Conference of European Statisticians
Road Map on Statistics
for Sustainable Development Goals
2nd edition

UNECE

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Conference of European Statisticians Road Map on Statistics for Sustainable Development Goals 2nd edition

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Acronyms / Abbreviations

API	Application Programming Interface
CES	Conference of European Statisticians
CISSTAT	Interstate Statistical Committee of Commonwealth of Independent States
CSO	Central Statistical Office
CSSA	Committee of Coordination of Statistical Activities
DSD	Data Structure Definition
e.g.	for example (exempli gratia)
ESCAP	Economic and Social Commission for Asia and the Pacific
ESS	European Statistical System
ESSC	European Statistical System Committee
ECLAC	Economic Commission for Latin America and the Caribbean
EU	European Union
etc.	et cetera
FAO	Food and Agriculture Organisation
GRI	Global Reporting Initiative
HLG-PCCB	High-level Group for Partnership, Coordination and Capacity-Building for statistics for the 2030 Agenda for Sustainable Development
HLPF	High Level Political Forum
HTML	Hypertext Markup Language
IAEG-SDGs	Inter-Agency and Expert Group on SDG Indicators
IDC	Inclusive Data Charter
i.e.	in other words (id est)
INE	Statistics Portugal
INSEE	National Institute of Statistics and Economic Studies (France)
IISD	International Institute for Sustainable Development
LDCs	Least Developed Countries
LNOB	Leave No One Behind
MDG	Millennium Development Goals
MSD	Metadata Structure Definition
NGO	Non-Governmental Organisation
NRDP	National Reporting and Dissemination Platform
NRP	National Reporting Platform

NSDS	National Strategy for the Development of Statistics
NSO	National Statistical Office
NSS	National Statistical System
NQAF	United Nations National Quality Assurance Frameworks
ODA	Official Development Aid
OECD	Organization for Economic Co-operation and Development
PARIS 21	Partnership in Statistics for Development in the 21st century
SAE	Small Area Estimation
SDG	Sustainable Development Goals
SDMX	Statistical Data and Metadata eXchange
SDSN	Sustainable Development Solutions Network
SIDS	Small Island Developing States
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations Department of Social and Economic Affairs
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNSC	United Nations Statistical Commission
UNSD	United Nations Statistics Division
UNWDF	United Nations World Data Forum
URL	Uniform Resource Locator
VNR	Voluntary National Review
WHO	World Health Organisation
XML	Extensible Markup Language

KEY MESSAGES

In 2015 the world embarked on a journey to the future, to achieve the Sustainable Development Goals.

It is not an easy journey, neither for those most in need of progress nor for those addressing the problems. The challenges, conditions, resources and - accordingly - solutions vary enormously. The Road Map on Statistics for SDGs aims to provide guidance to members of national statistical systems and other stakeholders on how to navigate when measuring the achievement of the goals and targets. By doing so it strives to strengthen reliable data-based national information systems and thus to support efforts to achieve the Goals.

We have distilled the following key messages from the chapters of the Road Map to share with you.

The Road Map team

1. **The global commitment to transforming our world requires a global commitment to reporting and sharing data.** *The 2030 Agenda for Sustainable Development* was agreed on by all United Nations Member States in September 2015 and has provided a development pathway through its 17 Sustainable Development Goals (SDGs). With a key focus on "leaving no one behind" it entails unprecedented efforts, partnerships and investments not just in terms of achieving the targets, but also in terms of providing the data and statistics vital to monitor, measure and report on SDG progress. All these data and statistics can be found on national reporting platforms, in voluntary national reviews, national reports and other tools and channels used by national statistical offices (NSOs) and other official data producers.

2. **Use the IAEG-SDGs global list of indicators as a starting point for global reviews and nationally relevant in-depth analysis.** There are 231 global indicators to measure progress on the SDGs. However, as countries differ from each other these indicators might not be equally sufficient or relevant for all of them. National policies and information needs differ to such an extent that to satisfy them all the list of indicators would have to be endless. Therefore, we need national data – focused on measuring progress at the national level. The data from the global indicator list are designed to track the progress at global level and ensure that countries and regions can be compared over time. The data from the national indicator lists help to focus on nationally relevant issues.

3. **Create new partnerships for more customized and localized data.** In some cases, even the national list of indicators will not be sufficient to cover all areas of interest. In striving to *leave no one behind*, NSOs and other data producers will have to focus on specific locations and groups to get a better understanding of how they are doing. This will involve an additional effort by and burden on the limited and already committed NSO resources: the more disaggregated the data the higher the costs for their production. At the same time, not having official data on certain groups (homeless people or migrants, for example) does not mean these groups do not exist. Additional resources and innovative partnerships are needed to fill these data gaps.

4. **To understand the data, you need to understand how they are collected and compiled.** Each SDG indicator is accompanied by a "passport" – its metadata – describing the source, calculation methods, organization responsible for its calculation, and its limitations. The metadata are communicated by the agency responsible for the coordination at national level. To ensure that the indicators are used and interpreted correctly, users should consult the metadata and, if necessary, the statistical office and/or the national indicator focal point.

5. **SDG indicators go beyond conventional official statistics.** Data and statistics for national SDG indicators are produced by NSOs and other national data producers inside and outside the national statistical system (NSS). It may take time to achieve a homogenous quality level for all indicators. Implementing the Quality Framework and a harmonized data production model in all organizations providing SDG data will take time and commitment from all stakeholders, not only NSOs. At the same time, improving the quality of SDG indicators will improve the quality of official statistics in general.

6. **Corresponding legislative frameworks should grant NSOs access to new data sources.** Big data, geospatial data and administrative sources could allow NSOs to provide more granular and timelier data. However, these sources are often privately owned, not sustainable, use different technical standards and are of variable quality. Administrative sources have the biggest potential for producing official statistics but their existence, quality, information content, format and access are not always suitable for statistical purposes, especially in developing countries. Statistical offices have a lot of expertise in working with large volumes of data, ensuring their quality, impartiality and confidentiality. They can make valuable contributions to strategic discussions on national data infrastructures and data cycles, developing and updating statistical legislation based on the *Fundamental Principles of Official Statistics*[1] or national legislation on data access and use, and setting up administrative registers and geospatial data holdings.

7. **NSOs have a role to play as main information hubs.** Official statistics are the cornerstone of national information systems, and NSOs are the central coordination bodies of official statistics. It is therefore vital to invest in the constant development of NSOs in terms of technology, methods, processes, information, standards and frameworks, institutional setting and, of course, people. At the same time, as official statistics are produced not only by statistical offices but also by other members of NSSs, developing statistical capacity is not limited to NSOs. It is important to understand that strengthening the statistical system will improve a country's development by allowing better decision-making with evidence-based policies.

8. **Capacity development should be a continuous process.** Capacity development does not apply to developing countries alone. In all countries, statistical organizations need resources and investment to modernize and keep pace with innovation, technological development, emergence of new sources and information demands.

9. **Lessons learned from the COVID-19 outbreak: the need for modernization and innovative solutions.** Although the pandemic placed a sudden additional burden on countries' response mechanisms, it was treated as a challenge by most NSSs, becoming an accelerator of innovation in many statistical offices throughout the world. It boosted projects that had already been started in the areas of digitization, data collection methods, teleworking, etc. To maintain this momentum, it is crucial to invest in modernization, strengthen infrastructure and agile statistical data production and continue statistical capacity development activities – this should always be a pathway for the future, not just in crisis situations.

10. **Cooperation and partnership are key if we are to "leave no one behind"!** No NSO can face the SDG measurement challenges alone – being in the coordination seat, more than ever, statistical offices need partners with whom to collaborate. Strategic partnerships are important to ensure that countries have high quality information complying with international standards and conforming to all legal and ethical requirements, for the benefit of all.

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[1] https://unece.org/statistics/FPOS

EXECUTIVE SUMMARY

1.　　In June 2017 the Conference of European Statisticians (CES), consisting of heads of statistical offices of UNECE and OECD Member States, endorsed the first edition of the *Road Map on statistics for Sustainable Development Goals* (SDGs). The Road Map was intended as a guide for the CES members, outlining a strategy for national statistical offices (NSOs) to measure progress towards the SDGs. NSOs made use of the Road Map by establishing new information architecture for statistical follow-up of the 2030 Agenda. In some countries the Road Map was important as a tool to support dialogue with policymakers, especially to explain the new obligations for NSOs and the need for statistical capacity development.

2.　　Since the adoption of the 2030 Agenda, countries have made considerable progress in the implementation of the SDGs, including putting in place national monitoring systems. Structures and mechanisms of global and regional monitoring have been developed. At the same time, NSOs still face many challenges. Recognizing the current needs, the CES 2018 plenary session asked the Steering Group on Statistics for SDGs[2] to prepare a second edition of the Road Map (Road Map 2.0) to address issues essential for the statistical community.

3.　　The CES plenary session endorsed the second edition of the Road Map in 2021. The Road Map 2.0 provides guidance and a strategy on how to implement a system for producing and disseminating data on the SDGs. It sets out the activities associated with statistics for SDGs by describing what needs to be done, who the main actors are, their roles in monitoring the SDGs, and the opportunities for cooperation. This guidance includes best practices, concrete actions, priorities and recommendations, but is not a set of rules. It covers a range of possible solutions that can be adapted to specific needs of different NSOs. It also helps NSOs explain and communicate their role in achieving the SDGs. The Road Map 2.0 also serves as a resource for national policymakers, international organizations and anyone involved in the implementation and monitoring of the SDGs.

4.　　The Road Map 2.0 has built on experiences with and lessons learned through the implementation of the first Road Map. It brings together the collective experience of various stakeholders, from global to sub-national level of SDG monitoring. It is in line with the activities of other groups working on statistics for the SDGs, including the Inter-agency and Expert Group on SDG indicators (IAEG-SDGs).

5.　　As the Road Map 2.0 targets a wider audience than NSOs alone, a number of "key messages" have been prepared to draw the attention of various stakeholders. The Road Map 2.0 consists of nine substantive sections, focusing on topics that are important for effective measurement, reporting and communication of SDG indicators. A brief description of each section is presented below. Each section concludes with recommendations for NSOs. The subsequent annexes include a Glossary of terms used and Frequently Asked Questions. Case studies illustrating how statistics for the SDGs are implemented in countries are available on the web[3].

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[2] The Steering Group on statistics for SDGs was set up by the Conference of European Statisticians (CES) Bureau in October 2015 to coordinate and guide the work on official statistics for Sustainable Development Goals under CES.

[3] https://unece.org/statistics/rm-country-case-studies

Use of statistics for the SDGs (Section 1)

6.   Section 1 of the Road Map 2.0 explains the role of official statistics for the SDG follow-up. It highlights the value of official statistics and their importance for tracking progress at various levels. Some reflections concerning limitations of official statistics are also addressed in the section.

7.   Special attention is given to using SDG statistics at global, regional and national level. The 2030 Agenda emphasizes that the SDG indicators are used in many ways, and that communication needs to target individual user groups appropriately. To illustrate the diversity of needs and presentation methods, the section also includes some practical examples of use of SDG data in terms of purpose, type and source of data.

Quality assurance of SDG indicators (Section 2)

8.   Section 2 highlights the importance of quality assurance of SDG indicators. It explains why we need to reflect on the accuracy of SDG statistics and why communication of indicators' quality to users matters.

9.   The UN National Quality Assurance Framework (NQAF) principles provide guidance and support with respect to quality assurance mechanisms. Examples of other quality schemes that may be helpful are also listed.

10.   Some NSOs use non-official statistics to improve SDG monitoring. The quality assurance of data provided by other national data producers may be less straightforward and result in responsibility dilemmas. The section addresses some concerns on this issue.

11.   Section 2 also underlines the role of metadata, highlighting key aspects to be included and how to communicate metadata effectively.

National coordination mechanisms (Section 3)

12.   Section 3 discusses the role of NSOs in implementing the SDGs against the background of existing underlying differences between statistical systems due to both internal and external factors. The section examines factors that may impact NSOs' role in the coordination and production of data for the SDGs, from institutional set-up, legislation, organizational and technical capacity to those related to the political environment.

13.   Ensuring data for SDG monitoring requires extensive analysis of information available at national level. NSSs vary greatly, and different countries have different national data producers. Section 3 describes various forms of collaboration between national data producers.

Reporting on global SDG indicators (Section 4)

14.   The follow-up and review of the 2030 Agenda rely essentially on the systematic provision of data for global monitoring. Section 4 looks at how data flows are organized between national, regional and global levels and how this could be optimized. The section comprises four parts: (a) examining the global data-flows framework, (b) identification of national data providers, (c) different processes and methods of data transmission, and (d) validation of country data.

15.   The complexity of the different data flows together with organizational involvement and governance of custodian agencies contribute to the overall exercise of reporting data for the SDG indicators. Various models used for national reporting on the global SDG indicators are discussed.

16.	This section also describes the benefits of National Reporting Platforms (NRPs; called also National reporting and Dissemination Platforms, NRDPs) as well as more technical aspects of data transmission such as Application Programming Interfaces (APIs), Statistical Data and Metadata eXchange (SDMX) and the development of tools such as the UN DataLab.

17.	An important element of global reporting is data validation. Quality assurance at the international level requires a process of harmonization of the data provided by countries. To improve comparability, custodian agencies may need to adjust the data. While both NSOs and custodian agencies agree on the value and necessity of data validation, there is an ongoing discussion on how to proceed with non-validated country data.

Tracking progress at various levels (Section 5)

18.	In line with the 2030 Agenda's call for SDG implementation and monitoring in regions and countries, Section 5 of the Road Map focuses on tracking progress towards the SDGs going beyond the global indicator framework. It offers an overview of existing SDG frameworks at the regional level, including the EU set of SDG indicators, the OECD mechanism for measuring distance from the SDGs, the CISSTAT approach to monitoring progress in the CIS region and the UNECE framework for tracking SDG implementation.

19.	Section 5 presents global thematic reviews to analyse the progress towards sustainable development from the perspectives of health, gender, industry and agriculture related tailor-made indicator sets and reviews.

20.	Section 5 also deals with the SDG monitoring at the national level. It provides detailed guidance on developing a national SDG framework and presents different approaches to this process. It also refers to subnational and thematic initiatives on tracking the SDGs, including the SDG frameworks for specific groups of stakeholders, such as local governments and the private sector.

Leave no one behind (Section 6)

21.	The 2030 Agenda emphasizes that the SDGs and targets should be achieved for all people, regardless of location, age, income, gender, ethnicity, religion and (dis)ability to leave no one behind (LNOB).

22.	Section 6 of the Road Map explores the different aspects of measuring LNOB groups – data sources, data disaggregation, collaboration with civil society and organizations outside NSOs. This section also looks at the challenges involved in measuring the SDG indicators concerned. A number of practical examples are included in the annex on best practices and case studies.

23.	Section 6 also highlights the need to recognize and communicate the value of data to ensure that no one is left behind and stresses the importance of adherence to statistical disclosure and official data protection regulations to protect individuals and entities.

Communication of statistics for the SDGs (Section 7)

24.	Section 7 discusses the challenges of effective communication of SDG statistics and proposes principles that can be useful when presenting data to the broader public.

25.	The section highlights the importance of clear lines of responsibility for the SDG monitoring within NSOs. It suggests that a special unit or team within an NSO be set up to focus solely on monitoring the SDGs and also recommends ensuring commitment of leaders. Another crucial element is identifying target audiences: NSOs should be aware that they are aiming at different kinds of users,

experts (e.g. statisticians, the scientific community) as well as casual users (e.g. media, general public). Additionally, the Road Map 2.0 recommends that NSOs describe the SDGs in a way that appeals to the audience, but that is also informative and grounded in statistics. This can be achieved by evidence-based storytelling supported by various resources.

Voluntary national reviews (Section 8)

26.   Section 8 discusses voluntary national reviews (VNRs) and the role of NSOs in this process. The Road Map 2.0 suggests that NSOs should be involved in the process of preparation of VNRs and cooperate with the institutions responsible for them.

27.   This section presents two tools created by UN that can be helpful during the preparation of VNRs: the United Nations Secretary-General's reporting guidelines for VNRs and the UN Department of Economic and Social Affairs (DESA) handbook.

28.   The section presents best practices and approaches to drafting statistical annexes. It also points out some compulsory elements of the annex and recommends studying existing VNRs for inspiration.

Capacity development for SDG statistics (Section 9)

29.   The final section (9) of the Road Map is dedicated to capacity development for SDG statistics within as well as beyond NSOs. The section provides an overview of steps taken and progress in capacity development in official statistics for the SDGs and discusses the new approaches to capacity development. The section also lists the main sources of donor support in the field of statistics.

30.   The section examines methods and tools for capacity development including peer reviews, technical assistance and study visits, training and workshops, participation in meetings, long-term partnerships and twinning projects.

INTRODUCTION

Mandate

31.   The document *Transforming Our World: The 2030 Agenda for Sustainable Development*[4] , adopted in September 2015 by all UN Member States, included 17 Sustainable Development Goals (SDGs) and 169 associated targets. The SDGs constitute a policy framework for actions at national, regional and global levels. Accurate data are critical to assess progress towards achieving the SDGs at the various levels.

32.   Official statistics play a key role in providing evidence for the follow-up and review of the SDGs and the related targets. In addition, two of the targets focus specifically on improving official statistics; namely:

> Target 17.18: "By 2020, enhance capacity building support to developing countries, including for least developed countries and small island developing states, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts."

> Target 17.19: "By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries."

33.   The Conference of European Statisticians (CES) approved the first edition of the *Road Map on Statistics for SDGs*[5] in June 2017. The Road Map was prepared by a Steering Group on Statistics for SDGs (set up by the CES Bureau in October 2015). The Road Map has been widely used by countries, international organizations and other stakeholders and has helped to establish a system for measuring progress towards the SDGs. It has been published in English and Russian (some countries have also translated it into their national languages, e.g. Spanish and Serbian).

34.   The 2018 and 2019 CES plenary sessions requested the Steering Group to prepare a second edition of the Road Map to continue to provide vision and guidance to countries on statistics for the SDGs.

Objectives and approach

35.   The second edition of the Road Map (Road Map 2.0) aims to continue to guide the CES work on statistics for the SDGs. In the first five years of implementation of the 2030 Agenda, processes for providing statistics for the SDGs have evolved at global, regional and national levels. Many challenges remain and new ones continue to emerge, requiring new approaches and solutions.

36.   As indicated in the first edition of the Road Map, the publication was intended to be a living document. The CES Steering Group on Statistics for SDGs committed to update it, taking into account relevant developments including the work of the Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs), the High-level Group for Partnership, Coordination and Capacity Building for the 2030 Agenda (HLG-PCCB), and the Partnership in Statistics for Development in the 21st Century (PARIS21). The Road Map 2.0 fulfils the relevant requirements.

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[4] https://sdgs.un.org/2030agenda

[5] https://unece.org/statistics/publications/road-map-statistics-sustainable-development-goals

37.   The 2021 CES plenary session endorsed the Road Map 2.0. The Road Map focuses on issues relating to the SDG monitoring that are examined by various stakeholders at international and national level. It provides a framework for NSOs and other institutions involved in data production and reporting, assessing progress towards the SDGs and communicating information on the SDGs.

38.   The contents of the Road Map 2.0 are largely based on those presented in the first edition of the Road Map but are more extensive in terms of more refined descriptions of topics commonly raised during international meetings. Additionally, special attention is given to the statistics needed to address the "leave no one behind" commitment and to quality assurance of the SDG indicators.

39.   To attract the attention of various stakeholders to the reflections contained in the Road Map 2.0, key messages have been pulled from all chapters and presented as a separate part of the document. The Road Map 2.0 also includes national case studies that add value by providing practical experiences and serving as inspiration.

40.   Like the previous edition, the Road Map 2.0 provides recommendations for NSOs as they strive to meet the challenge to provide and coordinate the delivery of data on the global SDG indicators and to support the review and follow-up of progress towards the SDGs at national level.

Extraordinary circumstances due to COVID-19

41.   Work on the Road Map 2.0 coincided with the COVID-19 pandemic. The pandemic has affected and continues to affect not only the SDGs per se, but also the monitoring process. This made it necessary to consider the impact of COVID-19 on issues raised in the document.

42.   Since the adoption of the 2030 Agenda, statistical institutions have been organizing processes to monitor and evaluate progress towards the SDGs. Substantial progress has been made to implement the IAEG-SDGs global indicator framework and NSOs have been adapting their systems to the new requirements of global and national SDG indicators. The ensuing rich package of achievements and remaining challenges was a solid foundation for further development, but it was heavily impacted by the COVID-19 crisis. Five years of enhancing the statistical capacity for the SDGs was unexpectedly interrupted by the global pandemic, and we now need to adjust our strategy.

43.   COVID-19 has had a massive effect on statistical systems and NSOs. Many NSOs are struggling to compile even basic statistics. At the same time, governments and other stakeholders are looking for data to measure the COVID-19 impact on their societies, environment and economies. NSOs have had to combine an increased demand for timely and disaggregated data with the necessity to reorganize work and adjust statistical production processes.

44.   The Road Map 2.0 provides a glimpse of the challenges involved in producing and providing data for the SDGs after the global COVID-19 crisis. Assessing the pandemic's overall impact on the SDGs and its effects on official statistics will only be possible at some point in the future. At the time of writing, a range of initial consequences can be discussed.

45.   Some considerations addressing the effects of COVID-19 are included in Section 6 "Leave no one behind" presenting data challenges for vulnerable groups.

1. USE OF STATISTICS FOR THE SDGs

"[…] To support accountability to our citizens, we will provide for systematic follow-up and review at the various levels, as set out in this Agenda […]"

- Transforming our world: The 2030 Agenda for Sustainable Development, para 47[6]

46. A wide range of stakeholders, from high-level decision makers and politicians to businesses, civil society and the public, use information generated by statistics to make choices and take decisions. In its call for a follow-up that is evidence based and builds on high-quality data, the 2030 Agenda reiterates and reinforces the rising demand for data and statistics.

1.1. Statistics in the context of the SDGs

47. The use of statistics to follow up the 2030 Agenda on Sustainable Development has two major aims – to support evidence-based decision-making for sustainable development and ensuring no one is left behind, and to hold decision makers accountable for the commitments made when signing the 2030 Agenda.

48. Statistics are produced and disseminated by a multitude of private and public organizations and enterprises for a wide variety of areas. The added value of the SDG follow-up is the cross-cutting perspective of sustainable development that these statistics – often produced primarily for other purposes – provide when they are pulled together and made available as a package. Since sustainable development touches most aspects of everyday life, this results in a framework with a communicative force that should not be underestimated. The interlinkages between indicators bridging the social, economic and environmental dimensions of sustainable development give the indicator framework a power that can help bridge different policy fields and support more integrated analysis[7]. SDG statistics, comprising official statistics and alternative datasets, can also help uncover underlying systemic disadvantages that vulnerable population groups are facing. This aspect is further elaborated in Section 6, on the principle of leaving no one behind.

49. Compiling and maintaining a useful follow-up of such a far-reaching subject as sustainable development requires cooperation, collaboration and coordination. It involves knowledge about users' needs and user groups, policy priorities and national, regional and global statistical ecosystems. All these issues are elaborated on in the various sections of Road Map 2.0.

50. Using statistics in the follow-up of the implementation of the 2030 Agenda will also have the added benefit of making it more concrete. Communicated effectively, statistics for the SDGs will be a reminder to policymakers and to the public of the commitments made by our governments.

51. For the follow-up to be useful and have the desired effects on implementation of sustainable development, it is imperative that the statistics used are accurate, understood and trusted by the users.

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[6] https://undocs.org/A/RES/70/1

[7] https://unstats.un.org/unsd/statcom/51st-session/documents/BG-Item3a-Interlinkages-Workstream-E.pdf

1.1.1. The comparative advantage of official statistics[8]

52.   In its Resolution (A/RES/71/313), the UN General Assembly stressed that official statistics and data from NSSs constitute the basis needed for the SDG global indicator framework. It also stressed the role of the NSO as the coordinator of the NSS.

53.   The term "official statistics" can have different connotations in different countries depending on the national legislative framework. Throughout this Road Map the term is used loosely to mean statistics produced and disseminated by government agencies. Official statistics, regardless of the specific definitions that may apply in different countries, have specific characteristics. They are:

- Typically produced under solid institutional and legal frameworks including mandates for data collection.

- Produced under the application of strong data confidentiality protection regimes.

- Consistent over long periods of time.

