modernization of statistical systems and processes<sup>210</sup> was the next most reported challenge with respect to management of statistical processes and systems, with 28 member States citing this as a concern. The modernization challenges most often noted by these member States were:

- The need to implement open-data platforms
- The need for improved data-sharing protocols and systems
- The need to modify statistical processes and systems to permit use of big data and other modern data sources.

All these challenges were reported by one half to two thirds of the 28 member States citing modernization as a challenge. Modernization of governance and institutional frameworks, statistical standards and management systems were noted as challenges by about one third of the 28 countries. Actions taken in response included:

- **Albania, Armenia, Belarus, Greece, Hungary, Kazakhstan and Ukraine** all reported implementing (or planning to implement) GSBPM in response to the need to modernize statistical management processes.
- In **Bosnia and Herzegovina**, there is a plan to use modern data visualization tools – including one developed for the country's national population census<sup>211</sup> – to present SDG indicators.
- **France** plans to use cash-register data to replace price surveys for the calculation of its consumer price index and is exploring the possibility of using mobile phone data for the development of indicators.
- In **Uzbekistan**, a new national data platform has been developed that has the potential to serve as a model for a reporting platform for the SDGs.<sup>212</sup>

207 For Turkey, see the *Official Statistics Programme 2017–2021*, available at: [http://www.officialstatistics.gov.tr/media/files/2018/07/05/Official\\_Statistical\\_Programme\\_2017-2021.pdf](http://www.officialstatistics.gov.tr/media/files/2018/07/05/Official_Statistical_Programme_2017-2021.pdf).

208 See: <https://www.opendataenterprise.org/>.

209 Available at: <https://github.com/statisticspoland/sdg-indicators-pl>.

210 Modernization was defined in the survey questionnaire as the introduction of new systems and processes into statistical activities aimed at promoting use of new sources of data, new methods of collection, new approaches to dissemination and new models of management)

211 See: <https://popis.gov.ba/popis2013/mapa/?lang=eng>.

212 See: <https://nsdp.stat.uz/>.

About one quarter (14) of responding member States noted concerns with relationships between NSOs and third parties involved in measurement and monitoring – such as the quality of formal and informal partnerships, data-sharing agreements, staff interchanges, workshops and committees. The most common concerns with these relationships (reported by about one third of the 14 countries) were their ad hoc nature and their lack of practical impact. For example:

- **Malta** reported that continuous efforts are made at all levels to enhance collaboration with stakeholders. The Maltese NSO provides technical support to help stakeholders with their own data systems.
- In the **Republic of Moldova**, statistical literacy training has been organized with key data users.
- In accordance with its national strategy for sustainable development,<sup>213</sup> **Romania** is developing an action plan with clear roles and responsibilities for all actors involved with a grant from the European Union.

### 3.3.4 Strengthening basic statistics and accounts – National responses

Turning now to concerns related to the quality of basic statistics and accounts, the greatest concerns were expressed by member States with respect to environmental and natural resource statistics, with 23 expressing concern with these. Half of these 23 countries noted that environmental and natural resource statistics cannot be adequately disaggregated to represent sub-populations – particularly with respect to gender – and that they do not cover variables relevant to SDG measurement and monitoring. Topics noted as requiring improved data included marine resources, sustainable production and consumption, climate change, forests, desertification, land degradation, biodiversity, food waste and pollution. Less common were concerns about the accuracy, coherence, frequency and timeliness of environmental and resources statistics. For example:

- To address the need for improved environmental and natural resource statistics, discussions are underway in **Germany** to introduce a system of accounts for ecosystems.
- Thanks to cooperation with the Ministry of Maritime Economy and Inland Navigation, the NSO of **Poland** developed the capacity to report SDG Indicator 14.4.1 on the proportion of fish stocks within biologically sustainable levels.
- The NSO of **Portugal** is working to calculate the country's material footprint (Indicator 8.4.1) and food waste and loss indexes (12.3.1).
- The NSO of **Slovenia** is revising and extending its environmental-economic accounts, in particular for air emission accounts and forestry accounts, and undertaking a pilot project on food waste statistics.
- An environmental protection expenditure account is under development in **Ukraine**.
- In the **United Kingdom**, work is going on to achieve the goals outlined in the country's 2020 roadmap for the development of environmental-economic accounts.<sup>214</sup>
- With the support of the European Environment Agency, **Armenia** has compiled water accounts and has begun work on air accounts and a national e-waste inventory.