- Produced with the sole aim of generating reliable and accurate information.[9]

54.   Private data providers may offer data that seem more attractive, because they may be faster and more up to date for instance. But the value of official statistics is in the underlying legal and institutional framework that ensures the compilation of high-quality, unbiased and independent statistics that are not subject to inappropriate influence. These, and other aspects, are formulated in the Fundamental Principles of Official Statistics[10] that all NSOs have committed to adhere to.

55.   In a world where huge amounts of data are being generated all the time, and where many people can look up almost anything they want, whenever and wherever they want, official statistics stand out as a unique source of impartial and trustworthy information[11].

56.   Official statistics are produced to be used and to have an impact on society by providing more openness and transparency and ensuring confidentiality and equal access to information as a human right. A society that uses official statistics should be a society with more empowered people, better policies, more effective and accountable decision-making, greater participation and stronger democratic mechanisms.

1.1.2. Stepping out of the comfort zone

57.   Countries can also use non-official data and statistics in the SDG follow-up, for example to fill data gaps or to provide context for the SDG monitoring.

58.   If governments use non-official data and statistics[12], some safeguards need to be in place: quality standards in accordance with the Fundamental Principles of Official Statistics should be applied and the NSO should be tasked with assessing the quality of the statistics used. Section 2 on quality of

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[8] The content of this section is pulled from the publication *Recommendations for promoting, measuring and communicating the value of official statistics* (UNECE 2018).

[9] The definition used is from the publication *Recommendations for Promoting, Measuring and Communicating the value of official statistics* (UNECE 2018).

[10] https://unece.org/statistics/FPOS

[11] The UN General Assembly in its Resolution (A/RES/71/313) stressed that official statistics and data from national statistical systems constitute the basis needed for the SDG global indicator framework. It also stresses the role of NSOs as the coordinator of the national statistical system.

[12] The terms data and statistics are further explained in the glossary of the Road Map. However, these terms are often used as synonyms.

SDG statistics provides more information on the practices and processes that can be put in place to ensure that the SDG statistics are fit for purpose.

59.   In some cases, civil society organizations produce data that can be used to compile indicators. These data have both advantages – they can fill gaps left by official statistics - and disadvantages – quality, timeliness and consistency may be below par. The UK and Canada use civil society data and recognize their added value of shedding light on areas where official data may not be available, while clearly indicating the source and the fact that they are not official statistics and that the quality standards might not be fully in line with those used in official statistics.

1.2.   How are SDG statistics used?

60.   SDG indicators are used in a number of ways: to present a global overview of sustainable development progress in relation to the goals and targets of the 2030 Agenda; to illustrate the state of play or progress in a region or country; or as a basis for more thorough analyses of the challenges involved in achieving the goals. They can also be used to compare progress in different countries, subregions or regions, and to shed light on the situation of vulnerable groups. Thus, there are different kinds of users of SDG statistics, and communication must target these user groups accordingly. Section 7 on communication also looks at this aspect. The present section presents an overview of some practical examples of SDG data uses.

1.2.1. Tracking global progress

61.   Both public and private organizations are monitoring the progress towards the goals and targets of the 2030 Agenda. The IAEG-SDGs global indicator framework or approximations of this framework are most commonly used in this regard. One reason for this is that comparability across countries is a key quality dimension for monitoring global progress. Official international statistics used for global tracking are often based on nationally produced official statistics. These are usually preferable as they are compliant with international standards (and therefore typically easier to harmonize for comparability), produced under strict confidentiality regimes, and based on scientific principles and under the rule of professional independence[13].

62.   Global monitoring primarily constitutes observing the progress and identifying challenges in regions and thematic areas which require more action. This can then help to prioritize areas for special attention and action, and to allocate resources.

Annual SDG Progress Report and Progress Chart

63.   The Secretary General's Sustainable Development Progress Report[14] describes the progress achieved worldwide towards the 2030 Agenda. It is based on data and analysis of global aggregate statistics available in the Global SDG Indicators Data Platform[15], which is hosted and maintained by the UN Statistics Division (UNSD) and contains available national statistics for the global SDG indicators. The report is produced primarily with a view to inform the UN High-Level Political Forum (HLPF) process. It is prepared by UNSD in collaboration with the custodian agencies - the agencies responsible for the individual indicators concerning the thematic areas they deal with. See Section 4 for more information on custodian agencies and their role.

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[13] However, in some cases the use of non-governmental data and statistics can be motivated. It could be sometimes more effective to use global monitoring data or sometimes non-governmental data can be perceived as more independent.

[14] https://www.un.org/sustainabledevelopment/progress-report/

[15] https://unstats.un.org/sdgs/unsdg

64.   In addition to the follow-up and review process, UNSD, in collaboration with other international organizations, has prepared annual SDG Progress Charts since 2019. These present snapshots of progress made at the global and regional levels towards selected targets under all goals of the 2030 Agenda, based on a limited number of indicators. The progress chart provides an overview of global and regional trends towards the achievement of the SDGs and helps readers to visualize where we are and the rate of progress, based on some of the indicators. As more data become available, the methodology used for the progress chart will be revised and updated.

The Global Sustainable Development Report

65.   The Global Sustainable Development Report[16] is prepared by an independent group of scientists. The first report was published in 2019 to inform the SDG summit in New York in September 2019[17].

66.   The Report is distinct from, and complementary to, the annual Sustainable Development Goals Progress Report prepared by the UN Secretary General. It does not produce new evidence but capitalizes on existing knowledge across disciplines through an "assessment of assessments". It highlights state-of-the-art knowledge for transformations towards sustainable development and identifies concrete areas where rapid, transformational change is possible. The report draws on numerous sources of knowledge, including the Secretary General's SDG Progress Report, but also scientific articles and special reports.

Global thematic reports

67.   Many custodian agencies have specific sections on their websites dedicated to the SDGs where they release different types of indicator-based products, such as publications and reports, dashboards, manuals or working documents with thematic content. Below is a table presenting a few examples of such websites and reports.

Table 1.1
Examples of websites and reports with thematic content

Custodian agency and website on the SDGs	*Publication and link*	*Main characteristics*
WHO https://www.who.int/sdg/en/	World Health Statistics 2021: Monitoring health for the SDGs. https://reliefweb.int/report/world/world-health-statistics-2021-monitoring-health-sdgs	Annual snapshot of the state of the world's health. The 2021 report presents the latest data on more than 50 health-related SDGs and "triple billion" target indicators. The 2021 edition includes preliminary estimates for global excess deaths attributable to COVID-19 for 2020 and the state of global and regional health trends from 2000-2019.
UNEP https://www.unenvironment.org/unga/our-position/unep-sustainable-development-goals-summit	Measuring Progress Towards achieving the environmental dimension of the SDGs. https://wedocs.unep.org/handle/20.500.11822/27627	The data in this report and its statistical annex are based on data included in the Environment Live Global Database (UNEP 2019b), which is an exact match with the data in the Global SDG

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[16] https://sustainabledevelopment.un.org/globalsdreport/2019

[17] The SDG Summit in 2019 was the first High-level Political Forum (HLPF) on Sustainable Development under the auspices of the General Assembly https://sustainabledevelopment.un.org/sdgsummit.

| | | Indicators Database plus some additional indicators and the SDG disaggregation. |
| FAO http://www.fao.org/sustainable-development-goals/en/ | Tracking progress on food and agriculture-related SDG indicators 2020: A report on the indicators under FAO custodianship. http://www.fao.org/3/i6919e/i6919e.pdf | Flagship publications that include both a storyline and statistical annexes on relevant SDG indicators under FAO custodianship. |

The Sustainable Development Report[18]

68.   The Sustainable Development Report (formally: SDG Index report) is produced annually by teams of independent experts at the Sustainable Development Solutions Network (SDSN) and the Bertelsmann Stiftung. It presents an SDG Index and Dashboard for all countries of the world thus giving a visual representation of countries' performance on the SDGs to identify priorities for action. It is not an official SDG monitoring tool but is presented as a complementary perspective to the official UN reports and databases. SDSN and the Bertelsmann Stiftung use publicly available data published by official data providers (including World Bank, WHO, ILO,) as well as other organizations including research centres and NGOs to construct the index and compile the dashboards. The list of indicators is limited to 100 and differs from the Global SDG indicator list.

69.   The Sustainable Development Report exemplifies the use of statistics to produce country rankings. It is important to note that rankings are very powerful communicative tools that could, potentially, lead to increased recognition of the 2030 Agenda and to increased overall knowledge about the general challenges across the world. However, an index is often difficult for users to interpret and often lacks depth and transparency. Sometimes it is not clear whether a shift in the ranking is caused by actual progress or is the effect of, for example, a new data source becoming available in a country. The issue of rankings is further elaborated in a subsection on non-official SDG progress assessments in Section 7 of this Road Map, on communication.

1.2.2. Regional follow-up

70.   Several regional groupings report on progress towards the goals of the 2030 Agenda. Most of them use the IAEG-SDGs global indicator framework, or an approximation, to ensure comparability between countries. Harmonized indicators available at the regional level that are more suited to a goal or target in a particular regional context are sometimes used instead of a global indicator. Regional follow-ups are often aimed at existing regional policy frameworks but framed in the 2030 Agenda context.

UNECE platform for SDG statistics

71.   The United Nations Economic Commission for Europe (UNECE) has launched a regional platform[19] with three components: a knowledge hub, a dashboard of indicators and a database. The knowledge hub and the database are mainly aimed at statisticians and other professionals interested in methodologies, indicator comparability and analyses, while the dashboard is aimed at the public and policymakers. The UNECE database contains statistics for the IAEG-SDGs global indicators that are relevant to the region. It will be developed further to eventually contain more national statistics with

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[18] https://dashboards.sdgindex.org/

[19] https://w3.unece.org/sdghub/

regional relevance. More information on this platform is available in Section 5 (Tracking progress at various levels).

Progress towards the SDGs in Latin America and the Caribbean[20]

72.   The Economic Commission for Latin America and the Caribbean (ECLAC) has released its four-year progress report on the progress and regional challenges of the 2030 Agenda for Sustainable Development in Latin America and the Caribbean[21]. Published about four years after the approval of the 2030 Agenda, this report gives an overview of the achievements in the region on the SDGs on the one hand, balanced by the challenges and problems on the other. Additionally, ECLAC and other specialized UN agencies and offices developed a Regional Knowledge Platform on the 2030 Agenda in Latin America and the Caribbean. The platform provides information on institutional aspects, indicator frameworks, databases and statistical profiles. It reports on the official SDG indicators and includes the prioritized set of indicators for regional statistical follow-up to the SDGs defined for Latin America and the Caribbean (150 indicators, of which 122 are part of the Global SDG indicator framework and 28 are complementary or proxy indicators relevant for the region).

Regional platform in the ESCAP region

73.   In the Economic and Social Commission for Asia and the Pacific (ESCAP) region, the global list of UN indicators has been complemented with indicators taken from other international organizations, to create a regional platform. The annual Asia and the Pacific SDG Progress Report by ESCAP[22] analyses SDG trends as well as data availability for monitoring progress in Asia and the Pacific and the five subregions. It is a key resource for all stakeholders involved in prioritization, planning, implementation and follow-up of the 2030 Agenda in Asia and the Pacific. It also presents dashboards for ESCAP and its subregions.

Sustainable development in the European Union[23]

74.   Eurostat is in charge of monitoring the SDGs in the European Union (EU). It uses a European set of around 100 SDG indicators of which almost two thirds are aligned with the global IAEG indicators. All of them are based on statistics already collected and found in European databases and offer data for EU countries. Eurostat has dedicated a section of its website to the SDGs, comprising a database with EU indicators broken down by Member States, an annual report on the situation in the EU with respect to the achievement of the SDGs and a number of interactive informative visuals such as "SDGs & me[24]", "Discover the progress of SDGs in the EU[25]" and "Compare your country[26]". The choice of indicators for EU monitoring is based on existing EU policy frameworks and on the availability of good quality data.

Distance to targets for the OECD countries

75.   The Organization for Economic Co-operation and Development (OECD) has developed and produced three reports, in 2016, 2017 and 2019, on distances to targets for the OECD countries[27]. The reports aim to assist Member States with their national implementation of the 2030 Agenda. It provides a high-level overview of strengths and weaknesses in performance across SDGs and the 5Ps of the 2030 Agenda: People (goals 1 to 5), Planet (goals 6 and 12 to 15), Prosperity (goals 7 to 11),

[20] https://agenda2030lac.org/en

[21] https://agenda2030lac.org/

[22] https://www.unescap.org/kp/2021/asia-and-pacific-sdg-progress-report-2021

[23] https://ec.europa.eu/eurostat/web/sdi

[24] https://ec.europa.eu/eurostat/cache/digpub/sdgs/

[25] https://ec.europa.eu/eurostat/web/sdi/key-findings

[26] https://ec.europa.eu/eurostat/web/sdi/indicators

[27] https://www.oecd.org/sdd/measuring-distance-to-the-sdg-targets-2019-a8caf3fa-en.htm

Peace (goal 16) and Partnership (goal 17). It aims to help countries navigate the complexity of the SDGs and identify priorities within the broad 2030 Agenda.

76.   The report follows the IAEG-SDGs global indicator framework but also uses proxy indicators and OECD data to complement the indicators available in the UN SDG database to maximize coverage and comparability between countries. OECD has developed a methodology that evaluates the distance countries need to cover to meet each target.

1.2.3.   Use of SDG statistics at the national level

77.   At the national level, countries have taken different approaches on how to follow up sustainable development in the context of the 2030 Agenda. The different perspectives taken depend on a number of issues, but important common factors seem to be previous experience of follow-up on sustainable development strategies and the degree of decentralization and coordination within the NSS (see Section 3 on national coordination mechanisms and Section 5 Tracking progress at various levels).

National indicators

78.   At national level, SDG indicators are used to monitor the progress of countries towards the 2030 Agenda and to assess the impact of the adopted measures. In this sense SDG indicators have to be relevant to national contexts and communicable to users. Therefore, the global and regional indicators are often complemented with national and subnational indicators. Under the commitment of "leaving no one behind", national follow-up can often provide better breakdowns by, for example, territories, sex, age and vulnerable groups. This way, data will show the national, subnational and local performance by goal and target and will allow priorities for action to be identified. Countries have also developed national indicator lists based on relevance to their specific context and availability of official statistics. A more thorough account of the use of national indicators can be found in Section 5 (Tracking progress at various levels).

79.   UN country offices also often make use of national SDG indicators when drafting country programmes and plans of cooperation and tracking the effectiveness of their implementation.

Follow-up of national sustainable development strategy

80.   Many countries which had already adopted a sustainable development strategy before the SDGs were introduced remapped these strategies to the SDGs, using previously developed indicator lists to follow up the strategies and thus as the national follow-up of the 2030 Agenda. These indicator lists may overlap with the IAEG-SDGs global indicator framework to some extent. Finland is one of the countries to use this approach. Other countries also later adopted national strategies aligned with the 2030 Agenda, adding national indicators to the global ones to monitor these.

Use of national reporting platforms

81.   Many countries have developed national reporting platforms (NRPs) to facilitate and enhance the usefulness of SDG statistics.

82.   NRPs can serve three main purposes: as a data collection portal where various producers can update their information; as a production database of global, regional, national and subnational SDG indicators; and as a dissemination portal that allows users to find SDG country data through a single-entry point. An NRP can be considered from a dual perspective: as a way to use SDG statistics and, at the same time, as a way of promoting the use of statistics by presenting them in a user-friendly way via a single-entry point.

83.   Many NSOs have already developed or are building NRPs with data, tables, graphics and visual tools. A list including links to national NRPs is available on the UNECE knowledge hub[28].

84.   An NRP can also constitute the national mechanism for providing data to custodian agencies. This topic is further detailed in Section 4 on Reporting global indicators.

Voluntary national reviews

85.   Countries are free to choose how and when they present voluntary national reviews (VNRs) to the HLPF. However, the reviews should be rigorous and based on evidence, informed by country-led evaluations and data which are high-quality, accessible, timely, reliable and disaggregated by income, sex, age, race, ethnicity, migration status, disability, geographic location and other characteristics relevant in national contexts. Countries are also encouraged to structure their VNRs according to common reporting guidelines[29] prepared by UNDESA, which include the preparation of a statistical annex. These annexes should typically include national representations of the available IAEG-SDG global indicators, complemented with national indicators. More information on and practical examples of preparing VNRs are provided in Section 8 Voluntary national reviews.

Beyond indicators

86.   Indicators are by definition a means of indicating what is happening. In the context of 2030 Agenda, more detailed statistical datasets are often needed to support the decision-making and policy development process. For example, in addition to existing and/or internationally agreed indicators, economic, environmental or demographic studies are necessary to assess the impact of such policies. Country case studies of how statistics other than indicators are used are provided on a dedicated website[30].

87.   The follow-up of the 2030 Agenda can include information other than data and statistics. But a lack of high-quality statistics in the follow-up will leave the door open to non-verifiable interpretations and ineffective policy development. If high-quality statistics, are not available, it may be necessary to use alternative sources. Many statistical systems in the world are underfunded and lack the capacity to produce official statistics to the extent needed to provide policymakers with solid evidence for decision-making. Furthermore, official statistics may not be detailed or timely enough and users might simply not know which statistics are available, where to find them or how to use them. As statistical literacy is often low among users, statistics that are available can also be difficult to understand and interpret. Therefore, the availability of data by itself is not enough to ensure that they are used. More support is needed to build capacity for data analysis and use (e.g. by increasing statistical literacy, including statistics in school curricula, etc.).

88.   Use of high-quality official statistics can be advanced by support for building capacity within statistical systems to develop, produce and – not least – communicate statistics. Section 9 of this Road Map outlines the challenges and opportunities involved in capacity development for SDG statistics and beyond. Section 7 examines communication as a means for reaching the goals and targets of the 2030 Agenda.

1.3.   Summary of uses of different kinds of statistics and data in the context of the 2030 Agenda

89.   As evident from the previous sections of this chapter, not all data are fit for every purpose. In many cases, official statistics are the preferred source of information. However, other data may be

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[28] https://statswiki.unece.org/display/SFSDG/Summary+of+Progress+in+UNECE+countries

[29] https://sustainabledevelopment.un.org/content/documents/17346Updated_Voluntary_Guidelines.pdf

[30] https://unece.org/statistics/rm-country-case-studies

more suitable for use in some cases, for example maps to show transboundary pollution. A clear understanding of where and when different kinds of data are needed can help in the discussions about where capacity needs to be developed and resources need to be allocated (see Table 1.2).

Table 1.2
Types of use of different kinds of data and statistics

Type of use	Aim	Specific requirements	Type of data to use, sources
Global overview and international comparisons e.g. the global SDG report based on global indicators or the SDSN Sustainable Development Report.	To see overall progress and pinpoint regions or subject areas left behind to raise financial or policy support	Internationally comparable statistics.	Internationally harmonized statistics, e.g. global SDG indicators or other internationally comparable statistics. Country-level data, regional aggregates.
Shareable content e.g. indicators, weather symbols, videos, visuals, interactive charts.	To illustrate interesting developments in a simple way. To attract the attention of time-limited users who may be inclined to share interesting developments, quick facts or short news articles on their social media platforms.	Easy to understand, visually attractive, factual but not complicated. Users are often not concerned about the data source or quality; therefore, the use of quality assured statistics or official statistics is preferred so as to safeguard trust in statistics.	National or international official and/or quality assured statistics.
Progress assessments e.g. key indicators, weather symbols, arrows, 'odometers'.	To show change, as policy input, evidence for decision making and for accountability.	Carefully chosen to reflect different aspects of development. Comparability over time very important.	National or international official and/or quality assured statistics. Time series.
Country profiles/national assessments e.g. country reports, national data platforms.	To analyse the situation or progress in a country or in a thematic area.	High accuracy and coherence. Context is important. For analysis of national situation, international comparability is often not important.	National official and/or quality assured statistics. Time series.
In-depth analysis e.g. thematic reports, research reports.	In-depth analysis or research into specific subject areas.	High accuracy and coherence.	Official statistics and research data. Specialized surveys or data collections. Analysis providing context around the data.

Assessments of the principle that no one should be left behind e.g. thematic reports.	To identify groups left behind and the situation for vulnerable groups.	Disaggregated data or data on specific vulnerable groups. If time-series are not available, one-off data may be used.	Official statistics, register data, modelled data (small area estimates). Research data, civil society organization data, citizen-generated data, qualitative data. Analysis providing context around the data.
Basis for policy action at local level.	To address relevant issues in the local context.	Spatially disaggregated data.	Official statistics at detailed level, administrative data, private-sector data, big data.
Basis for response in emergency situations.	To identify groups that are affected by an emergency situation for emergency relief, recovery, etc.	Operative data on where people are located, damages etc. During an emergency, timeliness is of utmost importance.	Official statistics, administrative data, big data (e.g. mobile phones, satellite images), geo-tagged data, citizen-generated data, etc. Registers and linked data.
Environmental monitoring e.g. on air pollution (particulate matter concentrations), water pollution, water levels, etc.	To safeguard public health and the environment.	Scientifically approved methods.	Data from monitoring stations, official statistics can be used as background data.

2. QUALITY ASSURANCE OF SDG INDICATORS

90.   The SDG indicators play a central role in following up and analysing SDG progress and are an essential resource for policymakers, experts and the public. The indicators contribute to increased transparency of SDGs, support evidence-based decision-making and a more integrated analysis. As policymakers and other specialists across the world use the indicators for decision-making, it is important to guarantee the quality of the indicators, i.e. to assure that they are fit for purpose.

2.1. Why quality assurance of SDG indicators requires more attention

91.   Although the SDG indicators are important in reporting progress towards the achievement of the SDGs, communicating through indicators is complex [31]. On its own, an indicator does not necessarily explain what it indicates, and since the SDG indicators are used by a wide variety of users, potentially with a wide variety of objectives, this poses a challenge. To avoid unintended use and inaccurate conclusions, it is essential that all users can understand and accurately interpret the quality and reliability of the indicators.

92.   Statistical producers both inside and outside the NSS are involved in the production of the SDG indicators, and in some cases, they use new or non-traditional data sources. With this in mind, the UN Statistical Commission requested an update of the UN National Quality Assurance Framework (NQAF), emphasizing "the importance of ensuring the quality of data derived from new sources and new data providers, including those outside the official statistical system"[32]. The NQAF now includes a chapter specifically on the quality of SDG statistics and indicators.

93.   Both global and national statistics are needed to follow up on the SDGs. As national data have to be internationally comparable to produce global aggregates, quality assurance needs to take place both at national and global levels. At national level to ensure the indicator's fitness for purpose in a national context.   At international level to produce statistics that are both fit for purpose and internationally comparable.

94.   The SDG indicators cast a wide net and include both statistical and non-statistical indicators – the latter based on qualitative information. The production methods of the indicators and related margins of error are therefore also wide ranging. The method used to produce an SDG indicator affects the output directly. If the uncertainty of an indicator is not described, users will struggle to understand how accurate and reliable it is. Since indicators can only ever be a representation of reality with a certain degree of accuracy, different indicators will relate to the SDGs with different degrees of accuracy. We therefore need to describe to what extent the SDG indicators accurately represent their respective targets and communicate this to the users.

2.1.1.   The UN National Quality Assurance Framework (NQAF)

95.   The NQAF aims to guide countries in the implementation of a national quality framework. It also includes guidelines on quality of data and statistics for the SDG indicators.

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[31] https://ec.europa.eu/eurostat/documents/3859598/5937481/KS-GQ-14-011-EN.PDF/82855e3b-bb6e-498a-a177-07e7884e9bcb

[32] https://unstats.un.org/unsd/methodology/dataquality/references/1902216-UNNQAFManual-WEB.pdf

96.   Statistics producers working in the context of the SDG indicators may not have much previous experience in quality assurance of statistics. Therefore, the best way forward is to focus primarily on actions to improve the quality of statistical output available to users. For example: publish metadata for the SDG indicators, set a release calendar or release dates for the SDG statistics to assure accessibility and prepare a quality report focusing on the statistical output. Following these primary actions, a plan can be developed for the next phase of the quality assurance work. The NQAF[33] comprises 19 quality principles and associated requirements that, when met, will ensure that provisions have been made to assure quality. These principles could be used in the development phase of a national quality assurance framework.

> Principle 1: Coordinating the national statistical system
>
> Principle 2: Managing relationships with data users, data providers and other stakeholders
>
> Principle 3: Managing statistical standards
>
> Principle 4: Assuring professional independence
>
> Principle 5: Assuring impartiality and objectivity
>
> Principle 6: Assuring transparency
>
> Principle 7: Assuring statistical confidentiality and data security
>
> Principle 8: Assuring commitment to quality
>
> Principle 9: Assuring adequacy of resources
>
> Principle 10: Assuring methodological soundness
>
> Principle 11: Assuring cost-effectiveness
>
> Principle 12: Assuring appropriate statistical procedures
>
> Principle 13: Managing the respondent burden
>
> Principle 14: Assuring relevance
>
> Principle 15: Assuring accuracy and reliability
>
> Principle 16: Assuring timeliness and punctuality
>
> Principle 17: Assuring accessibility and clarity
>
> Principle 18: Assuring coherence and comparability
>
> Principle 19: Managing metadata

97.   To benefit from already existing national structures, countries which already have a national quality framework in place can harmonize this framework with the NQAF guidelines for SDG indicators.

98.   Other existing international quality frameworks and examples can also be applied, for example: the Quality Assurance Framework of the European Statistical System[34], the Quality framework for OECD Statistical Activities[35], IMF[36], UNECE[37] and FAO[38].

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[33] The content of this section is taken from the UN NQAF.

[34] https://ec.europa.eu/eurostat/documents/64157/4392716/ESS-QAF-V1-2final.pdf/bbf5970c-1adf-46c8-afc3-58ce177a0646

[35] https://www.oecd.org/sdd/qualityframeworkforoecdstatisticalactivities.htm

[36] https://dsbb.imf.org/dqrs/DQAF

[37] https://unstats.un.org/unsd/dnss/docs-nqaf/UNECE-Quality%20Improvement%20Programme%202010.pdf

[38] http://www.fao.org/3/i3664e/i3664e.pdf

2.2. Quality assurance challenges

2.2.1. Non-official statistics producers and non-official data

99.   SDG indicators are produced both inside and outside NSSs. The quality of the indicators depends on the underlying statistical processes. Many non-official producers of statistics will not be as experienced in sound methodological procedures as NSOs and may even be entirely new to quality frameworks. They will benefit most from a framework that is easily understandable for all producers and contains useful practical examples. Such a framework could be compiled using the NQAF recommendations together with existing national quality frameworks.

100.   The coordinating organization, mostly the NSO, should play a key role in quality assurance of the SDG indicators. This coordinating organization should explain the commitment to quality assurance to all producers and set out how they can work to achieve this. This communication is vital: the producers must understand what is expected of them and must be able to fulfil their role in quality assurance.

101.   To assure the quality of the SDG indicators, we also need to assure the quality of the underlying data sources. SDG indicators are often the result of reprocessed official statistics that typically comply with some kind of quality framework. In some cases, non-traditional and/or new data sources are used, for example if there are no official data or non-traditional sources are already well established. In these cases, we must be able to assure the quality of the sources. This can be both challenging and time consuming. Although the precision of the statistics produced by non-traditional and/or new data sources might in some cases be better, we also need to understand these sources in terms of relevance, timeliness and consistency. And we need to make sure that the data are produced and disseminated under strict data confidentiality protection regimes. See also the case study from the Netherlands titled "Quality criteria for externally sourced SDG data"[39].

2.2.2. Statistical and non-statistical indicators

102.   The SDG indicator framework includes both statistical and non-statistical indicators. Generally, the statistical indicators are estimates of some sort and should therefore be reported with information about their uncertainty, which is an essential part in assuring and describing the quality of the indicator. As previously mentioned, one chapter in the NQAF specifically discusses quality with regards to the SDG indicators.

103.   Assuring the quality of the non-statistical indicators in the SDG framework is more challenging. The NQAF does not cover quality assurance of such indicators and states that "The non-statistical indicators in the global framework are not within the competence of NSOs as data providers and validators, although NSOs may still act as national administrative coordinators of SDG reporting as a whole, including for non-statistical indicators."[40]. The NQAF suggests that quality assurance of non-statistical indicators should be done at the international level, but national level follow-up is a possibility if non-statistical indicators are communicated nationally. NSOs should list and publish all non-statistical indicators used, providing clarification and more information about these indicators, including information about their uncertainty. It might be difficult or even impossible to specify a quantitative measure of the uncertainty of non-statistical indicators. Self-assessment or expert evaluation are options to overcome this, although these evaluation methods may also be problematic as they are based on assessments.

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[39] https://unece.org/statistics/rm-country-case-studies

[40] https://unstats.un.org/unsd/methodology/dataquality/references/1902216-UNNQAFManual-WEB.pdf

104. A range of different groups use SDG statistics: policymakers, researchers, business leaders, citizens, journalists, statisticians and other specialists. To avoid unintended use, it is essential that all users understand the context and reliability of the indicators. Taken out of context, the indicators will be of limited value[41]. We need to emphasize what the SDG indicators actually indicate and what type of analysis they can and cannot be used for. Policymakers and other advanced users will need more detailed information for decision-making and in-depth analysis. Transparency is essential and documentation such as metadata for the indicators should always be provided, as this gives the user more background information.

2.3. Metadata

105. Metadata for SDG indicators inform users that the data are from a reliable trusted source and that they are fit for purpose. The data can then be used with confidence to make decisions around planning, policy, research, etc. Metadata are important for monitoring SDG indicator data and allow a country to gauge its status in relation to achieving the SDGs. Technical information communicated in the metadata makes the data more accessible, easier to use, and easier to communicate effectively. See the case study by Sweden titled "Metadata for national indicators"[42].

106. It is important to communicate metadata when reporting and disseminating SDG indicator data. Metadata are defined as information about data describing aspects such as:

- Source of the data
- Official source status
- Context of the indicator/proxy
- Data quality
- Methodology used/how the statistics were created
- Analysis of the statistics
- Reference period
- Timeliness

107. **Source of the data**. Metadata inform the user where SDG indicator data come from and whether this is a trusted source. The user then knows whether the data can be used for research purposes and inform the intended audience.

108. **Official source status**. Ideally, official national data from a government organization (which is recognized as the lead on a particular SDG indicator) should be used as the data source to meet reporting requirements for SDG indicators. This is usually the most comprehensive and detailed level of SDG indicator data available. If an official national source of data is not available, data from an established international organization can be used (e.g. FAO, ILO or the World Bank). Both these types of data will have associated metadata and will be trusted sources. Use of an international source of data must be explained (e.g. no national data available).

109. **Context of the indicator/proxy**. For some SDG indicators, a proxy may have to be used. Proxies are used when exact indicator data are not available; an approximation is then sought to describe what the indicator requires. For example, if no data are available for SDG indicator 4.4.1 (Proportion of youth and adults with information and communications technology (ICT) skills), household survey

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[41] https://ec.europa.eu/eurostat/documents/3859598/7862432/KS-GQ-17-001-EN-N.pdf/3a226be6-efe0-4668-b09f-3dcd20f8ff11

[42] https://unece.org/statistics/rm-country-case-studies

data on the percentage of households with a computer could be used. In this case, the metadata must explain why a proxy was used instead of the actual indicator.

110. As some SDG indicators are not relevant in some countries, more appropriate indicators can be used. An example of this is SDG indicator 2.2.2 (Prevalence of malnutrition among children). As this is less relevant in developed countries, reporting on obesity levels might be more important for national needs instead. Again, this would need to be communicated in the metadata of the SDG indicator.

111. **Data quality.** Poor data quality for an indicator must be communicated in the metadata. This includes factors such as insufficient survey sample size, poor survey design, survey bias, etc. This is important information to inform users of the limitations of the data.

112. **Methodology used**. Additionally, users should be informed if the data are extracted from a survey designed for a different purpose. An example of this is using a household survey for information on businesses. While the results might provide some insight, it is necessary to indicate that the methodology is not standardized and therefore not comparable with other business survey data.

113. **Analysis of the statistics**. Metadata should provide details of how the data were analysed for the SDG indicators. Any changes in analytical methods between reference periods should be clearly outlined in the metadata.

114. **Reference period**. Data should be as timely as possible, and the most recent reference period should be provided for SDG indicators. If this is not the case, the metadata should explain why not. In many countries data for SDG Indicator 4.a.1 (Proportion of schools with access to certain facilities) may not be collected on a regular basis because the indicator is inherent in legislation, meaning that schools will not be allowed to open if they do not have certain facilities. In this case metadata explaining why the reference period is not the most recent one would be essential to users.

115. **Timeliness**. How recent are the data? Timeliness refers to the lapse of time between the end of a reference period (or date) and the dissemination of the data.

2.4. Recommendations for NSOs

A. Prepare a short-term quality assurance plan focusing on the most urgent actions, which can be implemented within available resources.

B. If possible, use existing quality assurance working groups (or set up new group if no group exists) to ensure effective quality assurance practices are in place for SDG statistics.

C. Make sure SDG indicators are always accompanied by documentation, such as metadata, to allow users to evaluate the indicators and understand their context.

D. Inform the NSS members and other data producers of their responsibilities in relation to the available quality framework. Non-official producers of statistics might need extra guidance and methodological and technical support.

E. Distinguish between, assess and communicate both the quality of the underlying data sources and accounting system, and of the SDG statistical indicators themselves.

F. Continue work on the development of high-quality SDG indicators to assure their fitness for purpose.

3. NATIONAL COORDINATION MECHANISMS

3.1. Role of the NSO

116.   NSOs play a key role in measuring the achievement of the SDGs. Indeed, the annual progress report on SDGs prepared by the UN Secretary General is based on global indicators and data produced primarily by NSSs. While it is agreed that national statistics are fundamental to the measurement and monitoring of progress of the 2030 Agenda, NSOs – as one of the producers of these statistics within NSSs – can play different roles based on a number of internal factors and external dynamics. For some countries the role may be formalized in budget documents, government announcements, legislation etc. While for other countries, the role may not be formalized for the SDGs specifically, but rather based on standard practice.

117.   In addition, many countries use various other reporting and monitoring mechanisms to present information, including data and statistics to measure progress towards the SDGs. These include VNRs prepared by countries for presentation at the annual UN HLPF, and other country-specific progress-reporting activities and initiatives such as SDG progress reports, data hubs and other data visualization tools.

3.2.   Factors that may influence the coordination role of NSO

118.   Given the various reporting mechanisms, it is important to understand the factors that may impact the type of role an NSO has in the coordination and compilation of data and statistics for reporting on the SDGs, and that this role can differ between national and international SDG implementation and monitoring activities.

119.   The first factor that may impact the coordination role of the NSO is the institutional set-up of the NSS. For instance, in a decentralized NSS, the NSO may report only on data it compiles and produces itself while the other NSS entities report the SDG indicators using data and statistics produced within their organizations.

120.   Legislation may also determine the role of the NSO in coordination. For instance, the NSO may have the authority to report on all statistical matters, thus it would have the de facto role as the coordinator for reporting on SDG statistical indicators.

121.   Not surprisingly, both organizational and technical factors can also influence coordination of national mechanisms on SDG reporting. More specifically, an NSO may not have the organizational capacity required to take on the enormous coordination role related to SDG monitoring, particularly if this includes non-traditional data sources such as earth observation, citizen science data and big data.

122.   A final factor that can influence what coordination activities an NSO will undertake is the political environment. In some countries, NSOs are given a specific role for the SDGs by the government. For example, they can be tasked with compiling data and statistics for the SDGs, but not be given a role in disseminating or monitoring this information.

Figure 3.1
Role of NSOs for the SDGs

3.3. Coordination and collaboration of data producers

123.   The varying modalities of reporting on SDG indicators make it necessary for individual countries to ensure coordination and collaboration of national data producers. On the one hand, this coordination can facilitate a common position in addressing data requests, on the other hand it can ensure a common knowledge of existing data requests and work in a relevant field to avoid duplication of effort.

124.   The establishment of national SDG focal points by UNSD has made the coordination of national replies to data requests easier. Although the national SDG focal points are often NSO staff members, this is not always sufficient to ensure smooth national coordination. Visible support of the appointment by the NSO in matters relating to SDG data is needed to show other data producers what the role of the NSO is, and give them a clear point of reference. Achieving such visibility will require resources and a constant follow-up on national SDG arrangements, but this will pay off in various dialogue situations and will certainly increase awareness and recognition of the NSO's coordinating role.

125.   NSSs vary greatly and there may be different national data producers in individual countries: government agencies, municipalities, academia, civil society etc. One thing they all have in common is the need to ensure that the data they produce for the purposes of the SDG follow-up comply with international statistical standards (see Section 2 on quality assurance of SDG indicators).

126. Coordination and collaboration between data producers relate to both national and international aspects of reporting SDG data. Reporting for national needs, for example for an NRP or

for a specific SDG follow-up product, may seem straightforward, but is nevertheless multidimensional. In other cases, the organization responsible for the production of SDG statistics for national requirements (usually the NSO) may collect data produced by other entities and validate these prior to publishing. Alternatively, the NSO can play a pivotal role in promoting understanding of SDG reporting and monitoring both nationally and globally. For instance, it can help to assess fitness for purpose of data more broadly, identify vulnerable groups (and thus potential disaggregation) specific to the country, establish the quality (and validity) of the data provided, and identify which indicators can be developed or repurposed to report on national SDG priorities.

127.   Coordination and collaboration for reporting SDG data for global purposes is quite a challenge, as the diversity of data and information required is enormous. In addition, the numerous patterns of global data flows and different approaches of data collection by custodian agencies make this an even more complex task.

128.   For indicators solely produced by the NSO, cooperation with other organizations is not necessary. Where cooperation is warranted, however, this Road Map distinguishes three forms of cooperation between national data producers:

129.   First, the NSO and other data producers may share responsibility for producing and/or validating data for a certain indicator. In this case, the NSO will usually reach out to the relevant data producer. Following a subsequent dialogue, the data in question are produced/validated and transmitted to the custodian agency.

130.   An important – but somehow rarely discussed – aspect of coordination with other data producers is the early stage in which this should take place, i.e. when the indicator methodology is being adopted. This adoption can take place in various working groups and be a part of an agenda that does not necessarily strictly relate to the SDGs.

131.   Coordinating at this stage is a tough task. An NSO may not be aware of such working groups, and country representatives in these working groups may be experts in other areas than the SDGs and hence have limited knowledge of the processes and set-up around SDG reporting. This can result in outcomes that are difficult to work with from a statistical point of view. One way to manage this is through improved communication. For example, each actor can appoint an organizational SDG focal point to facilitate communication both within and between organizations.

132.   The creation of interdepartmental and cross-organizational working groups at various levels can also facilitate this. This modus operandi will enable the NSO to scale up national initiatives and its accumulation of knowledge to connect with international standards and SDG frameworks. This in turn may help improve the compilation of new statistics, the adaptation of other data providers' internal regulations to the SDG indicators framework, the reform of statistical capacity development plans, etc.

133.   In the second form of cooperation, a data producer other than an NSO produces and/or validates the data for a global indicator. When this data producer is the sole provider for a certain global indicator, the data can either be transmitted via the NSO or the NSO can be put in copy for the transmission. It is important, however, to ensure that the NSO is notified of such transmissions, as they may be discussed in various forums where NSOs participate.

134.   The third cooperation mechanism concerns coordination of questionnaires for non-statistical indicators requiring involvement of various national stakeholders. If replying to a questionnaire for a non-statistical indicator requires simultaneous involvement of different stakeholders, then it should be clarified which institution is responsible for coordinating the transmission of the completed questionnaire to the custodian agency. NSOs can play a leading role in such clarification, even in cases where they have no expertise in the subject matter of the non-statistical indicator. It is considered

desirable to include the NSO in the communication of both the data requirements from custodian agencies and the information transmission from countries to custodian agencies.

3.4.   Recommendations for NSOs

A) If not already in place, appoint an SDG focal point and communicate this to UNSD and custodian agencies as well as to other government departments and ministries in your own country.

B) Request that each involved national agency/ministry appoint an SDG focal point to allow the NSO to have a single point of entry for that organization to facilitate efficient coordination between players.

C) To avoid confusion and duplication, stipulate the NSO's explicit role within the government on reporting and monitoring SDGs in relevant government documentation (budgets, legislation etc.).

D) Establish and define roles and responsibilities related to the validation of statistical indicators, methodological revisions and refinements, and data flows for the SDGs.

E) Create a working group with members from all data-producing ministries to facilitate communication and collaboration. Under this working group, the creation of thematic sub-groups may also allow for detailed subject matter focussed discussions.

F) Enhance your visibility with regard to your role in reporting to ensure a streamlined process.

4. REPORTING GLOBAL SDG INDICATORS

135. The follow-up and review of the 2030 Agenda relies essentially on the systematic production and provision of data for the IAEG-SDG global SDG indicators[43]. This chapter looks at how data flows are currently organized between the national, regional and global levels and how to potentially optimize these procedures to yield robust globally harmonized SDG statistics efficiently, based on validated aggregated national data. Accordingly, the section focuses on both minimizing the data production burden of countries (including duplication of effort), ensuring country ownership of the data, and minimizing and explaining inconsistencies between data produced by countries and those produced by international organizations.

136. This section is based on recommendations and guidelines drafted at the international level by IAEG-SDGs and CCSA and the findings and recommendations from actual national experiences reported in two pilot studies conducted by a UNECE task team in 2017 and 2018. The section includes information on documents, IT tools provided by UNSD, the SDMX working group, UNECE, custodian agencies and countries to facilitate data exchange.

137. The section comprises four subsections, examining the global data-flows framework, identification of national data providers, different processes and methods of data transmission for global reporting and validation of national data published in global databases.

4.1. Global data-flows framework

4.1.1. The framework set up by the UN resolutions

138. The overarching framework for global data flows was set up by UN resolutions A/RES/70/1 and A/RES/71/313. Subsequently, at the request of the UN Statistical Commission (resolution 48/101), the IIAEG-SDGs provided detailed guidelines[44] on how custodian agencies and countries could work together.

139. By adopting UN Resolution A/RES/70/1, Member States committed to engage in the systematic follow-up and review of the implementation of the 2030 Agenda over the next 15 years (para 72 of the Resolution). The resolution further states that outcomes from national-level processes are to constitute the basis for reviews at regional and global levels, given that the global review is to be primarily based on national level official data sources (para 74). The goals and targets are to be followed-up and reviewed using a set of global indicators, adopted by the General Assembly (para 75).

140. UN resolution A/RES/71/313 (para 6) stresses that official statistics and data from NSSs constitute the basis needed for the global indicator framework. It recommends that NSSs explore ways to integrate new data sources into their systems to satisfy the new data needs of the 2030 Agenda, as appropriate, and stresses the role of NSOs as the coordinator of NSSs.

141. Resolution A/RES/71/313 (para 7) urges international organizations to base the global review on data produced by NSSs, and if specific country data are not available for reliable estimation, to consult with the countries concerned to produce and validate modelled estimates before publication. Furthermore, it advises that communication and coordination among international organizations be

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[43] https://unstats.un.org/sdgs/indicators/indicators-list/

[44] https://unstats.un.org/unsd/statcom/49th-session/documents/BG-Item-3a-IAEG-SDGs-DataFlowsGuidelines-E.pdf

enhanced to avoid duplicate reports, ensure consistency of data and reduce response burden on countries. It urges international organizations to provide the methodologies used to harmonize country data for international comparability and produce estimates through transparent mechanisms.

142.   Resolution A/RES/71/313 (para 8) stresses that all activities of the global statistical system must be conducted in full adherence to the Fundamental Principles of Official Statistics and Economic and Social Council Resolution 2006/6, since high-quality official statistical information is of utmost importance for measuring progress towards achievement of the 2030 Agenda.

143.   Subsequently, in resolution 48/101 (I), the UN Statistical Commission requested IAEG-SDGs to develop detailed guidelines on how custodian agencies and countries could work together to contribute to the data flows necessary to build a set of harmonized statistics for global monitoring. The following year, the UN Statistical Commission requested IAEG-SDGs to work jointly with the custodian agencies to establish a fruitful dialogue between all parties, to further refine the guidelines and to prepare criteria for implementing the guidelines based on best practices and on ways to limit the burden that the envisaged procedure may represent.

144.   For all stakeholders in these data flows, the overarching principle of these guidelines and criteria of implementation [45] is to fully document and make available data sources and estimation or adjustment methods in a way that ensures transparency of the methodology and replicability and reliability of the estimates. On the one hand, custodian agencies should provide clear and complete metadata to countries when they request data, and on the other hand, Member States should provide comprehensive and accurate metadata to custodian agencies when submitting their data.

145.   Custodian agencies should consult with national statistical authorities to identify the most appropriate statistical methods and data sources, based on professional, scientific and statistically robust considerations and internationally agreed statistical standards. Custodian agencies should always provide an opportunity, within a reasonable time frame, for national statistical authorities to review country-specific data and estimates of SDG indicators prior to their release and maintain an ongoing dialogue with Member States whenever there is disagreement.

146.   Custodian agencies should minimize the data reporting burden for NSSs where possible by using existing reporting mechanisms or NRPs and promoting the use of appropriate data transmission standards such as SDMX and WEB API. Custodian agencies should collaborate, so that countries receive a request for data for an indicator only once.

147.   Custodian agencies should provide technical assistance to Member States through their NSO if requested. Member States should aim to strengthen data collection practices and capacity-building in their own countries.

148.   Procedures for data reporting from NSSs to international and supranational systems vary considerably across agencies and countries. Nevertheless, Member States and custodian agencies should promote the coordinating role of NSOs in reporting on the SDGs by keeping them systematically informed on data collection and validation processes related to SDG indicators.

4.1.2.   Reports on data-flow case studies and global reporting and recommendations

149.   Providing data for the SDG indicators requires unprecedented collaboration and complex coordination across the international statistical system. Therefore, the UNECE CES Expert Meeting for SDGs, custodian agencies and UNSD agreed to examine more closely existing and emerging data flows for providing statistics on global SDG indicators and to explore methods to facilitate understanding

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[45] https://unstats.un.org/unsd/statcom/50th-session/documents/2019-2-IAEG-SDG-E.pdf (in the Annex of the IAEG-SDGs report).

and agreement between NSOs and custodian agencies regarding harmonized global statistics for the SDGs. In 2017 and 2018 two pilot studies[46] were undertaken by a task team on data flows. The second study focused mainly on the difficulty of validating data not produced by NSSs, but for example by custodian agencies through modelling, geospatial information, or other data sources generally outside of the purview of NSOs.

150.   Based on concrete examples of different types of current data flows, two reports were drafted, providing concrete recommendations to improve data flows. They contributed to the principles and best practices of data flows prepared by IAEG-SDGs. Following the two pilot studies, several countries in Africa and the ESCAP region carried out similar exercises. All this information is available on the UNECE website, with links to the main documents[47].

4.1.3.   Tools provided by UNSD to facilitate data exchange

151.   In accordance with the UN Statistical Commission decision (48/101(k)), which takes into account all these recommendations, UNSD provided:

- A dashboard[48] with agency focal points for each SDG indicator and contact details of persons in charge of the indicator, a calendar of data collection including frequency and in some cases the national organization providing the data.

- A list of national focal points. Countries are requested to update this annually. For confidentiality reasons, this list is not published on the website but directly communicated to the agencies.

- An e-handbook[49] and a repository[50] with metadata for each SDG indicator (limited to collected indicators); this is available on the SDG website.

- The UN Global SDG Database[51], with global and harmonized national indicators; this is available on the SDG website. Data for this database are provided only through the custodian agencies. Data can be visualized, downloaded in Excel format or using SDG APIs[52].

- An overview of data and metadata updates[53] including links to the updated metadata in track changes.

- A Country Data Lab[54]; this was built by UNSD to enable country-level data and country data harmonized by agencies to be published side by side. The lab aims to identify discrepancies between national and international data to facilitate the dialogue between countries and

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[46] https://statswiki.unece.org/download/attachments/127666441/2017%20Data%20Flow-Report.doc?version=2&modificationDate=1559554793082&api=v2 and https://statswiki.unece.org/download/attachments/128451079/2018%20Data%20Flows%20Pilot%20-%20Final%20Report.pdf?version=1&modificationDate=1560770931592&api=v2.