Concerns with the quality of social statistics were the next most reported by member States, with 20 of 51 citing this as an area of concern. As in the case of the environment and natural resources, their main concern (reported by 15 of the 19 countries) was that social statistics cannot be adequately disaggregated to meet SDG measurement and monitoring needs. Lack of data on certain social variables was also noted by several countries; for instance, gaps were noted with respect to poverty, immigration, persons with disabilities and violence.

- The NSO of **Albania** noted publication of its first data on income and living conditions<sup>215</sup> and modification of its information and communication technology survey to permit compilation of SDG Indicator 4.4.1 on information and communications technology skills amongst youth and adults.

213 Available at: <http://dezvoltaredurabila.gov.ro/web/about/>.

214 See: <https://www.ons.gov.uk/economy/environmentalaccounts/methodologies/uknaturalcapitalinterimreviewandrevised2020roadmap#annex-2-summary-of-outputs-to-deliver-by-2020>.

215 See: <http://instat.gov.al/media/6544/income-and-living-conditions-in-albania-2017-2018.pdf>.



- The NSO of **Armenia**, with support from UNICEF and UNDP, has developed a system of national indicators built upon the SDGs, which make possible the monitoring of services provided to children and assessment of their impact from the perspective of elimination of violence against children and ensuring equal rights for all children.
- In **France**, efforts were noted to improve social statistics by preparing an online portal for geographic visualization of statistics<sup>216</sup> and by adding a new module to the victimization survey that will permit improved measures on discrimination.
- Thanks to cooperation with the Ministry of Health, the NSO of **Poland** has developed data for SDG Indicator 3.3.1 on the number of new HIV infections.
- The NSO of **Slovenia** has conducted, among others, its first analysis of expenditure, poverty and social exclusion, as well as publishing its second set of data on activity limitations due to health problems.
- In **North Macedonia**, the Multiple Indicator Cluster Survey has been established and a gender-based violence survey will be conducted in 2020.

Concerns related to economic statistics were reported by about one quarter (13) of member States. Again, the most common concern was that economic statistics cannot be adequately disaggregated to meet SDG measurement and monitoring needs, a concern reported by 10 countries. Failure to cover key economic sectors and measure relevant variables were reported by about one half of the 13 countries. For example:

- In both **Kazakhstan** and **Malta**, efforts were noted to increase the use of administrative data in order to improve the quality of economic statistics.
- The NSO of **Poland** has cooperated with the National Bank of Poland to report data for SDG Indicator 9.3.2 on the proportion of small-scale industries with a loan or line of credit.
- **Uzbekistan** is working with the World Bank on the development of a new national statistics plan that will include provisions for the improvement of economic statistics.
- The NSO of **Slovenia** is undertaking a variety of efforts to improve the quality of economic statistics, including new data on passenger transport and the use of information and communication technologies.

Fewer than one quarter of respondents reported concerns with public-sector or national accounts statistics (9 and 6 member States, respectively). The main concern in both cases was that the data are not sufficiently detailed to meet measurement and monitoring needs.

The only action of significance reported regarding the improvement of national accounts statistics was the updating of the national accounts in Tajikistan to bring them into conformity with the 2008 System of National Accounts standard. No actions regarding the improvement of public-sector statistics were reported.

### 3.3.5 Dissemination and communication – National responses

Concerns regarding dissemination processes and systems – such as data reporting platforms, metadata standards and communications protocols – were reported by 19 of 51 member States, with the most common concern (reported by just less than half of the 19) being that existing dissemination processes and systems do not cover all the variables required for measurement and monitoring. About one third of the 19 noted that dissemination processes and systems do not provide users with easy access to data in electronic format.