[47] https://statswiki.unece.org/display/SGSDGCES/Task+Team+on+Data+Flows+for+SDGs

[48] https://unstats.un.org/sdgs/dataContacts/

[49] https://unstats.un.org/wiki/display/SDGeHandbook/Home

[50] https://unstats.un.org/sdgs/metadata/

[51] https://unstats.un.org/sdgs/unsdg

[52] https://unstats.un.org/SDGAPI/swagger/

[53] https://unstats.un.org/sdgs/indicators/SDG_Updateinfo.xlsx

[54] http://unstats.un.org/sdglab NOTE: Access to SDG Data Lab requires credentials. The individual link, login and password are provided to NSO/national institution as SDG single country entry point.

custodian agencies. Data for this database are provided only through the NSOs or other national institutions acting as SDG statistics and indicators focal points.

- The SDG data structure definition (DSD)[55]. To allow automatization of data exchange, the IAEG-SDGs SDMX working group released the first official DSD in June 2019. Currently used by a number of countries, the DSD includes attributes such as nature of data points, observation-level footnotes and time-series footnotes, which provide information on who produces and disseminates or adjusts these data (country data/country-adjusted data, global monitoring data, estimated). These attributes clarify the origin of data and contribute to a better understanding of discrepancies between national-level and international-level country data. A metadata structure is expected to be released in 2021. The working group will also develop a website with guidelines for using the global DSD for SDG indicators and customizing it for national dissemination with tutorials, best practices and other useful materials.

152.   The CES task team on data transmission also shared materials on SDMX data flows to facilitate the dialogue between statisticians and IT staff. These materials can be found on the UNECE wiki pages[56].

4.1.4. Complex exercise

153.   The complexity of the different data flows as well as the complexity of custodian agencies' governance contribute to the overall complexity of reporting data for SDG indicators.

154.   This complexity partly stems from the fact that **the** SDG reporting did not start from scratch. The search for global SDG indicators started out from existing international indicators[57]. Most indicators available at the start of the SDG process which were conceptually clear and based on internationally established methodologies and standards were already well-known and collected through established data flows from countries to international organizations. This was the case for instance for ODA, poverty rate and employment. While some of these indicators were collected at the national level by NSOs, others were collected from line ministries or other government agencies and NSOs were therefore sometimes not aware of the corresponding data flows, metadata or international harmonization procedures. To facilitate data transmission and minimize the burden on countries, some agencies have already developed online platforms, secure portals, and even SDMX data flows to feed their databases. Some data are also pulled directly from intermediary data compilers. Examples of these existing data flows are provided in a background document of the 50th UNSC[58].

155.   Some indicators are directly linked to a political framework that also draws on various commitments expressed in international conventions and agreements. As a result, ten to twenty per cent of indicators are not statistical and are out of the usual scope of official statistics. To facilitate their identification, IAEG-SDGs guidelines invited UNSD to produce the list of these non-statistical indicators, but as of winter 2021, this has not been supplied. To carry on their work, statisticians need to identify the data providers for these indicators, within or outside the statistical system. To do this, there is a strong

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[55] https://unstats.un.org/sdgs/iaeg-sdgs/sdmx-working-group/

[56] https://statswiki.unece.org/display/SFSDG/Task+Team+on+Data+Transmission

[57] To prepare the follow-up of SDGs, the Friends of the Chair Group on Broader Measure of Progress (FOC) produced a compendium of statistical notes to all issues briefs from the Open Working Group on SDG.

[58] https://unstats.un.org/unsd/statcom/50th-session/documents/

need for collaboration with the different stakeholders within countries (see also Section 3 on national coordination).

156. From the custodian agencies' perspective, managing data flows and coordinating with countries and other agencies are equally challenging, not least since the custodian agencies' governance structures are complex and diverse. This was illustrated in a note[59] by UNECE in 2018 (see Figure 4.1). Over fifty custodian agencies are responsible for 231 indicators; 176 indicators fall under just one custodian agency, but 63 indicators are monitored by more than one custodian agency[60]. The relationships between these custodian agencies are complex and not immediately apparent to those not well versed in understanding the functioning of the very large and diverse UN system. Moreover, although most of the custodian agencies reside within the UN system, over one quarter do not.

157. Different models can be used for national reporting on global SDG indicators, depending on the character of the NSS: centralized models for reporting, including an NRP and quality assurance mechanism (Figure 4.2), or models with decentralized responsibilities for the SDG indicators reporting (Figure 4.3) or "In-between" models.

158. In a centralized model, the NSO is the coordinator of all SDG statistical reporting. The NSO will typically collect and store all data in a centrally held database. It could also apply a mechanism for validating the data collected (which may include delegations to national statistical programmes) and send or otherwise make available the indicators to the custodian agencies and other users. This model could be applied to all indicators or be limited to statistical indicators only.

159. In a decentralized model, the responsibility for providing data on SDG indicators is decentralized to the entities responsible for producing statistics for the particular indicator, dispersed over many agencies or line ministries. A decentralized model could be associated with the notion of "soft coordination", where the coordination body may issue guidelines and provide training and forums for relevant agencies. Nevertheless, the level of ambition may range from simply keeping track of who supplies statistics for which indicators to which custodian agencies, to coordinating all collection, transmission and quality assurance related to the SDG indicators.

160. The models described above are two extremes, and most countries will probably choose a model somewhere in between. The quality assurance role of the centralized model could range from acting as a "post-office" and simply making data available on NRPs to undertaking various degrees of control, from basic validation to full quality control. The role the NSO takes will typically depend on already existing national legislation and policy mechanisms.

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[59] https://undocs.org/ECE/CES/2018/39

[60] Idem. According to the analysis made in 2018. After the 2020 review, the global indicator framework includes 231 unique indicators. The total number of indicators listed in the global indicator framework of SDG indicators is 247 with 12 indicators repeated under two or three different targets. The list of indicators has been adjusted but the number of agencies which are involved has very slightly changed.

Figure 4.1
Custodian agencies responsible for SDG indicators
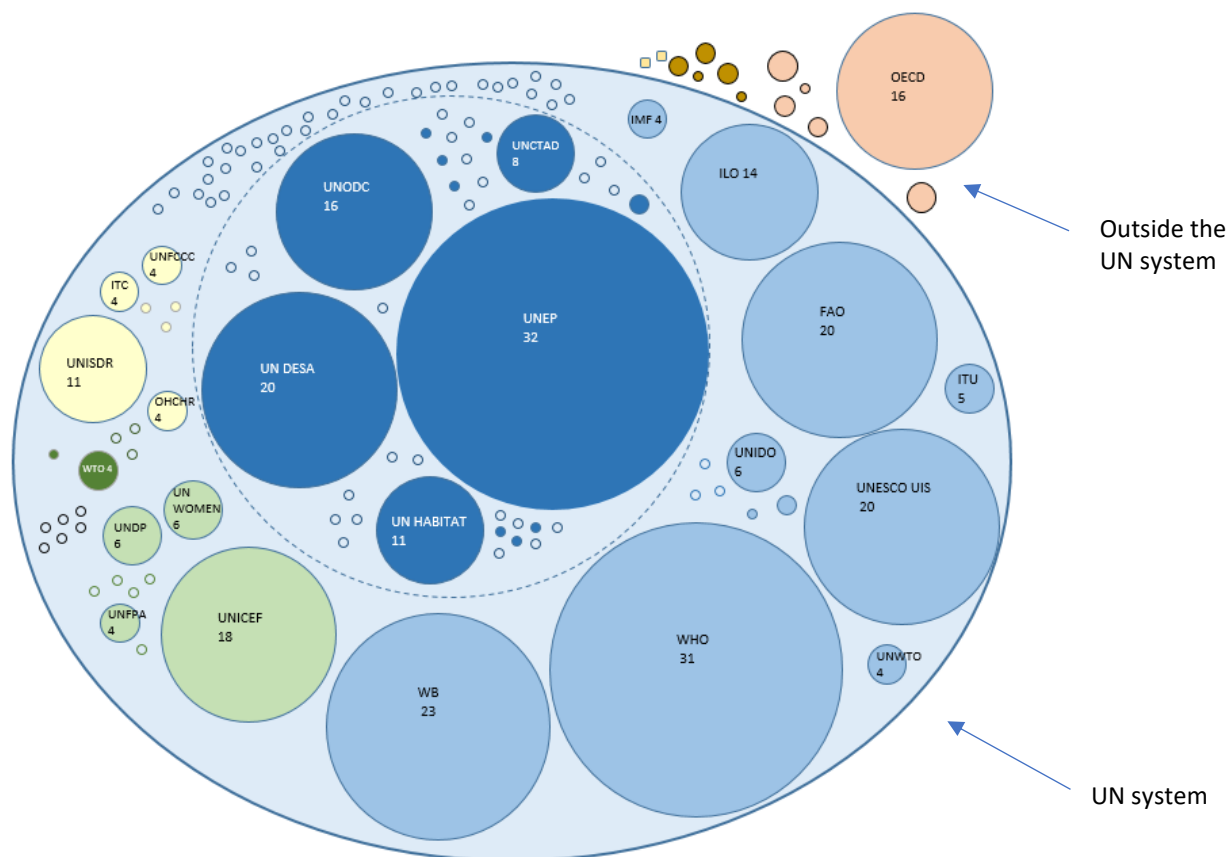
Legend:
Agency icon size is proportional to number of indicators it is responsible for.

Colour	Agency
Blue	UN Secretariat
Light blue	Specialized agencies within the UN system
Green	Other funds, programmes and related organizations (outside the UN Secretariat)
Yellow	Other UN entities outside the Secretariat
Gold	Member States and coalitions
Brown	Conventions
Pink	Other international organizations

Figure 4.2
A centralized model for reporting, including an NRP and quality assurance mechanism
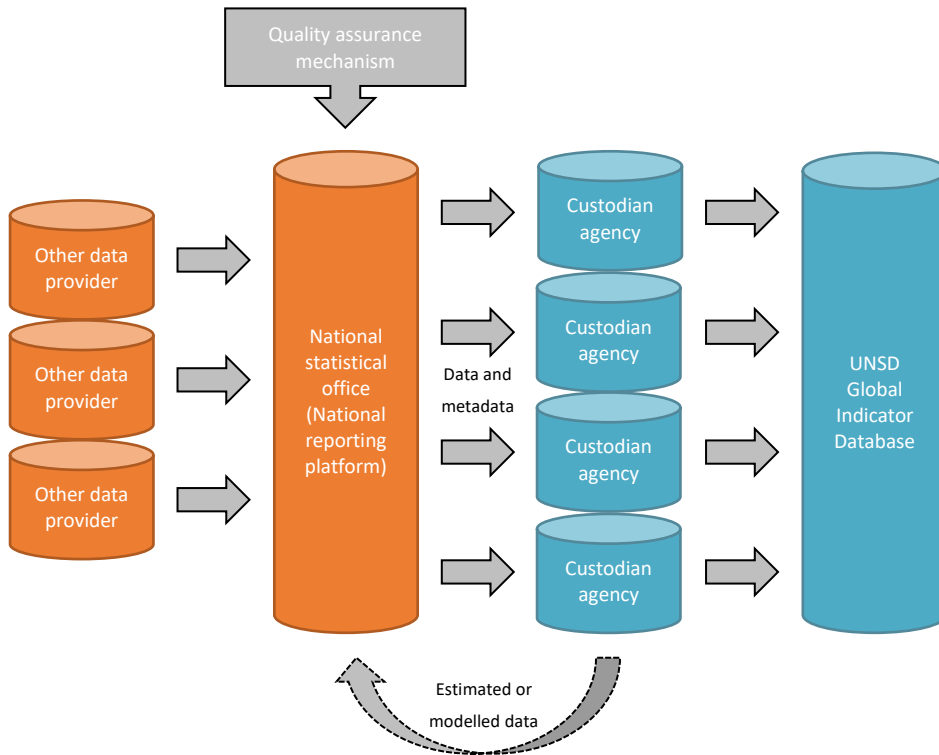
Figure 4.3
A model of decentralized responsibilities for SDG indicator reporting
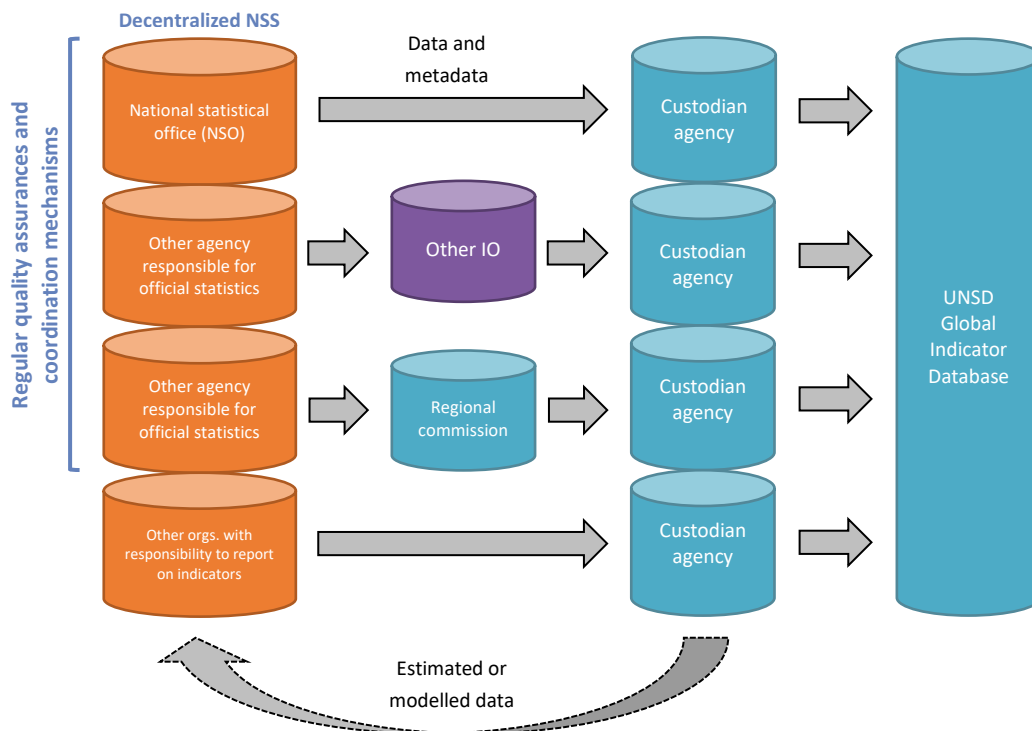
4.2. Identifying national data providers

161. As mentioned above, the 2030 Agenda states that NSSs should be fully involved in the follow up and review process for the SDGs.

162. Although this is a new indicator framework designed specifically for the SDGs, many existing data sources will be aligned with the SDG indicators, even if they do not match the global methods exactly. Therefore, one of the first steps countries should take is to identify these existing data sources and data flows between the country and custodian agencies, and then ensure that these national data providers become the focal point for the relevant indicator.

163. With respect to data transmission and identifying data providers, further investigation within NSSs is needed in terms of indicator characteristics. These characteristics are listed below and are useful to identify and contact national data providers:

- Nationally not applicable indicators

- Pre-existing and new data flows

- Statistical and non-statistical indicators

- Non-official data

4.2.1. Nationally not applicable indicators

164. NSOs could first identify the indicators that are not applicable in their country (where necessary with stakeholders) in terms of coverage or target (e.g. least developed countries, small island developing states, etc.) or geographic irrelevance (e.g. ocean acidification for countries with no coastal borders). Naturally, data providers are not needed for these indicators.

4.2.2. Pre-existing and new data flows

165. Another clear guidance of the 2030 Agenda states that "data and information from existing reporting mechanisms should be used where possible" (para 48, A/RES/70/1). Whether or not the NSO is mandated to coordinate the NSS, it should collect information on the indicators produced and whether these indicators are already being reported to international organizations. For pre-existing data flows, the national reporting mechanisms (i.e. who transmits what to whom and how) including validation are often predefined and well established (although this does not imply that they always work well in the sense that the outcome is satisfactory for all parties involved). Some case studies were examined in the UNECE pilot[61].

166. Another source for identifying pre-existing data flows is the UNSD national focal points list[62], which contains information on national focal points of data-collecting custodian agencies. NSOs should maintain contact with the custodian agencies, to identify out-of-date focal point information and/or outdated and non-validated reports.

167. Many new data flows are being set up for the SDG indicators. Some of these overlap with related reporting obligations (e.g. Sendai Framework indicators, Paris Agreement) that are also new. In these cases, coordination is essential.

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[61] https://statswiki.unece.org/download/attachments/128451079/2018%20Data%20Flows%20Pilot%20-%20Final%20Report.pdf?version=1&modificationDate=1560770931592&api=v2

[62] https://unstats.un.org/sdgs/dataContacts/

4.2.3. Statistical and non-statistical indicators

168.   Non-statistical indicators contain no statistical variables; these are the indicators in the IAEG-SDGs global indicator list that require a qualitative response (e.g. "yes/no"). For example, the existence of laws or regulations in a certain area can be considered a "non-statistical" indicator. Other non-statistical data results from questions related to the existence of "established and operational policies and procedures". The 50th UN Statistical Commission requested a list of non-statistical SDG indicators, which in turn required IAEG-SDGs to set the boundary for the responsibilities of NSOs. Two concerns can be identified in this respect: the ability of NSOs to determine the quality of information for these indicators and the question of maintaining NSOs' operational independence. These questions are related to the HLG-PCCB's ongoing work on data stewardship. Work continues in this area, and IAEG-SDGs plans to focus on developing guidelines for dealing with non-statistical indicators before they elaborate their list. About ten to twenty per cent of indicators are deemed to be non-statistical.

4.2.4. Non-official data

169.   Non-official statistics are statistics that are produced outside the NSS. There is a significant push to use non-traditional data such as non-official statistics to augment available official statistics for the SDGs. Non-traditional data might be used where no official data are available or if an NSO has established that these data meet the requirements. If non-official data are used, their quality should be assured (see also Section 2 on quality assurance), as illustrated by the case study from Turkey titled "Country experience in the production of some non-official statistics"[63].

4.3.   Automation of data flows

170.   Given the extensive data and reporting requirements of the 2030 Agenda, countries are looking for efficient and effective reporting mechanisms. Starting from the current process of asking countries to provide data, this subsection examines different ways to fulfil these requirements more efficiently. It provides links to case studies experimenting with different solutions.

171.   The subsection presents in more detail the concept of reporting platforms as well as the more technical aspects of data transmission such as Application Programming Interfaces (APIs), Statistical Data and Metadata eXchange (SDMX) and the development of tools such as the Data Lab.

4.3.1. National Reporting and Dissemination Platforms (NRDPs)

172.   The UN Principles of SDG Indicator Reporting and Dissemination Platforms[64] define National Reporting and Dissemination Platforms (NRDPs) as "...a means to report and disseminate national statistics including SDG indicators and descriptive metadata, and refers to a web site, database(s), and associated IT infrastructure, workflows and processes used to collect, store, secure, and ultimately disseminate data and related metadata and documentation in an easily accessible way to reach all target users."

173.   In the context of global reporting and data flows, NRDPs can have the following benefits for efficient data transmission:

- Public accessibility of information.

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[63] https://unece.org/statistics/rm-country-case-studies

[64] https://unstats.un.org/unsd/statcom/50th-session/documents/BG-Item3a-Principles-guidelines-SDG-Monitoring-Reporting-Platforms-E.pdf

- Availability of precise national metadata alongside the data (including any explanations of inconsistencies with other published data from existing data flows), providing transparency of data provenance.

- Interoperability as a result of complying with international and national statistical standards and best practices.

- Provision of open data to enable reuse and to support interoperability.

- Provision of machine-readable data to support automation of data flows.

174.   A UNECE task team on Reporting SDG Indicators using NRPs produced two key outputs for use by countries when implementing NRPs:

- National Reporting Platforms. Practical Guide (December 2017).

- National mechanisms for providing data on global SDG indicators (December 2017).

175.   These outputs and further information on the work of this task team are available on the UNECE wiki pages[65].

176.   Further useful information is contained in a practitioner's guide[66], which notes "Electronic data files can be created in many ways, and data interoperability is greatly enhanced if data is made available using openly documented, non-proprietary formats. For maximum interoperability, data and metadata files need to be published in human-editable and machine-usable ways, and need to be agnostic to language, technology and infrastructure.".

4.3.2. Application Programming Interfaces (APIs)

177.   An API is a piece of software that allows two different applications to "talk" to each other to automate processes. APIs are available from "dynamic" websites, i.e. websites that contain web pages generated in real time which access information from a database. Some websites and NRPs are based on "static" websites, for example NRPs based on the open-source Open SDG platform. A static website contains web pages with fixed content, each coded in HTML and displaying the same information to every visitor. While static websites do not have APIs, which allow querying to specify the data collected, they can make machine-readable data and metadata available in a fixed format at predictable website addresses i.e. predictable URLs. Many of the key uses and benefits noted in this section therefore apply to predictable URLs from static sites as well as APIs from dynamic sites.

178.   Within SDG data flows for global reporting, an API or predictable URL could be used for a variety of different purposes, for example:

- Automated collection of country data and metadata by others:
  If country SDG data and metadata are available via an API or predictable URL, custodian agencies, regional commissions and anyone else would be able to automate collection of relevant data. To enable more efficient loading into the custodian agencies' systems, it would be helpful if the data and metadata structure were mapped to the agreed data and metadata structure definitions (see subsection on SDMX).

- Automated acquisition of data by a country:
  If the ministries and organizations from which a country collects its data make the data available via an API or predictable URL, manual acquisition processes could be automated,

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thus saving time. For example, the United Kingdom uses Python scripts to pull data via APIs and then format them for quality assurance before loading them into the SDG reporting platform.

- Interoperability between systems:
  Data available through an API in an extensive data store could be used to feed into a separate SDG-specific user interface. For example, Kyrgyzstan is exploring the potential use of Stat suite, and the SDMX API from that system could be used to directly feed its SDG NRP based on Open SDG.

Figure 4.4
Example of a potential data flow using APIs
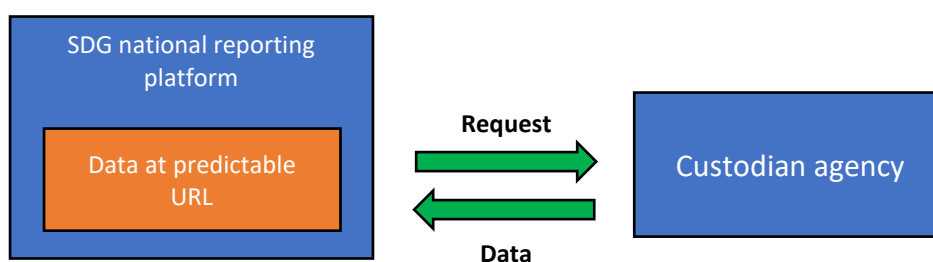
179.   APIs can make the SDG reporting process easier and more efficient. Once the API structure has been set up, a lot of manual work is removed as data flows can be automated through machine-to-machine activity rather than through manual effort.

180.   The Task Team on Data Transmission (TTDT) case studies pages[67] include examples of how APIs have been used to make data flows more efficient.

181.   Examples of APIs include:

- The UNSD API[68] which can be used to access official SDG data reported by custodian agencies.
- INSEE API store[69].

182.   If APIs are used, the OpenAPI Specification can be used for a standardized description of the API formats. The OpenAPI Specification describes the format for RESTful (Representational State Transfer) APIs, which explicitly takes advantage of HTTP methodologies. Swagger is a set of open-source tools which follow the OpenAPI Specification that can help to design, build, document and consume REST APIs. For more information about the OpenAPI Specification and Swagger, see the Swagger about page[70].

4.3.3. SDMX

183.   To facilitate exchange of data across systems, both producers and users of data must have a common understanding of how they are structured. They must also share a common understanding of how the various components of a dataset relate both to each other and to the components of other datasets. Data and metadata modelling can help to create clarity around these issues and is a critical part of ensuring that systems are designed with interoperability in mind from the outset.

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[67] https://statswiki.unece.org/display/SFSDG/Case+Studies

[68] https://unstats.un.org/SDGAPI/swagger/

[69] https://api.insee.fr/catalogue/

[70] https://swagger.io/docs/specification/about/

What is SDMX?

184. Statistical Data and Metadata eXchange (SDMX) is a set of technical standards and statistical guidelines which aim to standardize data and metadata exchange. Like other similar standards, SDMX allows data to be exchanged consistently between different software packages and systems. SDMX is sponsored by seven international organizations.

185. A data model provides a description of all relevant characteristics of the data to be exchanged. In SDMX, the data model is represented by a Data Structure Definition (DSD) and metadata are described through the Metadata Data Structure.

What is a Data Structure Definition (DSD)?

186. A DSD is required as part of SDMX. The SDMX-SDGs Working Group is responsible for developing the SDG DSD – version 1.6 was published on 1 October 2021 and is available on IAEG-SDGs page[71].

187. DSDs provide characteristics and specify the structure of the data to be exchanged. They contain information about how concepts are associated with the measures, dimensions and attributes.

188. Three different types of concepts are used to identify and describe data:

- Dimension – used to unambiguously identify an observation. For example, indicator name, year and what disaggregation/breakdown it belongs to (e.g. age = 18 and over and sex = female). In Table 4.1, the dimensions are in green.

- Primary measure – the observation value, at a particular time period, of a particular variable. In Table 4.1, the primary measure is in blue.

- Attribute – gives additional information about an observation but does not identify it. For example, the unit of measure or what type of value it is (e.g. estimate, missing value, etc.). In Table 4.1, the attribute is in orange.

189. The DSD also contains a code list for all coded concepts. For example, a SEX code list may exist for the Sex concept. Possible values for Sex may be Male, Female, Total or no breakdown and the codes may be M, F or T.

190. Un-coded concepts can be free text (e.g. footnote may use free text) or can have their format specified (e.g. area code might have a specified format of five digits).

191. As countries' SDG data may differ, the SDG DSD can be customized. The IAEG-SDGs SDMX Working Group has been focusing on producing guidelines and recommendations for the customization of the global SDG DSD. to support national indicators, disaggregation and subnational geographies.

192. The SDG DSD has been updated, taking into account the 2020 comprehensive review of the SDG indicator framework. The most recent version is available on UNSD website[72].

Table 4.1
An example of data concepts

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[71] https://unstats.un.org/sdgs/iaeg-sdgs/sdmx-working-group/

[72] https://unstats.un.org/sdgs/iaeg-sdgs/sdmx-working-group/
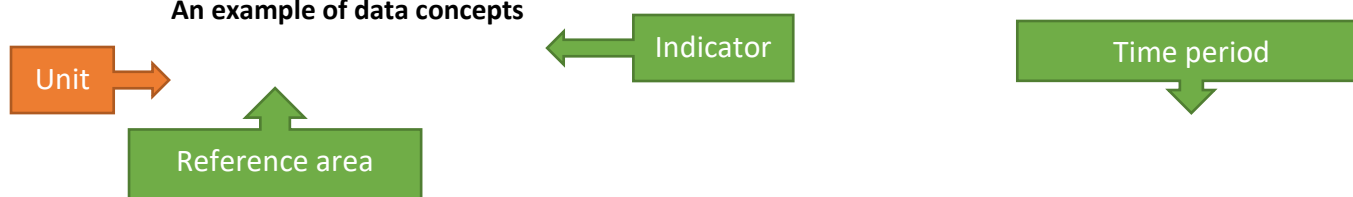
Total population, 1980-2015
(Thousands)

Country	1980	1985	1990	1995	2000	2005	2010	2015
Botswana	898	1 070	1 287	1 469	1 643	1 799	1 987	2 121
Eswatini	588	699	822	927	1 005	1 031	1 065	1 104
Lesotho	1 340	1 526	1 704	1 899	2 033	1 996	1 996	2 059
Namibia	1 058	1 198	1 433	1 628	1 795	1 938	2 119	2 315
South Africa	28 557	32 679	36 801	41 436	44 968	47 881	51 217	55 386
Southern Africa, Total	**32 441**	**37 172**	**42 047**	**47 359**	**51 444**	**54 645**	**58 384**	**62 985**

Source: Data from World Population Prospects 2019 (United Nations publication, 2019)

What is a Metadata Structure Definition (MSD)?

193. Appropriate metadata, such as a definition and limitations, are necessary for a good understanding of the reported data. A metadata scheme specifies the metadata elements that should accompany a dataset. Reference metadata in SDMX can be stored or exchanged separately from the object they describe, but they are linked to it. A Metadata Structure Definition (MSD) is used to enable the transmission of the SDG reference metadata.

194. As well as developing the DSD, the SDMX-SDGs Working Group is responsible for developing the SDG MSD. A draft MSD was released for testing purposes in 2019. A pilot reference metadata exchange was conducted in 2020. The pilot was greatly facilitated by metadata authoring tools developed by the UN Statistics Division which can retrieve rich-text metadata from a Word template and convert it to SDMX. The SDG Lab facilitates the uploading of SDMX data and metadata. Production SDMX metadata exchange for SDG indicators is expected to be established in 2021. An SDMX artificial programming interface is already available for reference metadata for the Goals and is expected to be populated with all available global metadata in 2021.

Converting SDG data into SDMX format

195. The first essential step to convert SDG data to SDMX format is to map them to the SDG DSD. The SDG indicator data and mapping can then be put into to a conversion tool to produce the SDMX file.

196. Tools available to help implement SDMX for SDG data include:

- Eurostat's SDMX Converter[73] to map CSV or Excel files to DSD.

- ILO's SMART tool[74] to map STATA, SPSS, CSV or SDMX datasets to DSD.

- Eurostat's SDMX Reference Infrastructure[75] to map between any database and DSD.

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[73] https://webgate.ec.europa.eu/fpfis/wikis/display/RMSDE/SDMX+Converter

[74] https://www.ilo.org/ilostat/tools/smart/index.html

[75] https://ec.europa.eu/eurostat/web/sdmx-infospace/sdmx-it-tools/sdmx-ri

Figure 4.5
High-level overview of the conversion process
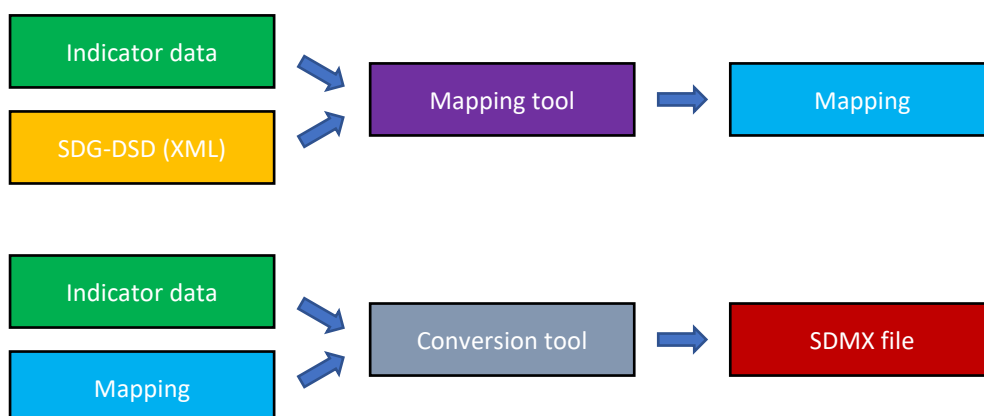
Customizing the global DSD for national use

197.   The global DSD covers global IAEG-SDG indicators and disaggregation. In most countries, specific national indicators and breakdowns are defined that are not present in the global DSD. To support these for national dissemination, a country would need to extend DSD with these national indicators, codes and breakdowns.

198.   Countries might want to establish two separate data flows for SDG indicators:

i.   **Global data flows**, which use the global DSD for the transmission of nationally reported global IAEG SDGs indicators, for example to custodian agencies and UNSD Data Lab.

ii.   **National data flows**, which use the nationally customized global DSD and can be used for the dissemination of the full set of disaggregated national SDG indicators, including nationally reported global SDG indicators and country-specific indicators. The national DSD should be compatible with the SDG DSD conceptual model, i.e. it should use the same dimensions and mandatory attributes.

199.   The IAEG-SDGs SDMX Working Group website includes guidelines and recommendations for the customization of the global SDG DSDI to support national indicators, disaggregation, and sub-national geographies.

200.   Further information on the IAEG-SDGs SDMX Working group is available on the working group's website[76]. Information on SDMX tools is available on the sdmx.org website[77]. Country case studies on using SDMX are available on the Task Team on Data Transmission pages[78]. Presentations and papers on SDMX for the UNECE CES 4th (2020) and 5th (2021) Workshops on Statistics for SDGs focusing on data transmission are available online[79].

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[76] https://unstats.un.org/sdgs/iaeg-sdgs/sdmx-working-group/

[77] https://sdmx.org/

[78] https://statswiki.unece.org/display/SFSDG/Case+Studies

[79] See https://unece.org/statistics/events/workshop-statistics-sdgs for the 2020 session and https://unece.org/statistics/events/SDGstats2021WS for the 2021 session.

4.4. Validation

201. This subsection takes the country perspective on reporting. Countries will predominantly aim to minimize their data reporting burden, ensure country ownership of data and avoid inconsistencies between the data they produce and those produced by custodian agencies. Custodian agencies, on the other hand, will prioritize cross-country comparability and hence compliance with international standards for global reporting, while also aiming to minimize the work burden associated with global reporting.

202. From a country perspective, validation presents a trade-off between country ownership of statistical reporting and the additional burden on time and resources necessary for this. Nonetheless, it can also be an effective two-way exchange between custodian agencies and countries towards optimizing reporting quality and ensuring transparency of the country data published. To achieve this, countries and custodian agencies must work together and understand each other's needs with the aim of coming to an agreement.

203. The UNECE Task Team on Data Transmission is examining the needs and goals of stakeholders involved in SDG reporting via user stories. Drafts of these user stories can be found on the Task Team's user stories pages[80].

4.4.1. A means of quality assurance while ensuring country ownership

204. Quality assurance at the international level requires a process for harmonizing data from different countries. This is especially necessary when available country data do not comply with the international requirements outlined in the global metadata. Custodian agencies should always document any adjustments they make to improve comparability and send the adjusted data to the country concerned for validation. The ensuing methodological exchange between the country and the custodian agency will enable both to explain the discrepancies between national and international country data.

Figure 4.6
Data validation process

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[80] https://statswiki.unece.org/display/SFSDG/User+Stories
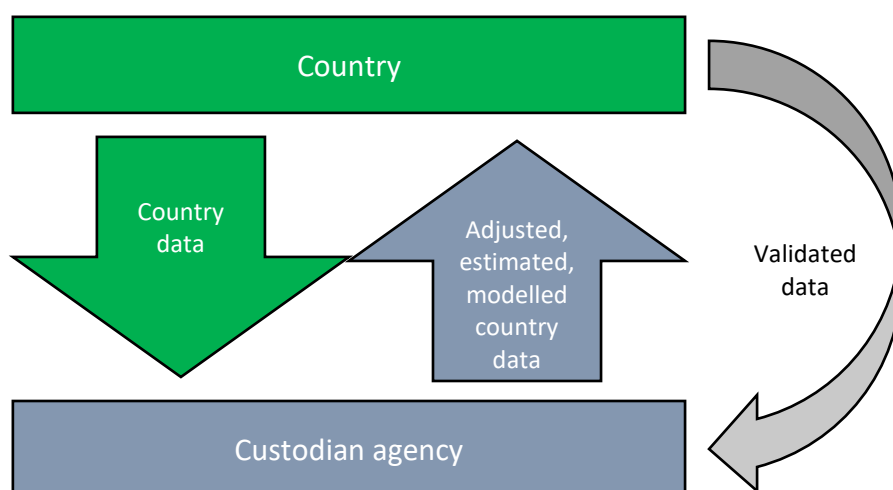
205. Furthermore, if countries do not or cannot provide data for a certain indicator, custodian agencies are often asked to fill the gaps. In these cases, custodian agencies either estimate or model country data. These country data should then be sent to the country concerned for validation.

206. Methods for harmonizing as well as estimating and modelling country data should be published, ensuring transparency and reproducibility, especially of estimated or modelled data. This will also facilitate the methodological exchange between countries and custodian agencies as well as validation of country data.

207. Accordingly, while being an essential means of quality assurance, validation is also a crucial element for ensuring country ownership of reporting at the global level.

4.4.2. Starting point: consensus on necessity of validation

208. Both countries and custodian agencies are in agreement on the value and necessity of data validation. The criteria for the implementation of the guidelines on data flows and global data reporting for the SDGs [81] developed by IAEG-SDGs and CCSA together specifically outline that custodian agencies will:

- Base the compilation of the international time series for SDG indicators on official national data sources where available.

- Provide an opportunity for national statistical authorities to review country-specific data and estimates of SDG indicators prior to their release.

- Ensure that data sources and methods are thoroughly documented and fully transparent to the public and in particular to national data providers, to facilitate validation and the replicability of the data.

- Adequately explain possible discrepancies between national and international data.

- Ensure ongoing dialogue with Member States on the national data reported for global monitoring of the SDGs, in particular when there are disagreements with regard to national data sources and country-specific estimates. Dialogue should focus on maximizing scientific rigour, international comparability, coherence and the implementation of the Fundamental Principles of Official Statistics.

209. While the focus of custodian agencies is on ensuring cross-country comparability and compliance with international standards, NSOs focus on the comparability and consistency of country-specific data published at the international level with their own data. Moreover, the best global statistics are not necessarily the aggregation of raw national official statistics. However, global reporting should be primarily based on national data and statistics produced by NSSs. This results in conflicting priorities.

210. The roles as well as responsibilities of the parties involved must be respected. In this regard, the importance of country ownership of national data and monitoring on the one hand, and the value of global monitoring based on transparently derived comparable data on the other will both have to be taken into account and accommodated.

4.4.3. Arrangements of data validation and some practical advice

211. The logistics of providing data for SDG indicators are quite new and might be revised as best practices are only starting to emerge and the overall process is still maturing. Up to now, implementation procedures and mechanisms have been quite diverse and their outcomes have not

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[81] https://undocs.org/E/CN.3/2019/2

always been satisfactory for the parties involved. The aim of this subsection is to outline different possibilities rather than to present a one-size-fits-all approach.

212. Concrete validation arrangements vary depending on the nature of the indicators and the actors involved. For example, many pre-existing data flows (e.g. for MDG indicators, ODA, etc.) and well-functioning validation systems may already have been established. To avoid duplication of efforts these should be taken into account. As countries are sometimes not aware of these existing data flows, it would be helpful if the custodian agencies could include national focal points alongside the specific indicator focal point (even if the request is broader than the SDGs).

213. In some cases, adopting a pre-existing data flow might be worth striving for if similar or related data are already covered by the existing mechanism.

214. For some indicators, specifically the non-statistical ones, the national counterpart might not be found within the NSS. Here validation will probably be based on more methodological issues and possibly differ greatly from validation of statistical indicators. However, a country's statistical focal point should be copied in all relevant communication to facilitate national coordination. While an NSO might not have a problem publishing these indicators on – for example – an SDG portal alongside clear information on their sources, it often might not be able to produce the indicator itself or vet the quality of the information provided. In this respect it is important to establish and maintain an NSO's operational independence effectively. More information on the process to be followed will be provided by the HLG PCCB's work on data stewardship.

215. In general, it will probably be useful for the NSO to decide which indicators it considers to be non-statistical and determine its stance on the role it can and/or wishes to play in relation to them. Depending on national circumstances it might also start a corresponding national decision-making process.

216. The same might also apply for non-official data sources (e.g. indicator 16.a.1 Existence of independent national human rights institutions in compliance with the Paris Principles, where the data sources are accredited national human rights institutions and hence come from an institution which is neither part of the NSS nor part of government). Here the data source might not be found in the NSS or in any other government entity. Data validation may therefore follow quite a different process. Again, the statistical focal point of a country should be copied in all relevant correspondence.

217. Validation arrangements may also vary depending on the nature of the change introduced in the country data by the custodian agency. These range from adjustments of national country data for comparability purposes to estimating or modelling country data from scratch.

218. Similarly, it might be useful for an NSO to determine which indicators are not directly applicable to its country. Reasons why indicators might not apply are:

- Some indicators apply to only a subset of countries (for example LDCs, SIDS or DAC members).

- Some indicators cannot be reported at the national level (e.g. indicator 10.6.1 Proportion of members and voting rights of developing countries in international organizations).

- Some indicators rely on a common model (e.g. indicator 10.c.1 Remittance costs as a proportion of the amount remitted, where data are collected by the World Bank through a mystery shopping exercise of remittance service providers in 48 countries).

- Some data refer to geographical components that do not occur in some countries (e.g. mountains, oceans).

219. The nature of modifications to country data may also vary depending on the quality of the metadata: some metadata are incomplete, difficult to understand or even inconsistent. Sometimes, metadata are updated, without the countries being aware of any changes made. This poses problems for countries – not only must they check the metadata frequently, but they will also have to compile the data according to a potentially changing methodology. Consequently, custodian agencies will probably also have to adjust the data to maintain sufficient data quality as well. In this respect, consistent, clear, comprehensible and accurate metadata can save everyone involved a lot of unnecessary work. Furthermore, a system of tracking metadata changes would help providers to understand the requirements. Such a system has been set up by UNSD and can be found in the UN Global SDG Database[82].

220. Metadata that impose a specific data source (e.g. 15.4.2 Mountain Green Cover Index) or a method of estimation used by agencies (3.9.1 Mortality rate attributed to household and ambient air pollution) can lead to disagreement and methodological discussions if the data are to be provided by countries. This is specifically the case if prescribed sources or methods generate results that differ significantly from national country data.

221. In consultation with the responsible custodian agency, countries might opt not to validate output on a regular (mostly annual) basis and instead choose to validate the data source and/or methodology only once. This is often the case for indicators not applicable at national level or the so-called "100% indicators": certain indicators that are deemed to be 100% in a given country, while there are no national country data to prove this (e.g. 6.2.1 Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water).

222. Countries might not always be able to validate estimated or modelled data by custodian agencies if for example they have no comparable statistics on or experience with the subject of the indicator (e.g. 2.1.2 Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES) for many European countries). In this case a country might agree to the estimated or modelled country data being used for global reporting until it compiles the indicator itself or until further notice, and validate the method used. The specific indicator in the global database has a footnote to signal that this is an estimate from the custodian agency.

223. Custodian agencies might wish to pull country data from international databases (such as Eurostat, OECD, World Bank, etc.) that already contain many national time series relevant for global SDG reporting. This is certainly a viable option, as long as the country concerned agrees.

224. Validation itself can take many different forms: concrete transmission of data via Excel files, an email exchange, ticking a box on an online platform or in an online questionnaire, an agreement of tacit validation until further notice, etc.

225. Whatever the process, there must be sufficient time for countries and agencies to respond and act. Therefore, it is imperative to schedule enough time for the process and keep the data collection calendar as well as the focal point information up to date.

4.4.4. How to proceed with non-validated country data

226. What if countries and custodian agencies cannot agree on the data or data source used? Here the CCSA guiding principles [83] propose that the disagreement be acknowledged, and relevant explanations be provided when disseminating country-specific data (this is currently not the case in the global database). According to the IAEG-SDGs *Guidelines on Data Flows and Global Data Reporting*

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[82] https://unstats.un.org/sdgs/indicators/SDG_Updateinfo.xlsx

[83] https://unstats.un.org/unsd/accsub-public/Principles_stat_activities/Ltr-CoChairs-Principles.pdf

for the Sustainable Development Goals[84], country estimates pending validation or explicitly denied validation may not be published by custodian agencies in the global database, but may be used for the calculation of regional and global aggregates. This ensures regional and global reporting while respecting country ownership of national reporting. As the "Criteria for the implementation of the guidelines on data flows and global data reporting for the Sustainable Development Goals" developed by IAEG-SDGs and CCSA together do not address this issue, it seems that a consensus has yet to be found.

227.   In 2018, the UNECE Task Team on Data Flows[85] drafted a proposal for the status of country data in the SDG database to be flagged for each indicator in terms of origin ("produced by country", "adjusted/estimated/ modelled by custodian agency") and validation status ("validated by country", "validation pending", "not validated by country"). This would allow country data to be reported without having to wait for validation ensuring swifter global reporting. Furthermore, non-response by countries to validation requests – a problem often mentioned by custodian agencies – would not impede global reporting.

228.   Although the task team's proposal received quite some support, there was also some opposition from countries arguing that publication of non-validated country data goes against the idea of country ownership of statistical reporting. In addition, it may be seen to foster discrepancies between national and global country data, without the country having the information necessary to explain the differences – which, in times of fake news, is not a good situation to be in.

229.   No definite modus operandi has been agreed upon yet. The proposal of flagging the validation status was incorporated in the UN Global SDG Database for a short period. Currently, however, the database only flags the origin of data (using (C) country data, (CA) country-adjusted data, (E) estimated data[86], (G) global monitoring data[87] and (M) modelled data[88]), but not whether they have been validated.

230.   UNSD is developing a country Data Lab[89] with the intention of publishing global country data alongside national data on a voluntary basis to facilitate the dialogue between countries and custodian agencies and explain differences between national and global country data. For this to be a success, national country data have to be submitted to the Data Lab via SDMX; global data are taken from the Global SDG Database. Some countries have already submitted data to the Data Lab on a test basis. As submitting metadata via SDMX is not yet possible, differences between national and global country data cannot be explained in the Data Lab. This is also the reason why the Data Lab is currently only accessible for registered users (as testers) and not publicly available. UNSD plans to make it publicly accessible in 2021.

4.5.   Recommendations for NSOs

A.   Strive to obtain a clear mandate defining your role as coordinator of the SDG indicator transmission and your responsibilities concerning the quality assessment of transmitted data.

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[84] https://unstats.un.org/sdgs/iaeg-sdgs/data-flows/

[85] https://statswiki.unece.org/display/SFSDG/Task+Team+on+Data+Flows+for+SDGs

[86] Estimated data are data estimated by custodian agencies.

[87] Global monitoring data are data collected by the custodian agencies using a global survey sent directly to the respondents.

[88] Modelled data are data modelled by custodian agencies.

[89] http://unstats.un.org/sdglab At request, UNSD provide NSOs login and password to access the DataLab.

B. Strive to collaborate with other national data providers and with UN custodian agencies.

C. If possible, use a National Reporting and Dissemination Platform (NRDP) to report and disseminate data for the SDG indicators and related metadata.

D. Explore data transmission standards and automation tools with proven SDG application.

E. Always provide metadata, preferably in machine-readable format.

F. Validate data posted in the Global SDG Indicators Database.

G. Post your country data on the SDG Data Lab, especially when your data differ from those in the global database.

5. TRACKING PROGRESS AT VARIOUS LEVELS

231.   To be useful for policy development at different levels, it is essential that progress towards the SDGs and their targets is measured along the right dimensions. The general framework for monitoring is established by the set of global indicators developed by IAEG-SDGs and endorsed by the UN Statistical Commission in 2016, and by the UN General Assembly in July 2017. This set is designed to measure progress towards the SDGs at the global level and is to be complemented by indicators at regional, national, subnational and thematic levels[90]. Using the goals, targets and the IAEG-SDG global indicator framework as a reference, regional, national and topic-related indicators can be selected so that they monitor the progress towards the SDGs in various contexts, enabling authorities at different levels to take adequate action.

232.   This section describes different sets of SDG indicators already in use and explains how regional, national and subnational indicators can be selected. It also gives an overview of different approaches to building indicator sets, responding to users' needs and making indicators and information accessible to target audiences.

5.1.   Measuring progress in regions

233.   In regional forums throughout the world, countries have called for strengthening of the regional dimension of work on the SDGs. Data availability and needs with respect to monitoring the SDGs vary greatly between the world's regions and a single global database will not suffice as the international source for comparable SDG statistics. Since the inception of the 2030 Agenda, many regions have decided to support statistical work on monitoring the SDGs and have considered regional indicators.

5.1.1.   Selecting and disseminating indicators for the EU

234.   The European Commission has developed an SDG indicator framework to monitor the SDGs and assess progress in the EU context. The EU Sustainable Development indicator set is based on SDG priorities determined by the EU policies and strategies. It was developed based on a broad consultative process, involving many stakeholders such as European Commission services, NSO experts, Council Committees, NGOs and others. The initial EU Sustainable Development indicator set was approved by the European Statistical System Committee (ESSC) in May 2017.

235.   The EU Sustainable Development indicator set is structured along the 17 SDGs and consists of a maximum six indicators per goal. As a result, the number of indicators is limited to around 100, all goals are treated as equally important, and there is an even balance between the social, economic, environmental and institutional dimensions of sustainability. Almost two-thirds of the EU SDG indicators are aligned with the global IAEG indicators; the remaining EU-specific indicators are taken mainly from existing high-level scoreboards of EU policies to ensure the highest possible policy relevance of the set in the EU context. Unlike the global SDG indicators, all EU Sustainable Development indicators are "ready to use", i.e. data are available based on established data collection

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[90] 2030 Agenda, para 75, https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf.

already in place. About one third of the EU Sustainable Development indicators are provided by sources outside official statistics[91].