The main action taken by member States in response to the need to improve dissemination processes and systems has been the development of national SDG reporting platforms, several of which have been mentioned in the discussion above. In total, 46 countries in the region have developed such platforms according to UNECE.<sup>217</sup>

216 See: <https://www.insee.fr/fr/information/3544265>.

217 See: <https://statswiki.unece.org/display/SFSDG/Summary+of+Progress+in+UNECE+countries>.

### 3.3.6 Financial and human resources – National responses

Regarding the need for increased financial and human resources, 24 member States noted financial resources as a challenge, while 23 noted the same regarding human resources. In both cases, a strong majority of member States reporting challenges felt the simple insufficiency of financial and/or human resources was the major challenge. One quarter of the 24 member States noted reliance on funding from international donors as a concern. About one quarter of the 23 member States reporting concerns about human resources felt that their staff were not adequately trained. Countries reported relatively few initiatives related to improving human and financial resources and most of those reported involved increased reliance on international agencies. Examples given included:

- **Kyrgyzstan and Tajikistan** both reported plans to take part in a project sponsored by UNSD and the United Kingdom Department for International Development to make SDG data open to the widest possible audience.<sup>218</sup> The project is expected to improve both the number of indicators available and make them more accessible through development of national reporting platforms.
- **Uzbekistan** reported that it will prepare a Multiple Indicator Cluster Survey in 2020 and the first population census in 2022 with the support of UNICEF and the United Nations Population Fund.

218 Information on the project is available at: <https://unstats.un.org/capacity-development/unsd-dfid/>.







# CHAPTER 4

## CONCLUSIONS AND POLICY RECOMMENDATIONS

This section presents the conclusions and recommendations drawn from the preceding review of challenges in SDG measurement and monitoring in the UNECE region. The conclusions and recommendations are split into two groups, one responding to the top concerns of member States as revealed in the survey discussed in section 3.3 and the other responding to concerns that, while not among countries' top priorities, can nonetheless be seen to be serious challenges to effective measurement and monitoring.

### 4.1 CONCLUSIONS AND RECOMMENDATIONS RELATED TO MEMBER STATES' TOP CONCERNS

The results of the member State survey undertaken in support of this publication (see section 3.3) indicate that UNECE member States' most important challenges related to SDG measurement and monitoring<sup>219</sup> are:

- Difficulties coordinating and collaborating among stakeholders<sup>220</sup>
- Inadequacy of human and financial resources
- Gaps in required data
- Difficulties in disaggregating statistics to reveal trends in specific sub-populations.

The above were mentioned by, respectively, 25, 18, 12 and 12 of the 51 member States that responded to the survey.

#### 4.1.1 Coordination and collaboration

Looking more closely at the countries that mentioned coordination and collaboration as a challenge, there appears to be a difference between those in which the NSO has full responsibility or takes the lead for SDG measurement and monitoring, and those where the NSO has only partial responsibility. Of the 39 countries in which the NSO had full responsibility, only 43.5 per cent (17) reported coordination and collaboration challenges. Six out of nine countries in which the NSO had partial SDG measurement and monitoring responsibility reported challenges with respect to coordination and collaboration. The conclusion, in this context, could be that a leading role in measuring and monitoring SDGs should be assigned to an agency (either NSO or other agency) having a leading role in measuring and monitoring SDGs, and this role should be supported by a clear mandate and corresponding provisions in the legal acts.

Not surprisingly, there is a clear link between challenges with respect to coordination and collaboration and failure to name any agency as lead on coordination and collaboration. In the handful of countries (five in total) in which no agency was named as lead, all but one (80 per cent) reported challenges with respect to coordination and collaboration.

From the above, two things may be concluded. First, naming some agency – whether it is the NSO (as called for in the CES Road Map) or another agency – as lead on coordination and collaboration is essential. Coordination and collaboration do not happen on their own; they require dedicated effort and clear mandate. Second, it does appear to be easier to succeed in coordination and collaboration in cases where the NSO has full responsibility for SDG measurement and monitoring, though this is not a guarantee of success if the legal mandate and Government support is not place.