236.　The EU Sustainable Development indicator set is reviewed annually: this ensures continuous policy relevance by taking into account new EU policy priorities and enhances statistical quality by incorporating indicators from new data sources where available.

237.　The EU Sustainable Development indicator set serves as the basis for Eurostat's annual monitoring report and brochure "Sustainable development in the European Union"[92], its digital publication "SDGs & me"[93] and its dedicated website[94] on progress towards the SDGs in an EU context. In 2020 the SDGs were also integrated in the European Semester and Eurostat provided an annex of the country reports[95], presenting Members State data for the EU Sustainable Development indicator set. Data and metadata are published online in Eurostat's database[96].

5.1.2.　OECD mechanism for assessing the SDG implementation

238.　To assist its Member States, the Organization for Economic Co-operation and Development (OECD) has developed a methodology to compare their progress on the Sustainable Development Goals and targets. Based on the IAEG global list of indicators, the study evaluates the distance for each country from the SDG targets. Providing a high-level overview of countries' strengths and weaknesses in performance across SDGs, the OECD's "Measuring Distance to the SDG Targets"[97] aims to support them in setting their own priorities for action within the broad 2030 Agenda. To capture the effort needed to achieve the different SDG targets, the report applied a standardized method that measures the distance between OECD countries' current performance and where they should be in 2030. This required identifying suitable data sources for indicators to track the targets and reference target values.

Box 5.1
OECD example of SDG indicators selection

The UN Global Indicator List defined by IAEG-SDGs was taken as a basis for developing the OECD report. The following criteria were used when deciding on SDG indicators:

- Where OECD data aligned with the UN global indicator list exist, the study takes the OECD data (around 43% of indicators used).

- Where no OECD data sources exist, data are extracted from the UN Global Database (around 33% of indicators).

- Where neither OECD nor UN Global Database data are in full alignment with the UN Global Indicator List, then OECD data that are considered suitable as close proxies are used (around 24% of indicators used).

Then, it requires defining a desirable level to be achieved by 2030. Measuring distances from these targets requires a degree of precision that the 2030 Agenda does not always provide. The OECD report follows a four-step process:

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[91] E.g.: Estimated soil erosion by water - area affected by severe erosion rate (source: European Commission Joint Research Centre); Physical and sexual violence to women experienced within 12 months prior to the interview by age group (source: European Union Agency for Fundamental Rights).

[92] https://ec.europa.eu/eurostat/en/web/products-statistical-books/-/ks-03-21-096

[93] https://ec.europa.eu/eurostat/cache/digpub/sdgs/

[94] https://ec.europa.eu/eurostat/web/sdi

[95] https://ec.europa.eu/info/publications/2020-european-semester-country-reports_en

[96] https://ec.europa.eu/eurostat/web/sdi/main-tables

[97] https://www.oecd.org/sdd/measuring-distance-to-the-sdg-targets-2019-a8caf3fa-en.htm

1. Wherever possible, target levels explicitly specified in the 2030 Agenda are used. This is typically a fixed value identified in the wording of the target (e.g. maternal mortality ratio below 70 per 100,000 live births for target 3.1) or, in a small number of cases, expressed as a relative improvement (e.g. reduce at least by half the proportion of people living in poverty for target 1.2).

2. Where no target value is identified in the text of the 2030 Agenda, target levels were drawn from other international agreements (e.g. reduce PM2.5 pollution to less than 10 micrograms per cubic meter, according to WHO) or based on OECD expert judgment (e.g. water stress is considered to be low if total freshwater abstraction is below 10% of total internal renewable resources).

3. If no target value can be identified from either the 2030 Agenda or expert sources, then the target level is based on current "best performance" among OECD countries. This is defined as the 90th percentile – i.e. the level attained by the top 10% of OECD countries (e.g. a recycling rate of municipal waste).

4. Finally, for indicators lacking a clear normative direction (e.g. the share of manufacturing in value added), no target level is set and no "distance" is measured in the report. This applies to around 17% of the indicators used; for these indicators, performance is shown separately.

Finally, to compare performance across different targets, indicator values are normalised using a modified version of the z-score (i.e. distance is expressed as the number of OECD standard deviations a country is from reaching the target level). Thus, the larger the distance, the further the country needs to travel to achieve its target. A zero distance means the country has already achieved the 2030 target. Negative scores mean the country already exceeds the target; these negative values are trimmed to zero in the reported figures.

5.1.3. CISSTAT approach

239.   The Statistical Committee of Commonwealth of Independent States (CISSTAT) was mandated to follow up on measuring the implementation of 2030 Agenda in the CIS region. The decision was supported by the Council of the Heads of Statistical Services of CIS States. In 2016 CISSTAT conducted a survey to assess the suitability of the IAEG-SDG global indicators in the CIS context. The following five criteria were applied:

- Is the indicator relevant for the country?

- Is there a methodology for calculating the indicator?

- Are data available for the indicator?

- Are there data collection plans for the indicator?

- Is it necessary to clarify the title/definition of the indicator?

240.   Based on the survey results[98], 111 indicators were selected and approved at the meeting of the Council of Heads of Statistical Services of the CIS Member States in September 2016. The data, as well as comments and proposals for updates, are collected through annual surveys sent to NSOs. In addition to global indicators, a list of regionally relevant indicators is used to complement the information.

241.   CISSTAT disseminates data on the regional set of indicators through its annual "Monitoring of SDG indicators in the CIS region"[99] statistical abstract and its SDG information platform[100], which is expected to be developed further in the future.

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[98] http://www.cisstat.com/council/55cpcc/5/zap5.pdf (in Russian).

[99] http://www.cisstat.com/sdgs/sb-monitoring_2016-2019.pdf

[100] http://www.cisstat.com/sdgs/

5.1.4. UNECE platform on statistics for the SDGs

242.   In 2020, UNECE set up a regional platform on statistics for the SDGs. The platform includes three parts:

i.   Knowledge hub on statistics for the SDGs[101]

ii.   Dashboard of SDG indicators

iii.   Database of SDG indicators

243.   The purpose of the platform is to communicate developments on SDG monitoring in the UNECE region, to provide easy and quick access to up-to-date SDG indicators, and to disseminate both internationally and nationally available data and metadata. It serves a broad range of audiences interested in the SDGs. The knowledge hub and database primarily appeal to statisticians and other professionals interested in methodologies, indicator comparability and analyses. The dashboard is targeted to the public and to policymakers as an easy way to compare countries in the region in terms of implementation of the SDGs.

244.   The selection of indicators for the dashboard and database is based mainly on an analysis of data availability for the UNECE countries in the global SDG database. The indicators in the CIS, EU and OECD sets have been taken into account, and some indicators relevant to particular UNECE subregions have been included. The set includes both statistical and non-statistical indicators. Other UN Regional Commissions have similar data portals. For example, ESCAP[102] and ECLAC[103].

5.1.5. UN Regional progress assessment of the SDGs using "traffic lights"

245.   The UN regional commissions compile aggregated assessments of implementation of the SDGs in their regions. These assessments use all available data in the UN global SDG database and are based on a common methodology[104]. Results are expressed either at the level of a goal or a target in the form of two indices:

- The Current Status Index, to answer the question "How much progress has been made since 2000?".

- The Anticipated Progress Index, to answer the question "Will the goal or target be achieved by 2030 at the current rate of progress?".

246.   The presentation uses three categories in the style of traffic lights, corresponding to "good progress" (green), "slow progress" (yellow) and "regression" (red) for the Current Status Index, and "maintain progress" (green), "accelerate progress" (yellow) and "reverse trend to achieve target" (red) for the Anticipated Progress Index. The regional commissions acknowledge that such an aggregate assessment cannot reflect the variation among countries.

247.   Data availability varies from region to region. Furthermore, for targets and indicators where the 2030 Agenda does not define a value, the target values are set referring to best-performing countries in the region. These aspects should be taken into account in interpreting any direct comparisons between the regions.

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[101] https://w3.unece.org/sdghub/

[102] https://www.unescap.org/2030-agenda/sustainable-development-goals

[103] https://agenda2030lac.org/

[104] https://www.unescap.org/sites/default/d8files/knowledge-products/ESCAP_Asia_and_the_Pacific_SDG_Progress_Report_2020.pdf

248. The results of the regional assessments were presented at the 2020 HLPF on Sustainable development[105] and the SDG Moment 2020[106].

5.2. Measuring thematic progress at global level

249. The global SDG indicator framework was set up for all countries, with their varying situations and conditions. To analyse the situation for specific subject-matter domains or areas, it is necessary to have thematic reviews. For this purpose, different custodian agencies have developed tailor-made sets of indicators to track the progress in their areas of interest in a more targeted way. Below are some examples.

5.2.1. WHO: Monitoring health for the SDGs – 2021 WHO report

250. With the focus on the health situation unfolding worldwide, the 2021 edition of the WHO report[107] presents the latest data for more than 50 health-related indicators from the SDGs and the WHO Triple Billion targets. The report reveals inequalities both between and within countries on COVID-19 related indicators (cases, deaths, vaccinations and testing), recent trends and levels in life expectancy, healthy life expectancy, global and regional burden of disease and injuries, and services to assist the improvement and provision of health-related services.

5.2.2. UN Women: Progress on the Sustainable Development Goals: The gender snapshot 2021[108]

251. Reducing gender inequality is vital to achieving most of the Agenda 2030 goals and targets. Progress was disparate across the world and was interrupted in many countries by the COVID pandemic. UN Women's 2021 gender snapshot presents the progress based on a list of gender-specific indicators for all 17 SDGs.

5.2.3. FAO: Tracking progress on food and agriculture-related SDG indicators

252. As the custodian agency for agriculture-related SDG indicators, FAO tracks relevant indicators closely through thematic reviews, analyses, and annual reports. The 2021 report[109] is in line with the UN SDGs Progress Chart and analyses the trends, relying on established, quantitative approaches to assess the status of achievement and the trend over time. The methods to analyse progress on numerical targets differ from those for non-numerical targets

5.2.4. UNIDO: SDG 9 Industry tracker

253. UNIDO developed an innovative analytical platform to present industrial development in an accessible format and provide insight into industrial development around the world. It combines reliable statistics and expert analysis with state-of-the-art data visualization tools, making the data-driven content accessible to all. The UNIDO Industrial Analytics Platform (IAP)[110] was launched in 2019 to monitor industrial performance around the world and help countries build capacity towards evidence-based decision-making in this area.

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[105] https://sustainabledevelopment.un.org/index.php?page=view&type=20000&nr=6908&menu=2993

[106] https://www.un.org/sustainabledevelopment/sdg-moment/microsite/reality_check/

[107] https://apps.who.int/iris/bitstream/handle/10665/342703/9789240027053-eng.pdf

[108] https://www.unwomen.org/en/digital-library/publications/2021/09/progress-on-the-sustainable-development-goals-the-gender-snapshot-2021

[109] http://www.fao.org/sdg-progress-report/en/

[110] https://iap.unido.org/about and reference to UNIDO case study on UNECE Knowledge Hub on SDGs https://statswiki.unece.org/display/SFSDG/UNIDO.

254. The platform consists of two main parts:

- **Data Explorer** – an interactive analytical tool allowing users to draw on indicators generated from multiple datasets to track progress in the various dimensions of industrial development. It enables users to study patterns of structural change and identify the role of particular industries within the manufacturing sector and within global production networks. A central element of this part is the SDG-9 Industry Tracker, described below.

- **Articles** – while the Data Explorer can be used to derive insights directly from the data, UNIDO also makes its institutional expertise available in the form of accessible, research-driven articles on issues related to industrial development.

255. As a component part of the platform, the SDG-9 Industry Tracker monitors countries' progress towards achieving SDG-9 industry-related targets of the 2030 Agenda. The SDG-9 Industry Tracker incorporates the SDG-9 Industry composite index with scores of 128 economies starting from 2000, as well as country-level indicators of progress and possible prospects of achieving the targets by 2030.

5.3. Tracking the SDGs at national level

256. The 2030 Agenda encourages all countries to develop ambitious national responses to achieve the SDGs, for example through national strategies[111], and to conduct regular national progress reviews. National SDG indicator frameworks are essential for monitoring implementation of the 2030 Agenda at national level. How national SDG data sets are constructed and maintained is determined by national political decisions on SDG implementation.

5.3.1. Why is the global indicator framework not enough?

257. The IAEG-SDG global monitoring framework was designed to measure progress towards the SDGs at the global level, often putting aside country-specific contexts. Global indicators are focused on international comparability, which is not essential for national follow-up. As a result, global indicators are not necessarily relevant to national realities, which are shaped by different levels of economic advancement, geographic factors, political situations and other aspects, including experience with monitoring sustainable development before the 2030 Agenda[112].

258. Developing a national SDG framework could contribute to better tailored SDG monitoring. Complementary national indicators based on country-specific challenges and priorities enable different actors (government, academia, private sector, NGOs and civil society) to find out where and how they can contribute most in terms of the SDGs. This in turn will increase cross-sectoral mobilization and cooperation for the SDGs.

259. Last but not least, country-specific SDG data sets can be an asset in the preparation of VNRs. At its 47th session, UNSC emphasized that "national ownership is key to achieving sustainable development and that national reviews [...] will take into account different national realities"[113]. In other words, a national monitoring framework makes it possible to carry out a comprehensive assessment of progress, achievements and specific challenges faced at the country level. Equally important, using a national data set in the VNR process provides an opportunity for the country to present its own approach to SDG monitoring and contribute to peer-learning through exchange of best practices internationally.

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[111] See para 78 in https://undocs.org/A/RES/70/1.

[112] See para 56 in https://undocs.org/A/RES/70/1.

[113] See Decision 47/101 (j) from the 47th UN Statistical Commission (https://undocs.org/E/CN.3/2016/34).

5.3.2. Who needs national sets of SDG indicators?

260.   National indicator sets may be the focus of various national groups of data users as they directly reflect their own activities and lives, addressing challenges they observe in particular areas. These users may see the global indicators as referring to more general and universal issues.

261.   Among the most important national SDG data users are **governments and policymakers**. As the SDGs have been mainstreamed into national strategies in many countries, national SDG indicators have become increasingly important for policymaking. Moreover, national monitoring frameworks based on country-specific SDG priorities and challenges can potentially strengthen evidence-based decision-making and enhance the effectiveness of national development strategies.

262.   National SDG data sets could be sought by **scientists and researchers**, both in industry and academia, for research and development purposes. Research results such as linkages (synergies and trade-offs) between goals and targets in a country specific context can help identify challenges and increase the chances for the successful implementation of the SDGs.

263.   **NGOs** could be interested in the 2030 Agenda: they need to demonstrate comprehensive, up-to-date knowledge on the progress of SDG implementation in the country to effectively encourage policymakers, businesses and the public to undertake various activities related to sustainable development.

264.   National SDG data sets provide information to **the general public** with an overview of the status of sustainable development that will be more relevant for them and thus easier to relate to. They are also more suitable for purposes of communication to raise public awareness of the 2030 Agenda and to motivate public opinion towards activities aimed at attaining the SDGs.

265.   **Other groups** (e.g. enterprises and business leaders) could express interest in national SDG data sets, to assess progress made or as inspiration for their own SDG tracking models.

5.3.3. How to approach national SDG indicator sets

266.   National SDG indicators should be tailored to national challenges or policies. Demand for national indicators beyond the IAEG global set depends on the national SDG targets/priorities set (often expressed in national SDG strategies).

267.   There are different approaches to developing a national monitoring framework:

- A country may rely only on the IAEG-SDGs global indicators if it considers them relevant to national SDG challenges and analyse progress based on national data for these indicators.

- Similarly, in addition to the list of global indicators, a country may use indicators from a regional set (e.g. EU), as these will be tailored to countries with similar conditions.

- A country may develop its own national set combining the IAEG global or regional SDG indicators with nationally relevant indicators (i.e. indicators the country itself selects).

- A country may develop a national set that differs from the IAEG global or regional one, e.g. one based on existing national strategies or policy priorities. However, such a national indicator framework does not negate the requirement to report and track progress based on the global list of SDG indicators.

268.   When developing national indicators, careful consideration should be given to how they comply with the criteria set for the IAEG-SDGs global indicators in the 2030 Agenda: "This [indicator] framework will be simple yet robust, address all Sustainable Development Goals and targets, including

for means of implementation, and preserve the political balance, integration and ambition contained therein."[114]

269. National indicators can be selected based on pre-existing national policies or on priorities specifically set for the 2030 Agenda. The selected indicators should be relevant to the goals of the 2030 Agenda in the national context and should always be based on reliable data sources and robust methodologies; they should also be easy to interpret. A balanced, integrated and holistic approach to the selection of national indicators is needed to guard against "cherry picking" from the SDGs.

270. In selecting national indicators, the right balance must be sought between the benefit of nationally relevant indicators on the one hand, and the additional reporting burden and complex communication on the other. NSOs (or other data compilers) should consider sustainable development indicators currently in use for a given region (e.g. Eurostat's SDG indicator set) or national indicators already used for other purposes. Relevant indicators for which data are produced by official statistics following established standards and agreed methodologies should be prioritized.

271. National indicators can serve to fulfil needs of national users. Headline indicators can be used to facilitate communication with policymakers and other data users, although it is important to communicate these with care, stressing that this is strictly a communicative measure and that these "headline" targets are not more important than others. The use of a conceptual framework could help to select and justify a certain set of headline indicators.[115] One such possible framework was developed by a UNECE Task Force on measuring sustainable development and endorsed by the CES in 2013[116].

272. Clear communication explaining different indicator sets is very important, especially if a country provides more than one set (e.g. a global set with data for the country alongside a national set; national and regional sets; national, regional and other sets, e.g. for business). It should always be clear for whom specific sets have been prepared, i.e. main users, intended users, conditions and assumptions underlying construction of the set.

5.3.4. Subnational and thematic initiatives on tracking the SDGs

273. To undertake effective action towards sustainable development, we need to know where we are on the road to achieving the goals and what activities are the most urgent. National SDG strategies set national priorities to be implemented by governments. Alongside national policymaking, implementation of the SDGs requires strong subnational action that involves local governments, communities, private sector and academia.

274. Global and national indicators serve well enough where macroscale information is needed. But what if information on a microscale is required? If, for instance, a local government or a private company wants to assess how its activities affect sustainable development. Global and national indicators are often too general to enable such an assessment. For this purpose, disaggregated data adapted to a micro-context could be considered.

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[114] See para 75 in https://undocs.org/A/RES/70/1.

[115] See, for example the "Recommendations on measuring sustainable development" (2013) by UNECE/Eurostat/OECD.

[116] See https://unece.org/fileadmin/DAM/stats/documents/ece/ces/2013/SD_framework_and_indicators_final.pdf. The framework was later adjusted to bring it in accordance with SDGs, see https://undocs.org/en/ECE/CES/2016/18.

275.   Disaggregated data are data that have been broken down by defined subcategories, for example by sex, age or education level. In the case of spatial disaggregation, data are broken down by territorial levels (e.g. regions).

Indicators for local government

276.   In many countries, local authorities have responsibilities in policy areas that affect the achievement of the SDGs: local planning, civic engagement and social cohesion, and local implementation of national policy. Involvement of local government in the implementation of the SDGs requires specific local policies or plans and an adequate monitoring system of indicators relevant at the local level.

277.   Developing indicators for local follow-up requires access to disaggregated data or administrative data from local government, preferably data that are comparable between different local authorities. Other areas requiring attention are the relevance of indicators at the local level and whether national indicators can be mirrored at the local level or different indicators altogether are required. See also the case study from Sweden titled "Local indicator sets"[117].

Indicators for special interests

278.   The 2030 Agenda calls for participation of all stakeholders (policymakers, business, academia, citizens) in its implementation, follow-up and review. This requires accurate data on a wide range of areas. To assess how specific groups of stakeholders influence the SDGs, dedicated indicators can be developed.

279.   Data demands from different user groups with respect to the implementation of the 2030 Agenda are pushing official statistics to cover new areas and explore new data sources. NSOs are being challenged to redefine themselves and their data systems. On the one hand, this requires expanding – where possible – the scope of official statistics; on the other hand, it provides the chance to supplement official statistics with non-official data.

280.   One stakeholder with a profound effect on sustainable development is the business sector. The 2030 Agenda's encouragement for companies to report activities in support of sustainable development has created a need for frameworks and guidelines to do this. Some ideas for this have been developed at the international level, e.g. the joint Global Reporting Initiative (GRI) and UN Global Compact[118], which recommend the use of corporate social responsibility reporting standards (GRI standard). A similar initiative on measuring the impact of companies on the SDGs has been launched by the UN Conference on Trade and Development (UNCTAD)[119]. Like the GRI standard, the set of SDG indicators developed by UNCTAD is linked to the goals and targets. However, the UNCTAD indicators for entity reporting are limited in number, unlike the GRI's, and cover four dimensions: economic, environmental, social and institutional.

281.   International guidelines may not fit the specificity of companies focused on national markets. Assessing their impact on sustainable development would require a mechanism allowing them to measure their individual contribution to the SDGs in a national context. Countries and NSOs could be involved in these initiatives in many ways. To assess the impact of the whole private sector, official company data might be linked to the SDGs and broken down by economic activity or industry. Another possibility is to conduct a pilot study to find enterprises already active in terms of the SDGs, which would provide information on business contributions to the goals. Alternatively, tools could be

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[117] https://unece.org/statistics/rm-country-case-studies

[118] https://www.globalreporting.org/information/about-gri/alliances-and-synergies/Pages/United-Nations-Global-Compact.aspx

[119] https://unctad.org/webflyer/guidance-core-indicators-entity-reporting-contribution-towards-implementation-sustainable

developed to assess the impact of individual companies on the SDGs using non-official data. All these initiatives will require cross-sectoral cooperation and may bring about a major shift in the responsibility for providing data from NSOs to other groups of stakeholders. See also the case study from Poland titled "Impact Barometer – a set of SDG indicators for Polish business"[120].

5.4. Recommendations for NSOs

A) Conduct a needs assessment for the SDG monitoring in your country to define what should be measured. The existing national or sustainable development strategies implemented in the country can serve as input to what is monitored already.

B) Assess statistical capacity in relation to the needs assessment. Clarify what official statistics is already offering for other relevant strategies and plans and what more it can offer for the SDG monitoring.

C) Develop an action plan or a national road map based on the needs map and available resources, including decisions on a dedicated framework for monitoring and a plan for communication with users.

D) The checklist below may be helpful to develop a strategy for the SDG work at regional or national level:

1. Reach out to the 2030 Agenda stakeholders and identify needs concerning measuring progress on the SDGs (start with policymakers!).
2. Identify available statistics (within and outside the NSO if it is coherent with your policy) and map them with users' needs.
3. Verify the quality of information sources, in particular how well they address users' needs.
4. Minimize the burden. Use existing statistics whenever possible.
5. Note identified data gaps.
6. Define all activities and specific steps to be taken to develop additional frameworks for the SDG monitoring and prioritize them.
7. Determine duration and timeframe for each of the proposed steps, including starting date and expected end date.
8. Present the draft plan to the stakeholders, collect feedback and revise if necessary.
9. Prepare a communication plan for the monitoring framework so that its purpose is clear to users.

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[120] https://unece.org/statistics/rm-country-case-studies

6. LEAVE NO ONE BEHIND

"As we embark on this great collective journey, we pledge that no one will be left behind. Recognizing that the dignity of the human person is fundamental, we wish to see the goals and targets met for all nations and peoples and for all segments of society."

- The declaration of the 2030 Agenda for Sustainable Development,[121] para 4.

282. The SDGs aim to be inclusive: they are to be realized for all people, regardless of location, age, income, gender, ethnicity, religion, ability or any other aspect of identity. The complexity of practically implementing the pledge to leave no one behind (LNOB) is often insufficiently acknowledged. This is also true of compiling the corresponding statistics to measure this.

283. This section explores the different aspects of measuring LNOB groups – data sources, data disaggregation, collaboration with civil society and organizations outside NSOs. It also looks at the challenges involved in measuring the SDG indicators concerned. References to practical examples are included in the section on best practices and case studies. The section ends with several recommendations for NSOs.

6.1. Target population groups

284. When we talk about leaving no one behind, which groups of people do we mean? The 2015 SDG Resolution[122] on transforming our world defined the following groups:

- Children and youth
- Persons with disabilities
- People living with HIV
- Older persons
- Indigenous communities, refugees, internally displaced persons and migrants
- People living in areas affected by complex humanitarian emergencies and in areas affected by terrorism

285. In addition to the groups defined in the 2015 Resolution, the following groups may be considered:

- People living in poverty and people living in deprived regions (the Agenda talks about "the poor and vulnerable")
- All people who feel marginalized by virtue of their circumstances (e.g. LGBT, religion, prisoners, etc.)

286. IAEG-SDGs has presented a list identifying eight groups. In addition to those listed above, these include:

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[121] https://undocs.org/A/RES/70/1

[122] Idem.

- Women and girls

- Rural and urban populations

287. The target groups are related to the disaggregation categories that are required during preparation of the SDG indicators. The most common types of disaggregation are by:

- Age

- Sex

- Geographic location

- Disability

- Income

- Race/ethnicity

- Migration status

288. There is also a national perspective to this: relevant groups can be specified in the context of specific countries. Therefore, some disaggregation categories are relevant at the global level for monitoring the implementation of the targets while others may only be relevant at a national level and need only be followed up in the countries concerned.

6.2. Data for LNOB

289. There are a number of traditional and less traditional sources for data on the LNOB groups. Some comprehensive sources will provide data that need to be disaggregated, i.e. broken down so we can get the data on the specific group concerned. Other sources already concentrate on one specific group and in those cases, disaggregation has already been done. Below we look at the pros and cons of data disaggregation and subsequently at a number of sources for data on LNOB groups.

6.2.1. Data disaggregation

290. Disaggregating data means breaking data down into categories or groups, instead of looking at the population as a whole. The 2030 Agenda calls for data broken down by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts. These categories correspond with the ones listed in para 287 above.

291. Disaggregation allows to highlight groups especially affected by certain issues, helping to allocate resources better, thereby making sure these groups are not left behind. Data disaggregation is not without its problems, one of the main ones being the: risk of disclosing individual data when groups become too small. Added to this, disaggregation into all dimensions and categories requested in the UN resolution would require an enormous amount of data. The IAEG-SDGs Working Group on data disaggregation, for example, has calculated that obtaining cross-tabulated data for all indicators in all dimensions and all categories would result in approximately 700,000 time series[123]. Moreover, disaggregation into all dimensions may not necessarily be relevant. Another example: taken to the extreme, disaggregation of indicator 11.2.1 (Proportion of population that has convenient access to public transport) gives the following result at the international level: 73% of 51-55-year-old Caucasian Catholic women with a migration background, no disability, an income of between US$ 40,000 and 49,999 living in urban areas have convenient access to public transport.

292. As the above example shows, results of disaggregation are not always meaningful at the global level. IAEG-SDGs has therefore decided to focus first on what it calls "the minimum disaggregation

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[123] https://unstats.un.org/sdgs/files/meetings/iaeg-sdgs-meeting-06/10.%20IAEG%20Work%20Stream%20on%20Data%20Disaggregation.pdf

set"[124] for the global level: a set that includes all disaggregation dimensions explicitly referenced in the target or indicator name. It has also asked policymakers and relevant stakeholders what the policy priorities are for different vulnerable population groups, to be able to advise on future focus of data disaggregation. An update of the results of this work was presented in a background document to the UN Statistical Commission's 50th session in March 2019[125].

293.   As policy priorities and the challenges faced by different vulnerable groups may vary between different regions and countries, so will the need for disaggregation. It is therefore advisable to analyse national policy priorities and challenges before deciding on the dimensions and categories required to adequately illuminate the situation for vulnerable groups in a specific country context. Once this exercise has been done, work can continue on how these dimensions and categories can be captured and reported.

6.2.2. Traditional data sources

294.   One of the most traditional data sources for population data are general population and housing censuses. They are the most comprehensive sources of data for the entire population. They collect data periodically (usually every five or ten years) for every person, making it possible to provide important disaggregated data (religion, ethnicity, marital status, same-sex couples, children, disability, etc.). Combining census data with data from other surveys carried out in inter-census years can help to benchmark and support survey samples. Census data can also be combined with other data sources for specific target groups: e.g. administrative data sources for taxpayers, unemployment benefit, school enrolment, etc.

295.   Other traditional surveys such as labour force surveys, living standard measurement surveys, household budget surveys, demographic and health surveys can carry modules to provide disaggregated data for target populations.

296.   As general population and housing surveys often lack data on marginalized population groups, specific surveys focusing on identified vulnerable groups can also provide direct information without disaggregation (e.g. in France a survey on the homeless population is implemented with a specific protocol as these populations are often not visible in surveys and censuses)[126].

6.2.3. Administrative data sources

297.   In most cases, conducting surveys to measure specific indicators is costly and not always possible for NSOs. Administrative data such as tax data, data on social benefit recipients, education enrolment data, etc. are important sources, either to supplement existing surveys or in the absence of surveys. NSOs should work closely with government ministries and other relevant institutions to identify all possible data sources for the identified LNOB groups. Legislation on official statistics can strengthen the role of the NSO to access administrative data. E.g., CSO Ireland constructed an earnings survey entirely from administrative data sources[127]. France does the same: it produces information on income and poverty distribution at the commune and district level with income tax and social protection data [128], resulting in interactive maps. INE Spain has published a "Household income

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[124] https://unstats.un.org/sdgs/iaeg-sdgs/disaggregation/

[125] https://unstats.un.org/unsd/statcom/50th-session/documents/BG-Item3a-Data-Disaggregation-E.pdf

[126] https://www.insee.fr/fr/metadonnees/source/serie/s1002

[127] https://ec.europa.eu/eurostat/cros/content/constructing-structural-earnings-statistics-administrative-datasets-kevin-mccormack-mary_en

[128] https://www.insee.fr/fr/statistiques/4295611 and https://www.insee.fr/fr/information/4181738.

distribution atlas" which provides the distribution of household income for geographical areas of more than 500 inhabitants[129].

6.2.4. Supplementary datasets

298. Statistics most suitable to measure at national level might not always be suited for breakdowns into different categories. The case study from Sweden titled "Local indicator sets" describes how the country developed a supplementary set of local indicators, solving the problem of their national statistics not always being able to reliably be disaggregated to subnational level[130].

6.2.5. Small Area Estimation

299. Survey estimates are typically not reliable for small populations because sample sizes are often very small, if not zero. In such cases, estimates are usually not precise enough to be published. Small Area Estimation techniques (SAE) are a widely used method to address this issue. These techniques complement the small amount of survey data with model assumptions that link survey data to external auxiliary data. These auxiliary data usually come from administrative sources but could also be obtained through web surveys or other big data sources. SAEs are typically more reliable than standard survey estimates for populations with a small sample size. SAE techniques could be used to obtain estimates for small and vulnerable populations in the context of the SDGs. INSEE France has documented its experience with SAE[131].

6.2.6. Special studies

300. Some of the characteristics that mark a group as "vulnerable" are considered to be sensitive and not suited to be included in general registers. In some cases, there are also legal barriers to collecting such information. By looking at what specific issues are problematic for e.g. LGBT groups, in Sweden relevant authorities have looked at how to use data from the health registers in ways that do not require personalized information being retained. If certain groups have more trouble accessing help – for example to prevent suicide, receive medical treatment or enrol in education, etc. – it may be possible to carry out special studies that could inform the relevant actors and help find policy solutions to prevent the problems identified.

6.2.7. Geospatial data

301. Using geospatial data can contribute in several ways to the LNOB aspect of the 2030 Agenda. The IAEG-SDGs Working Group on Geospatial Information was instituted to tackle LNOB from a statistical and geographic location perspective[132]. The most obvious breakdown is the rural/urban distinction. Spatial breakdowns make indicators more relevant – indicators are generally more relevant to users if disaggregated to smaller or non-administrative, functional geographies. Many social and economic indicators differ significantly between rural and urban areas and should therefore be disaggregated accordingly.

302. Geospatial information makes indicators more accurate and comparable. Instead of using subjective information from perception-based surveys – which may not reach or cover the relevant LNOB groups – to calculate access or exposure indicators, geospatial information can be used to make these indicators more objective and thus more accurate.

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[129] https://www.ine.es/en/experimental/atlas/exp_atlas_tab_en.htm

[130] https://unece.org/statistics/rm-country-case-studies

[131] https://www.insee.fr/fr/statistiques/1380679

[132] http://ggim.un.org/UNGGIM-wg6/

303.   A key element for geo-enabling SDG indicators is the integration of geocoded statistical data (e.g. from the population census) with other geospatial data (e.g. from national mapping agencies). Pilot exercises at global and European level have provided promising insights for SDG monitoring[133].

6.2.8.   Open-source code and technology sharing

304.   Open-source code (Freeware) and technology sharing can help overcome a lack of resources, especially for data dissemination and geospatial solutions. The UNECE wiki contains examples from CSO Ireland's online database, StatBank, using geographic data, for both open-source code for visualizing data at regional level[134] and extracting and combining statistical data[135]. These tutorials allow anyone to download open-source data and software for geospatial visualization for anywhere in the world – combining official census data with shape files for regions of any country.

6.2.9.   Non-official statistics

305.   Non-official statistics, e.g. those compiled by NGOs, charities for homeless people, refugees and immigrants, people with disabilities etc. are also a valuable source of information, as they often focus on the very groups LNOB refers to. CSO Ireland, for example, worked with NGOs to count the homeless population for the Census in 2016. It is important to check the quality of these non-official data and whether they are fit for purpose; often they are not collected primarily for statistical purposes and therefore may not comply with official statistical standards. The case study from Statistics Netherlands titled "Quality criteria for externally sourced data" highlights a quality assessment framework for data from sources outside of NSOs[136]. In addition, see Section 2 on quality assurance.

306.   Citizen-generated data can also have many benefits, including creating new spaces for citizens and governments to engage in public decision-making. It is often a problem-focused data collection method, based on people collaborating to collect data to understand a problem which affects them. Citizen-generated data are typically more disaggregated than data from traditional sources and are often cheaper and more timely than alternative data sources. Again, it is important to take the quality of these data into account.

6.3.   Data challenges for LNOB

6.3.1.   COVID-19: "We are all in the same storm, but we are not all in the same boat" (Inclusive Data Charter, 2020)

307.   At the time of writing, we are still feeling the effects of the coronavirus disease (COVID-19) that has been sweeping across the planet since December 2019. The global pandemic is confronting societies across the world with weaknesses in their economic and social systems. As the disease continues to claim lives and challenges our "normal" way of life and the things we took for granted, the pandemic's effects on both the global and national economies are set to be far-reaching.

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[133] https://circabc.europa.eu/ui/group/c4687299-277c-42f8-8747-dee3f17341de/library/caa346c9-03ec-44fe-9e12-b7599abcfb35/details

[134]

https://statswiki.unece.org/display/SFSDG/Statistics+for+SDGs+Home?preview=/127666441/254672946/IRELAND%20Joining%20a%20table%20of%20data%20to%20a%20Shapefile%20with%20R%20-%20Tanzania%20V4.pdf

[135]

https://statswiki.unece.org/display/SFSDG/Statistics+for+SDGs+Home?preview=/127666441/255492298/python.pdf

[136] https://unece.org/statistics/rm-country-case-studies

308. In this context it is not difficult to understand that the poorest, most marginalized groups will potentially be most affected by COVID-19. This is true of the poorest regions in the world, where overall health is poorer, health systems are less advanced and where living conditions make it difficult to maintain social distance and uphold the hygiene requirements to contain the disease. These are also the places where people are more likely to work in jobs that are high risk, or more likely to be dismissed without any compensation.

309. But the richer countries and regions of the world are also feeling the effects: inequalities are being exacerbated, as already deprived groups in the population are being affected more. Disadvantaged groups in rich countries often have less access to timely and reliable health care, unequal eligibility for unemployment compensation schemes and fewer savings to fall back on. Added to this, the suspension of physical school attendance affects children from poor households most: they are often not in a position to continue education through online means and for many youngsters, missing school meals means they are not getting enough to eat. To sum up: there is a risk that this crisis could intensify existing inequalities, instead of diminishing them as the SDGs intend.

310. To lessen this exacerbating effect, international organizations concerned with achieving the SDGs have called for national and international policies tackling the effects of COVID-19 to be based on a people-centred approach, with respect for human rights, inclusion, gender equality and dignity for all.

311. In this respect, we see that – just as for government policies in "normal" situations – for national COVID containment policies, too, data are playing an important part. A number of important international initiatives have been set up to share knowledge, experience and best practices between NSOs (e.g. ESS[137], UNECE [138], UNSD[139]). However, as we have noted in this chapter, the groups at risk of being left behind are often less visible in official statistics and data, as a result of underreporting in censuses and omission from household surveys. In terms of a crisis like the COVID-19 pandemic, this means that many governments are using incomplete population data to decide on policies to combat the pandemic.

312. Global collaboration, knowledge sharing, and support has been critical in the immediate response to the pandemic, and this is equally true in making data more inclusive. We can only beat the pandemic by ensuring that no country, no community and no person is left behind.

313. The Inclusive Data Charter (IDC)[140] has some examples from its network on how to address data gaps in terms of the pandemic: who is present in the data and who is not? Who collected the data? And for what purpose? Who could potentially be harmed, or fear being harmed because of the data? This is the starting point to identifying and eventually filling data gaps, tackling biases in data collection, ensuring marginalized communities themselves are involved and empowered through data, and ultimately, forging a more inclusive path forward.

314. Before the pandemic, there were already a number of challenges related to finding the right data to monitor the situation of groups at risk of being left behind. Some of them are considered below.

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[137] https://ec.europa.eu/eurostat/data/metadata/covid-19-support-for-statisticians

[138] https://unece.org/general-unece/press/unece-launches-platform-help-national-statistical-offices-navigate-challenges

[139] https://covid-19-response.unstatshub.org/

[140] http://www.data4sdgs.org/index.php/news/covid-19-hitting-poorest-hardest-inclusive-data-can-help-protect-them

6.3.2. Coverage and representation

315.   As people are often measured in a dataset based on their activity, marginalized groups that find it harder to participate in society are excluded and underestimated in analyses. As a result, their voices are rarely heard. Censuses are important in this respect, as in principle they provide complete coverage of the whole population regardless of circumstances. They are organized to include the entire population, which gives a measure of ethnicity, religion, same sex couples, single parents, disability, nationality, etc. However, even the best organized censuses may miss some people, e.g. homeless people and illegal immigrants. In some countries there are also legal restraints with regard to collecting information on ethnicity, religion and/or race.

6.3.3. Longitudinality

316.   Because data are rarely available in long time series, but most often just a snapshot in time, it is difficult to estimate how long people have been affected by circumstances like homelessness, migrant status, etc. Again, censuses can provide a solution here, as longitudinal elements can be measured through data linking (e.g. by name or date of birth). INSEE France uses panel surveys to gain more insight into the underlying dynamics between fixed survey points. It has, for example, a large socio-demographic panel which is monitored through time with census and administrative data.

6.3.4. Timeliness

317.   The lag between data collection and publication is often too long for policymakers to make optimal use of the data collected. Indeed, often the data are collected only after a policy has been launched, to assess a baseline and potential target values. It is therefore important to convince policymakers of the importance of the groups at risk of being left behind. Once data collection on these groups has started, if published quickly, the data can help policymakers to respond quickly. Long data processes could have the effect that the most marginalized are left behind for even longer. In the case of emergency situations, timely data availability is especially important, as we have seen in the case of the COVID-19 pandemic.

318.   Another aspect of this is that timely data are important for media reporting, reminding society — and in turn policymakers — that these problems exist and need to be tackled.

319. Timeliness also emphasizes the importance of good permanent data infrastructure and technology. Electronic data capture with automatic outputs can produce quick snapshots in time for marginalized groups.

6.3.5. Geo-aspects

320.   With respect to urban versus rural areas, OECD and other organizations (e.g. FAO), have longstanding experience in trying to define urban/rural/metropolitan areas. The change from rural to urban is usually not dichotomous and often involves mixed approaches; in some cases, it is an abrupt change, in others it is more gradual. Furthermore, there is no internationally agreed definition of what is urban and what is rural. OECD has moved to the idea of "functionality", based on commuting patterns, to better target policies and facilitate international comparison. Administrative borders are still important however — e.g. for political accountability[141].

6.3.6. Legal restrictions

321.   Certain data (e.g. on ethnic, racial and indigenous identity) are often qualified as "sensitive" or as belonging to a "special category" and their collection, dissemination and use are usually regulated by national and international legislation. The legal frameworks underpinning data collection can influence not only whether relevant information can be gathered, but in some cases also which groups

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[141] http://www.oecd.org/cfe/regional-policy/functionalurbanareasbycountry.htm

are officially recognized[142]. One way to fill gaps which may result from these restrictions is to use proxies. In France, for example, INSEE uses subjective indicators (the category people say they feel they belong to)[143].

6.3.7. Disclosure

322. Data disaggregation — especially simultaneous multiple disaggregation — may result in individuals being identified. To protect data in accordance with confidentiality requirements, disclosure measures are put in place. These ensure that the confidentiality protection provisions are met while preserving the usefulness of the data as much as possible. Disclosure control methods are used to avoid identifying individuals and protect their privacy: data groups that are too small are suppressed (or hidden). Well-known methods in this context are for example the threshold rule, the dominance (or n,k rule) and the P-percent rule, but there are several others[144]. The problem related to disclosure risks is that the people at risk of being disclosed are often precisely those we are trying to identify within the dataset. We can try to avoid disclosure issues by making sample sizes bigger, for example by using observations from multiple years, combining categories or using different data sources.

6.3.8. Communication

323. Another challenge is communicating the necessity of reliable LNOB-group monitoring to strategists within NSOs. Disaggregation, opening up new data sources, incorporating citizen science and geospatial solutions all require time and money, which will have to compete with other priorities within NSOs. This is not only relevant in respect to the 2030 Agenda, but for other statistical domains as well.

324. Communication should also underline the importance of capacity building and sharing resources and experiences. These are important aspects for regions where attention and resources are already strained (see also Section 9 on capacity development).

6.3.9. Harmonization

325. Harmonized definitions improve coherence and comparability of statistics and data. This is particularly important for international comparability and aggregation of official statistics but is also key for comparability or matching different datasets within a country. Inconsistencies in definitions and classifications across surveys and datasets also hinder linkage methods aimed at increasing the disaggregation potential of the available data.

6.4. Recommendations for NSOs

A. Analyse policy priorities and challenges nationally before deciding on which dimensions and categories to use in data disaggregation to chart the situation adequately for vulnerable groups in a specific country context. This will also help to identify data sources for national needs.

B. Work closely with government ministries and other relevant institutions to identify all possible data sources for the groups identified in LNOB.

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[142] https://www.oecd-ilibrary.org/economics/diversity-statistics-in-the-oecd_89bae654-en

[143] https://www.insee.fr/fr/information/2108548 (in French).

[144] See for example http://www.davidpublisher.org/index.php/Home/Article/index?id=32309.html.

C. Look outside the NSO for data (e.g. land registry and mapping institutes; citizen-generated data and civil society (charities, sports organizations, school surveys), international collaborations, etc.).

D. Make use of administrative data sources (e.g. tax data), either in their own right or in combination with traditional surveys.

E. Look for data within the organizations that provide general services to vulnerable groups not yet covered by data.

F. Use modern data-processing techniques to ensure up-to-date and timely external data.

G. Look at academic partnerships and academic/scientific research in areas concerning vulnerable groups.

H. Recognize harmonization of data as important but note that non-harmonized data can still be insightful.

I. Communicate and recognize the need for data to ensure that no one is left behind.

J. Always adhere to statistical disclosure and official data protection regulations (e.g. the EU General Data Protection Regulation (GDPR)[145]) to protect individuals and entities.

K. Collaborate with other national and international organizations to exchange good practices, source code and develop open-source technologies for non-statistical data processing.

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[145] https://eur-lex.europa.eu/eli/reg/2016/679/oj

7. COMMUNICATION OF STATISTICS FOR THE SDGs

"Our journey will involve Governments as well as Parliaments, the UN system and other international institutions, local authorities, indigenous peoples, civil society, business and the private sector, the scientific and academic community – and all people. Millions have already engaged with, and will own, this Agenda. It is an Agenda of the people, by the people, and for the people – and this, we believe, will ensure its success."

- Transforming our world: the 2030 Agenda for Sustainable Development, para 52

326. Communicating data and statistics is an important part of making progress towards the SDGs. However, we need to be mindful of who we are communicating with and how to communicate effectively with them.

"Tell me a fact and I'll learn. Tell me a truth and I'll believe. But tell me a story and it will live in my heart forever"

- Indian Proverb

7.1. Internal communication

327. The first significant factor influencing progress towards achieving any goal is the degree of ownership and commitment of leaders. Getting the support of high-level management of NSOs plays a crucial role in ensuring the successful development of SDG monitoring at the national level. Management usually has the opportunity to integrate the SDGs into strategic documents adopted at the level of the statistical office or at a higher political level, develop a common vision for the project and integrate the SDGs with other existing initiatives and projects.

328. There is also a motivational component to this: if high-level management is personally interested in the effective implementation of the SDGs at the national level and supervises this work, then employees feel the high value of their work, which will contribute to the implementation of this project.

329. The second significant factor in getting a good result is the degree of ownership and commitment from every unit in the NSO. If there is no proper internal communication within the NSO, people will not feel the ownership of the work and will not be as willing to contribute to it.

330. A good tool for coordination purposes could be the establishment of a special unit or team on SDG monitoring within an NSO. This could be a separate unit within the organization, consisting of employees focused on the SDGs. Staff responsible for the SDGs could be appointed in various departments; or there may be a combination of these two schemes (e.g., one person in each department responsible for different areas of statistics and a special unit responsible for coordination). If such a solution is not possible, another option may be to allocate responsibility for the SDG monitoring to units or employees performing other duties. In any solution, a clear division of responsibilities is crucial for effective implementation of SDG-related tasks.

331. Effective internal communication is the key to involving all members of the organization in a common cause.

7.2. Communication with various users

332.   When planning communications and the production of an output, it is important to know both the message and its intended audience to deliver an impactful product that meets user needs and achieves its objectives.

333.   Done correctly, this will often result in different product types or media being used to convey the same message or tell the same story – essentially creating layers of the same product.

334.   This is similar to what a quality newspaper does for its readers in its reporting; if readers read only the headline, they will probably know what is happening, but the more they read, the more they will know about the subject concerned.

335.   In NSOs, the analogy would be using data as a foundation for all outputs, but also providing key points and headline messages to provide a succinct and digestible takeaway. Commentary would then sit somewhere in between.

336.   For example, and to correlate this with typical audience needs of an NSO:

- Expert users will often only require a raw dataset as they are familiar with inferring the finer detail of what is driving the trends.

- Users less familiar with manipulating output data would typically require more commentary and a supporting narrative.

- Casual users, however, may not even know the data exist. They have landed on the NSO's website as a result of entering a question in a search engine and are just seeking the most concise possible answer– using the newspaper example, this would be the headline or key point.

337.   Providing this layered approach ensures that an output can reach the broadest possible audience.

338.   As experience develops and audience needs become better understood, an NSO will have an improved understanding of how best to display its information. For example, if a particular user group responds well to or seeks data displayed graphically, special effort should be made to communicate in this way for that group.

339.   It is important to remember, though, that rarely will one single medium or product meet every user's needs. This is about reaching new and wider audiences, not isolating or neglecting existing ones. Further details can be found in "Principles of SDG Indicator Reporting and Dissemination Platforms and guidelines for their application"[146].

7.2.1. Who are our users?

340.   Because of the all-encompassing nature of the SDGs, there are many diverse users of SDG data. Many of the UNECE Member States have categorized their users into broad groups, such as policymakers, journalists, academics and students. Some countries have developed user personas, a type of fictional profile designed to reflect the types of users who use a website or product in a particular way. More details can be found in the UNECE Task Team on Communications Survey

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[146] https://unstats.un.org/unsd/statcom/50th-session/documents/BG-Item3a-Principles-guidelines-SDG-Monitoring-Reporting-Platforms-E.pdf

Outcomes report[147]. Table 7.1 shows user profiles developed by Switzerland, the UK, and Eurostat. Also included is the first draft of SDG-specific user profiles currently being tested by the UK. The personas have been grouped for ease of communication but cannot be directly mapped to one another.

341. The UNECE working group on the Value of Official Statistics describes the user types outlined in the Figure 7.2 below, plus another group called "non-users". Non-users are a potentially important group of people who may not be using official statistics because they do not need them or have no interest in them, but also because they are unaware of what data are available or because they have data needs that are not currently being met by official statistics.