219 At the end of the survey, respondents were asked to rank the three most significant challenges in measuring and monitoring progress toward the SDGs.

220 Stakeholders were defined in the survey to include all entities (public, private or not-for-profit) within or outside of government involved in collecting or compiling the data required for measuring and monitoring progress toward the SDGs.



**Recommendation #1** – Countries should ensure an appropriate agency is assigned to the lead role for ensuring coordination and collaboration in SDG measurement and monitoring. Ideally, this should be the NSO, as called for in the UNECE Road Map on Statistics for Sustainable Development Goals, though another relevant agency could take on this role if the NSO cannot do so alone. In other cases, coordination and collaboration will be more difficult (due to the larger number of stakeholders involved) and, therefore, the effort required to succeed in it should be expected to be greater.

#### 4.1.2 Financial and human resources

##### ***Adequate resources are needed to modernize and build technical and managerial capacity***

Turning to financial and human resources, there is a clear (and expected) correlation between resource adequacy and NSO needs for increased technical and/or managerial capacity and modernization. Both technical and managerial capacity and modernization require considerable financial and human resources, so one expects to see challenges with respect to the latter correlated with challenges related to the former. This is, indeed, what the survey results show. Of the 16 countries that reported challenges with both financial and human resources, 13 (81 per cent) also noted the need for increased technical and managerial capacity and modernization.

At the same time, adequate human and financial resources do not mean that the need for increased technical and managerial capacity or modernization disappear. Of the 20 countries that reported adequacy of both human and financial resources, 8 reported the need for increased technical and managerial capacity at the NSO and 7 reported the need for the NSO to modernize.

**Recommendation #2** – Countries should ensure adequate human and financial resources are available for SDG measurement and monitoring. They should recognize that improved technical and managerial capacity and modernization of NSOs and NSSs will be particularly challenging in the absence of sufficient resources. At the same time, inadequate human and financial resources are not the only impediments to improved technical and managerial capacity and modernization. In countries where human and financial resources are adequate, special attention should be paid to determining and removing non-resource impediments to improved technical and managerial capacity and modernization.

##### ***NSOs cannot meet the measurement and monitoring challenge on their own***

The survey results also reveal that all 12 countries for which data gaps were a concern had NSOs with full measurement and monitoring responsibilities, though 26 other countries where NSOs had full responsibility did not report gaps. This outcome could be explained on the grounds that some NSOs may be having difficulty reaching beyond their own databases to obtain the data they require for measurement and monitoring from other organizations. This is consistent with the finding that cooperation and collaboration is the greatest challenge to measurement and monitoring in the UNECE region.

**Recommendation #3** – Countries in which overall data availability for SDG measurement and monitoring is known to be low and in which mechanisms for assuring inter-agency coordination and collaboration are weak should devote additional efforts to coordination and collaboration to ensure the NSO can access all available data for measurement and monitoring, for example, by creating inter-institutional working groups.

Another arguably unpredictable result revealed by the survey is that all 12 countries that reported concerns with disaggregating statistics to reveal trends in specific sub-populations were countries in which the NSO had full responsibility for measurement and monitoring. Given that NSOs are specialized in the survey and analytical methods required to permit disaggregation, it might have been expected that countries where NSO were fully in charge of measurement and monitoring would face fewer challenges on this front. This does not seem to be the case, however. Again, a plausible explanation for this is the fact that no NSO can possibly compile all the data required for measurement and monitoring. It is again worrying, though, since it is another indication that NSOs have difficulty obtaining the required data for measurement and monitoring from others.

**Recommendation #4** – Countries in which the NSO has full responsibility for measurement and monitoring must ensure the NSO has access to all data required to disaggregate statistics to reveal trends in specific sub-populations. This may require that additional effort be devoted to improving NSO access to administrative and non-traditional data sources, harmonizing definitions, redesigning surveys to encompass disaggregation and promoting interoperability across different nationwide information systems within e-government and open data frameworks.

## 4.2 CONCLUSIONS AND RECOMMENDATIONS RELATED TO OTHER CHALLENGES

### *The range of global and regional responses is impressive*

The first conclusion that follows from the review of global and regional responses to SDG measurement and monitoring challenges in sections 3.1 and 3.2 is simply that these responses are impressive in terms of their breadth, depth and quality. Unlike in the case of the Millennium Development Goals, when measurement and monitoring were an afterthought and, as a result, reporting on progress against the goals was not as robust as it should have been, the national, regional and global statistical communities have all risen admirably to the challenge of measurement and monitoring in the case of the Sustainable Development Goals. This is not to say that the situation is perfect. As the member State survey revealed clearly, challenges remain on many fronts. Nonetheless, NSOs and NSSs are benefiting from a far greater level of support from regional and global bodies in the context of the 2030 Agenda than they did for the Millennium Development Goals. This bodes well not just for the realization of the 2030 Agenda's ambitions, but also for the future of cooperation and mutual support between the policy agencies of governments and their statistical counterparts.

**Recommendation #5** – All NSOs and other members of NSSs in the UNECE region should familiarize themselves with the range of supports for SDG measurement and monitoring available to them from UNECE and other regional and global organizations. This report covers the most important of these, but it should only be a starting point. Far more initiatives, programmes and policies exist than could be covered here. Thus, NSOs and other members of NSSs are encouraged to explore on their own the supports that are available from regional and global organizations.

**Recommendation #6** – UNECE should encourage all regional and global organizations with initiatives, programmes or policies in place that, whether explicitly or indirectly, support SDG measurement and monitoring to ensure their efforts are well-known among NSOs and NSS members in all countries of the UNECE region (and, indeed, all other regions). A step in this direction could be for UNECE to encourage other United Nations regional commissions to consider preparing reports like this one. A complete set of such reports could serve as the basis for constructing an online warehouse of information on supports for measurement and monitoring that NSOs and NSS members could draw upon when they require assistance.

#### 4.2.1 Defining and supporting the role of national statistical offices

##### *NSOs require support in coordination and collaboration*

When it comes to defining and supporting the role of NSOs, regional and global organizations are clear in their position that NSOs must be at the centre of SDG measurement and monitoring. This is acknowledged in the text of the 2030 Agenda itself. While such strong support for the role of NSOs is appropriate and welcome, it must also be tempered with a dose of realism regarding what NSOs can and cannot achieve. The results of the member State survey show that NSOs are struggling in many ways (some predictable and others less so) to fulfil the role they have been given.

**Recommendation #7** – UNECE should deepen its engagement with national governments and United Nations Country Teams in the region to support NSOs more fully in addressing the challenges they face in fulfilling their central roles in SDG measurement and monitoring. Particular attention should be paid to challenges in coordinating and collaborating with the other stakeholders involved, as above all else, NSOs report they face challenges on this front. As the discussion above notes (see recommendations 1-4), it is likely that coordination and collaboration challenges are preventing NSOs from fully meeting their expectations (for example, in providing disaggregated data for specific sub-populations).

#### 4.2.2 Modernization

##### *Efforts are needed to move beyond the promise of modernization*

Though modernization of statistical process was noted as a challenge for SDG measurement and monitoring by about half of member States in the survey, it did not rank among the challenges that most concerned countries. It is unclear whether this is because countries mostly know how to overcome the modernization challenges they face or because they do not see modernization as a top priority in terms of SDG measurement and monitoring. Certainly, regional and global organizations have done an excellent job of spelling out the benefits – indeed, the imperative – of modernization in the context of measurement and monitoring. The case made for modernization in *A World that Counts*, among others, is lucid and compelling. Yet when asked in the survey to provide examples of specific modernization initiatives taken, other than implementation of GSBPM, few countries had much to report. No significant mention was made of using a non-traditional source of data to meet the challenge of measurement and monitoring.

**Recommendation #8** – UNECE should work with other regional and global organizations to assist NSOs in moving beyond the promise of modernization – in particular, the promise of using complementary data sources (for example, big data) – to the realization of its benefits. Countries with well-funded, large statistical systems are likely to be ahead of those with smaller, more resource-constrained systems. UNECE should engage with member States that have achieved positive outcomes through modernization to transfer the lessons learned to countries with less capacity to modernize all on their own.

#### 4.2.3 Strengthening basic statistics and accounts

##### *Global and regional leadership is needed on working beyond traditional silos*

In the case of strengthening basic statistics and accounts, the regional and global communities have a great deal to offer, particularly in the areas of environmental statistics that is relatively under-developed and key to SDG measurement and monitoring. Yet, despite the cross-cutting nature of the 2030 Agenda itself, much of the work done in the statistical domain within regional and global organizations remains siloed within traditional organizational structures. This is, arguably, not the best example to set for countries faced with the challenge of integrated measurement and monitoring.

**Recommendation #9** – UNECE should demonstrate leadership in the domain of SDG measurement and monitoring by working across traditional structures to support member States. UNECE could, for example, undertake actions to promote, and support countries in implementing the recommendations in the UNECE Road Map on Statistics for Sustainable Development Goals and related outcomes of the IAEG-SDGs work on data disaggregation for the SDG indicators, drawing on expertise and examples from all Divisions. Such work would demonstrate to member States the value of coordination and collaboration in addressing the complexities of measurement and monitoring.

#### 4.2.4 Dissemination and communication

##### ***Global and regional leadership is needed on common reporting approaches***

Regarding dissemination and communication, global, regional and national institutions and organizations adopt a wide range of solutions – national reporting platforms, dashboards, interactive reports or other – using various tools and products. For a more efficient use of resources, data transmission options could be embedded in the national reporting platforms or databases, following the recommendations of the IAEG-SDGs Working Group on SDMX.

**Recommendation #10** – UNECE should promote the development and implementation of SDG dissemination and communication platforms and the use of standardized solutions for data and metadata transfer and exchange, following internationally agreed standards (SDMX, for example).

#### 4.2.5 Human and financial resources

##### ***The promise of additional funding must be realized***

Finally, human and financial resources are, as seems always to be the case, a concern for many countries. Despite the Dubai Declaration's clear call to mobilize funding for SDG measurement and monitoring, no global funding mechanism is yet in place. Regrettably, the pandemic of 2020 may well make it more difficult for the foreseeable future to create such a mechanism.

**Recommendation #11** – Countries should, to the fullest extent possible, act upon the Dubai Declaration's call for increased funding for measurement and monitoring. In addition, cost-efficient means should be found to improve the skills and knowledge of member State experts required for measurement and monitoring. In cooperation with other regional and global institutions, UNECE should maximize use of on-line learning, as this is adaptable, does not require travel and, if done well, highly effective. More traditional forms of capacity building – workshops, expert group meetings, conferences – should also be pursued. UNECE is well regarded for its capacity to organize and deliver these kinds of events and this capacity should be leveraged and strengthened to the extent possible. At the same time, UNECE should actively explore new ways to deliver this capacity building that are less expensive, more flexible and fully exploit modern electronic communications potential.



# Measuring and Monitoring Progress Towards the Sustainable Development Goals

The 2030 Agenda and its Sustainable Development Goals (SDGs) provide an ambitious and comprehensive framework that opens new perspectives for policymaking and international cooperation. Its integrated character highlights the linkages and complementarities that exist between different goals and targets.

UNECE is supporting countries to address these key sustainable development challenges through an integrated, multisectoral approach leveraging UNECE norms, standards and conventions, and by building capacities and providing policy assistance. At the crossroads of all UNECE programmes and expertise, four high-impact “nexus” areas have been identified where multiple SDGs converge:

- Sustainable use of natural resources
- Sustainable and smart cities for all ages
- Sustainable mobility and smart connectivity
- Measuring and monitoring progress towards the SDGs.

This publication examines the complex process of measuring and monitoring progress towards the SDGs and makes a number of recommendations to overcome the numerous challenges faced by countries.

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ISBN 978-92-1-117250-8



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