Table 7.1
User profiles developed by Switzerland, the UK, and Eurostat

Eurostat	*Switzerland*	*United Kingdom*	*United Kingdom – SDG website specific*
Technical advanced user -collects data of high quality for their clients, only interested in raw data. Analytical advanced user - needs to find data sets and download them to do their own calculations and create their own graphs.	Miner – digs deep into the data.	Technical user – needs easy access to specific types of data that they can reformat, cross-reference, and manipulate. Would like a simple API tool with access to all ONS data.	Involved analyst – uses the website because they need to analyse the data. "I just want the data so I can do my own thing with it."
		Expert analyst – written reports give helpful context, but they would prefer to see the data. It has to be easy to find what they want. Needs the impact of methodological changes to be clear.	
Data-oriented intermediate user – looks for statistics on the topics they are writing about. Visually oriented intermediate user – prefers to look at graphs and maps because they are easier to interpret.	Harvester – reaps the tables and graphics.	Information forager – wants to enhance their understanding of the UK using data. Summary reports are too vague. Needs quick access to data in standardized data formats.	Fact gatherer – uses the website because they want to check on something. "I just need to quickly see what progress is being made and check the facts."

| Personally interested light user - occasionally uses an article or data visualization from Eurostat. | Tourist – sees the sights. | Inquiring citizen – wants unbiased information so that they can verify the key points of what they see on the news and on social media. Wants engaging, timely and relevant content with a local and interactive focus where appropriate. | Concerned citizen – uses the website out of personal interest. "Tell me what the goals are and what is being done about them." |
| | | Policymaker – people make important decisions based on their work, so they want data they can trust to build a profile of their region. Needs to understand methodological changes. Data must be easy to find, browse and share. | Connected influencer –uses the website as it adds credibility to what they are doing. "Give me a tool that will support my ambitions and give me a louder voice." |

342.   The image below illustrates different users of official statistics and their data needs[148].

Figure 7.1
Users of official statistics and their data needs
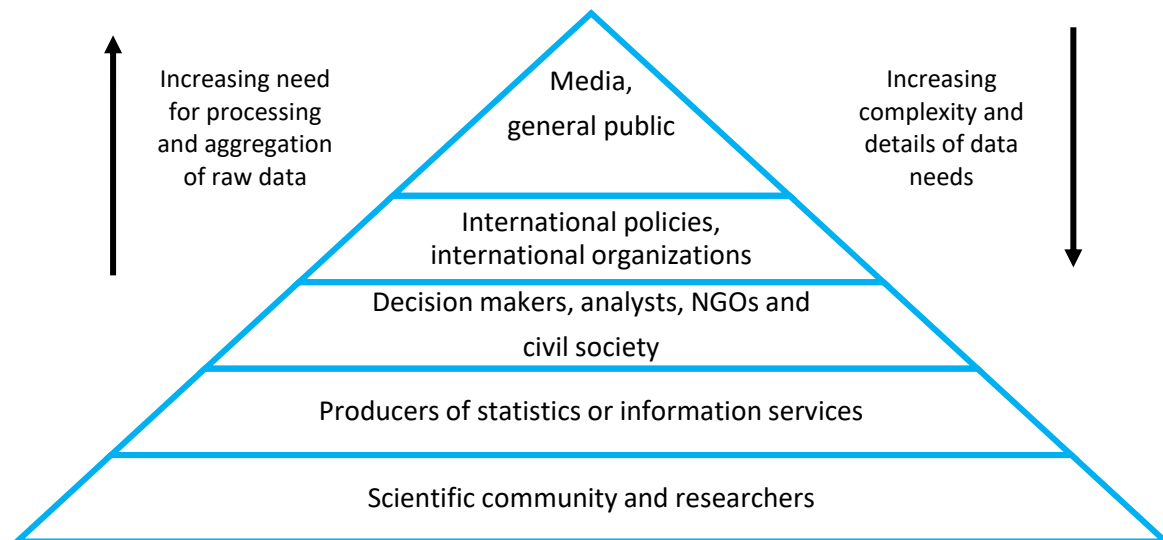
7.2.2.   How do we communicate?

343.   Statisticians gather data, analyse them and interpret them. This last part is key. Statisticians are trained to understand the numbers, but an interpreter's job is to grasp the content of what is being said and paraphrase this understanding using language that the audience will understand. And herein lies the problem. Statisticians are trained to understand the numbers, but are they trained to use words?

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[148] Taken from http://www.unece.org/fileadmin/DAM/stats/publications/2018/ECECESSTAT20182.pdf (page 9).

344.   In recent years, much progress has been made in communicating statistics. We now know to use plain language, avoid jargon and make key points, for example. But as statisticians have adapted, so has the wider world. We are surrounded by more information than ever before. We have 24-hour news, high-speed internet on our mobile phones, various social media platforms, and we are routinely bombarded with fast-paced digital marketing. The result? Attention spans have shortened. Even our plain language, jargon-free statistical publications cannot break through the noise.

345.   So how can we grab our audience's attention? First, as discussed elsewhere in this report, we need to think about whose attention we are trying to get. Once we know who we are targeting, we need to communicate in a way that makes them want to listen to us. The way to do this is through stories. For most people, numbers on their own are not compelling. But people connect to stories at an emotional level. They can relate to the situation, the people that your numbers are describing. Stories increase the audience's engagement with, their understanding of, and their retention of the facts.

346.   We cannot lose touch with our statistical roots completely, however. Our stories must be grounded. We must guarantee confidentiality, protecting the identity of the individual or the business at the heart of the stories. We must aim to inform, not inflame debate.

347.   The following are key elements of compelling, evidence-based storytelling:

- A catchy title: grabs the attention of the reader.

- A strong opening: the first paragraph should draw the reader in.

- Effective scene-setting: make the reader understand why this action was necessary.

- A clear narrative: a description of what has been done.

- A meaningful ending: how did the action from the story make a real, provable difference.

348.   Detailed guidance on telling statistical stories can be found in the UNECE series Making Data Meaningful: A guide to writing stories about numbers[149] which includes:

> Part 1: A guide to writing stories about numbers.
> Part 2: A guide to presenting statistics.
> Part 3: A guide to communicating with the media.
> Part 4: A guide to improving statistical literacy.

7.3.   Non-official SDG progress assessments

349.   In addition to the official IAEG-SDG global list of UN indicators and the UN report, various non-UN SDG monitoring reports are available at the global and regional level. The Sustainable Development Report (formally: the SDG Index report) published by the Bertelsmann Stiftung and the Sustainable Development Solutions Network (2021)[150] is one example of this.

350.   OECD has produced the report Measuring Distance to the SDG Targets[151]. It primarily uses indicators available at OECD level for this purpose, but is increasingly endeavouring to compare them with the UN indicators.

351.   Country rankings with an SDG index, as published by Bertelsmann Stiftung and UN SDSN, have advantages and disadvantages. From both the public and politicians, rankings receive more attention

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[149] https://unece.org/statistics/making-data-meaningful

[150] https://sdgindex.org/reports/sustainable-development-report-2021/

[151] https://www.oecd.org/sdd/measuring-distance-to-the-sdgs-targets.htm

than a complex system of a broad indicator set. Comparison with other countries is easier because a single number can be communicated more easily than several – possibly even opposing – developments in a dashboard of indicators. Rankings get your attention and make you want to understand them, especially if you don't agree with them. All of this is good for promoting interest in the SDGs.

352.   However, the price of these benefits is potentially high, as there is a risk of losing relevant information when you try to communicate complex messages in just one number. Different variables may lead to different conclusions, which could mean that the consistent, easily communicable aggregation may be misleading.

353.   A further difficulty of an SDG index concerns the weighting of individual indicators within the aggregation: is poverty more or less important than GDP or biodiversity?

354.   To sum up: an SDG index may indicate that we are doing well in terms of the SDGs – but does it tell us how are we actually doing?

7.4.   How do different countries communicate?

355.   Countries are communicating and disseminating their SDG data and statistics in many different ways, often based on the categories of users they aim to reach; they use channels such as social media, websites and NRPs. Moreover, data can be communicated in different formats, for example, as infographics, videos, interactive formats, and reports. For case studies examining different ways of communication, refer to the dedicated case study website[152].

7.4.1.   Communicating via different channels

356.   Many NSOs use social media to communicate and interact with their citizens and general users of statistics and information. Twitter is the most common social media platform used, though some countries also use Facebook, LinkedIn, YouTube and Instagram. Social media are a quick and easy way to promote data, statistical research and publications to a wider audience, and can be used to target people who do not usually interact with data and research.

357.   Websites are used by NSOs to improve access to official statistics and metadata. INSEE's (France) website offers different resources for different users – one page is dedicated to teacher and student resources, more advanced users are catered for with methodologies and information around quality, and more general users can access simpler and more interactive information. Likewise, INE-Spain created an informative section on their website, named "Explain", designed to help users understand basic concepts of the activities and statistical work undertaken by INE. This helps to ensure that statistical information is used correctly and statistical culture and literacy are increased in society as a whole.

358.   An increasing number of NSOs are developing and using NRPs to gather, disseminate, and track national or local data relevant to SDG indicators. Countries that have created or developed NRPs to date can be found on the Task Team on National Reporting Platform's wiki-page[153]. In Ireland, the Central Statistics Office, Ordnance Survey Ireland (OSi), Department of Communication, Climate Action and Environment (DCCAE) and Esri-Ireland are engaged in an inter-agency, public and private sector initiative: this consortium – Ireland's Institute for SDGs (IISDG) – is an example of a virtual institute. It was established to source, develop, report on and visualize the statistical data for the SDGs and has developed an NRP as a mechanism for disseminating these data. The UK's NRP is based on

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[152] https://unece.org/statistics/rm-country-case-studies

[153] https://statswiki.unece.org/display/SFSDG/Country+national+reporting+platforms

Open SDG, which is an open-source, free-to-use platform; it has machine-readable data, includes data visualizations, and is multilingual, accessible and fully customizable.

7.4.2. Types of communication

359.   Many different types and formats of communication are available, suited to the various types of users accessing the information. Infographics are often used for general users and are most frequently seen on social-media platforms, such as Twitter. They commonly provide an overview of statistics or important information in a simple and visual way. Statistics Canada, for example, has been using infographics since 2014 to "quickly communicate a message, to simplify the presentation of large amounts of data, to see patterns and relationships, and to monitor changes in variables over time." Videos[154] are a step up from infographics: they have similar aims but can go into a topic in more depth and explain trickier concepts. For example, France uses videos to help citizens understand the statistics they produce and has created interactive tools which allow users to perform simulations, in particular on the consumer price index and age pyramids. The UK NRP also has interactive tools which enable users to explore SDG data, filter by relevant disaggregation, and examine geographical data using maps.

360.   Reports and articles are a common way of communicating statistics and information in a written format. ONS UK has created a range of approaches to report analysis and context around their SDG data. These range from adding additional context to specific indicator pages on their NRP, to both short and long pieces of analysis on specific indicators. These approaches aim to use a variety of mechanisms to target different audiences and users; they will be user tested to see which products best meet different users' needs. See the case study from the United Kingdom titled "Use of social media, NRP and other communication tools"[155].

361.   Statistics Austria produces a yearly report presenting the developments of the key indicators in text and graphics. See the case study form Austria titled "The project "How's Austria?""[156]. It measures prosperity and progress using 30 indicators which reflect "material wealth", "quality of life" and "environment". The ongoing involvement of the central stakeholders (research institutions, interest groups and federal ministries) regarding the selection of indicators is a cornerstone of the project. These discussions guarantee the widest possible national acceptance of the set of indicators. Nevertheless, the final responsibility for the selection of indicators lies with Statistics Austria.

362.   Ireland uses story maps which combine written reports, infographics and maps to communicate its SDG statistics and information. These are a simple yet powerful way to inform, engage, and inspire people with any story to be told which involves maps, places, locations, or geography. A story map was used to communicate the key information in Ireland's VNR in a more accessible format for non-specialist users; it included visuals, videos, maps and charts alongside narrative text.

7.4.3. Useful Resources

363.   A lot of guidance on communicating statistics, or other countries' experiences, is already available online. For example:

Strategic Communications Framework for Statistical Institutions

364.   The Strategic Communications Framework for Statistical Institutions is designed "guide the development and implementation of a communication strategy. This has particular relevance for the world of official statistics, where communication and dissemination have traditionally focused on

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[154] https://www.youtube.com/watch?v=NZjQ1Y6uhKE and https://www.youtube.com/watch?v=fvCd29-h5yo

[155] https://unece.org/statistics/rm-country-case-studies

[156] https://unece.org/statistics/rm-country-case-studies

expert users. With the changing environment, statistical organizations must learn to communicate more effectively and directly with citizens and improve statistical literacy across all audiences."[157]

Recommendations for Promoting, Measuring and Communicating the Value of Official Statistics

365.   The Task Force on the Value of Official Statistics has made a series of recommendations[158]. In brief summary:

- Exploit the value of official statistics.

- Improve the value of official statistics by putting users at the centre of what we do.

- Design statistics for everyday life by differentiating communications for different types of users and by adding context to the data.

- Invest in innovation.

- Develop and build on the brand of official statistics.

- Measure the outcomes of using official statistics.

- Learn and share best practices across the official statistics community.

UNECE Task Group on Communicating Statistics for the SDGs

366.   The report of the Task Group's questionnaire describes how some member states have approached communicating statistics for the SDGs[159].

Eurostat: Getting messages across using indicators

367.   The handbook provides a classification of indicator-based assessment methods and reviews ways to communicate the results. It is the result of the work of the Expert Group on Indicator-based Assessment mandated by the Eurostat Working Group on Sustainable Development Indicators [160].

UNECE: Making Data Meaningful

368.   Part 1 of this series is a practical guide to writing stories about numbers. It can help people "use text, tables, graphics and other information to bring statistics to life using effective writing techniques." [161]

Centre for Open Data Enterprise: Strategies for SDG National Reporting

369.   A review of current approaches and key considerations for government reporting on the SDGs. In this report, the SDG reporting refers to "publishing and disseminating data and statistics on the SDG indicators for key stakeholders, including UN agencies, government policymakers, businesses, non-governmental organizations (NGOs) and research institutions, and the general public."[162].

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[157] https://unece.org/statistics/publications/strategic-communication-framework-statistical-institutions

[158] https://unece.org/statistics/publications/recommendations-promoting-measuring-and-communicating-value-official. The Task Force has prepared a second report focusing strongly on a user-centric approach to determining what constitutes value (to be released in spring 2022).

[159] https://statswiki.unece.org/display/SFSDG/Task+Team+on+Communication+of+Statistics?preview=/128451083/284393737/TTCOM_Survey_Responses-Report.docx

[160] https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-GQ-12-001

[161] https://unece.org/fileadmin/DAM/stats/documents/writing/MDM_Part1_English.pdf

[162] http://reports.opendataenterprise.org/CODE_StrategiesforSDGreporting.pdf

370. IISDG has also provided tutorials in the use of open-source programming languages, R and Python, for the visualization of SDG Indicators from CSO's PxWeb[163] StatBank[164]. These tutorials, available on the UNECE wiki[165], also demonstrate the potential of a PxWeb Platform as an NRP for the SDGs.

7.5.   Recommendations for NSOs

A. Establish clear lines of responsibility for the SDG monitoring within the NSO, ideally through a special unit or team, ensuring senior leaders are engaged and supportive.

B. Identify your target audience(s) for communicating SDG statistics and tailor your outputs accordingly. Knowing the intended message and audience when planning communications will improve the chances that what you deliver will have impact and meet user needs. Using different ways of communicating and having compelling, evidence-based storytelling will engage multiple users.

C. Make use of the wide array of existing resources that will help you identify your target audience and the types of products to communicate your message. Capacity building in this area should centre around NSOs sharing experiences and expertise.

D. Consider having an easily accessible, innovative and updated SDG Webpage to create a 'one-stop-shop' for all official SDG activities. Even if an NSO does not have a an NRP, it is important to have a location with links to all SDG activities, e.g. a webpage on the NSO website linking to all SDG indicators and activities.

E. Consider various social media platforms for disseminating data to new audiences. Again, engage with other NSOs to share experiences.

F. Communicate metadata when reporting and disseminating the SDG indicators data (see Section 2 on Quality assurance for further information).

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[163] https://www.cso.ie/en/databases/

[164]

https://statswiki.unece.org/display/SFSDG/Statistics+for+SDGs+Home?preview=/127666441/255492298/python.pdf

[165] https://statswiki.unece.org/display/SFSDG/GUIDELINES+AND+TOOLS

8. VOLUNTARY NATIONAL REVIEWS

371. The 2030 Agenda established the framework for "a robust, voluntary, effective, participatory, transparent and integrated" review of the progress in implementing the SDGs. The central element of the follow-up at the global level are the regular country-led and evidence-based voluntary national reviews (VNRs) presented at the UN High-Level Political Forum (HLPF), under the auspices of the Economic and Social Council (ECOSOC). Countries presenting their VNR at the HLPF use these reviews to showcase their approach to the SDGs and the progress in their implementation.

372. The 2030 Agenda requires VNRs to be "based on evidence, informed by country-led evaluations and data which is high-quality, accessible, timely, reliable and disaggregated by income, sex, age, race, ethnicity, migration status, disability and geographic location and other characteristics relevant in national contexts." In this respect official statistics play a strategic role, as they provide the data to support the reporting. Countries are encouraged to involve the NSOs in the preparation of their VNR, in view of their coordinating role in the national SDG monitoring process.

373. The NSO's responsibility in the VNR's development is compliant with the UN Fundamental Principles of official statistics and other related standards. It consists of providing robust, objective and transparent statistical information, avoiding any political assessments.

8.1. UN guidelines and handbook on VNRs

374. The UN has two useful tools to help countries prepare VNRs: The Secretary-General's reporting guidelines for VNRs at the HLPF[166] and the Handbook by the UN Department of Economic and Social Affairs (DESA)[167]. The requirements set out in these documents allow flexibility in terms of the form and content of the reports, as long as certain elements are included. One of the proposed non-compulsory elements of the report is an annex with data.

375. The Secretary-General's guidelines and the DESA Handbook include some general directions for statistical annexes:

- The Secretary-General's guidelines state that countries may include an annex with data, using the IAEG-SDG global indicators and adding priority indicators identified at the regional and national levels where appropriate. They may highlight whether statistics were collected by the NSS and pinpoint major gaps in official statistics on indicators.

- According to the DESA Handbook, access to high-quality, up-to-date and disaggregated data are vital for the VNR. Contacts with the NSO and other data providers should be part of the planning process. If a statistical annex is included in the review, more extensive statistics on progress can be included there.

376. Additionally, the DESA handbook suggests some questions to be considered in relation to a statistical annex:

- What criteria were used to select the indicators in the annex?

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[166] https://sustainabledevelopment.un.org/content/documents/17346Updated_Voluntary_Guidelines.pdf

[167] https://sustainabledevelopment.un.org/content/documents/20872VNR_hanbook_2019_Edition_v2.pdf

- How does the annex supplement and support the content of the review? Consider what is more effective – a very comprehensive presentation or a selection of the most relevant indicators?

- What is the most user-friendly format for presenting the data?

- Is it feasible to present time-series data?

8.2. Statistical annexes: best practices

377. To support countries by providing detailed and practical guidelines on how to decide on the form and the content of their annexes, the CES Task Team on Communicating Statistics for the SDGs reviewed the VNRs presented until 2018. The team identified different approaches and best practices in terms of the accessibility, transparency and scope of the information presented. All VNRs presented to the HLPF can be viewed on the UN sustainable development website[168].

8.2.1. What to take into consideration?

378. Countries are free to decide about the form and content of their VNR. This also applies to the statistical annex. However, it is important that the VNR and the annex are consistent with each other.

379. In preparing the statistical annex it may be helpful to consider the following questions:

- **When and where** is the annex presented? As the annex is a part of the VNR report, its concept and the steps towards its presentation depend on the overall government roadmap leading to the VNR and should be included in it. Communication of the annex or its main messages may go beyond presentation at the HLPF, for example if events promoting the VNR among the general public are foreseen: e.g., press conferences or social media campaigns.

- **Why** is the annex being prepared? Possible reasons include to provide more detailed statistical information than presented in the VNR itself, or to provide context to the main message delivered in the substantive part of the VNR. Understanding the reason why the annex is being prepared will help determine its form and content.

- **Who** are the annex's target audiences? Identifying the target audience is important because it will influence the scope of data to be included in the annex and how they are presented.

- **What** is the message of the annex? The key message to be communicated through the annex needs to be clear. For example, is it to present progress towards achieving the SDGs? Is it to showcase national priorities? Is it to show the position of the country in relation to other countries? Or to highlight the challenges the country faces?

- **How** can the message best be presented to the target audience? The presentation and communication of the data should be tailored to the target audience's needs and capabilities. Unless writing for a technical audience, simplicity is key. For custodian agencies, a series of tables may be enough. But for a less technically minded audience, such as policymakers, it will probably be better to use charts, maps and infographics to get the message across. Always be sure to include references to the original data source (See Section 8.2.3 for more information).

8.2.2. Choosing the most suitable approach

380. **Author**. This may be the NSO or another institution, usually the author of the whole VNR (e.g. a ministry). There are some advantages to the annex being compiled by the NSO, as it will have a lot

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[168]https://sustainabledevelopment.un.org/vnrs/

of experience in presenting data to different audiences. It will also be familiar with the strengths and weaknesses of data from a wide range of sources. NSOs are also invested in high-quality development, production and dissemination of statistics in accordance with the UN Fundamental Principles of official statistics and other (e.g. Eurostat's) Codes of Practice. And lastly NSOs know the importance of metadata and how to present them in an accessible way.

381. **Form.** The annex is most often presented as an actual annex, a separate part of the VNR, but including indicators in the substantive part of the VNR is also an option. The decision should depend on the general concept of the VNR and on the availability of national SDG data in existing locations.

382. If the VNR is a broad, comprehensive publication, the inclusion of a separate annex is the most convenient and useful approach for users. In the case of a VNR prepared in the form of short, promotional publication (e.g. Switzerland), presenting statistics in the main body of the report would be more reasonable.

383. If a country has developed a purpose-built platform for monitoring the SDGs, it may be sufficient to include a link to the platform instead of adding a separate annex to the publication.

384. **Purpose and content.** When preparing its VNR, a country may focus on global goals or present its own national priorities. Accordingly, the purpose of the annex may be to inform readers about the country's progress towards the global SDGs (e.g. Lithuania) or to discuss national priorities (e.g. Poland). Some EU countries may decide to focus on the EU approach towards the SDGs and use the EU set of indicators (e.g. Malta). It is also possible to present data for indicators which do not belong to any of the above sets but are considered useful as they give context to the main message of the VNR (e.g. Switzerland). It is essential that there is a logical and consistent link between the purpose and content of the VNR and the annex and that this link is made clear to readers.

385. Countries may present whole sets of the global (IAEG) or national indicators, or selected indicators. Short definitions may be included, or a link can be provided directing readers to a website for more information and more detailed metadata.

386. **Scope.** Countries can present data in a variety of ways, including:

- Statistical time series (e.g. starting in 2010) tracking the indicator over time.

- Data for two years (starting point and the most recent available year) to show a change.

- Data for one year but compared with wider international data (e.g. EU) to assess a country's position in relation to other countries.

- Data for one or more years disaggregated by variables such as sex or age, to show how different groups in the population are faring.

387. **Format**. Data are usually presented in the form of tables (e.g. Cyprus, Lithuania, Latvia, Malta, Poland), but graphs and infographics (e.g. Belgium, Denmark), or short analytical commentaries (e.g. Denmark, Netherlands) are also used. Some countries assess the statistical trend for each indicator (e.g. positive, neutral, negative) and communicate it using symbols (e.g. Switzerland, Latvia), and comment on data gaps (e.g. Uganda).

8.2.3. Presenting the data

388. To present a message effectively, you need to know who you are writing for. Once you know your intended audience you can find and select the right narratives, language, and visual and graphic devices to capture their attention.

389.   **Text.** Text is the main way of explaining the findings, outlining trends and providing contextual information. To be meaningful to an audience, there should be a "story" or meaning behind the data. As readers may lose interest quickly, the most important information should be included in the beginning of the text. The text should further present analyses, trends and context, not just repeat values shown in accompanying tables: focus on the message, rather than the data.

390.   **Tables.** Using tables effectively helps to reduce the amount of data in the text. The data should be presented in a concise, well-organized way that supports any accompanying text. A good table can provide a large amount of information that is quick and easy to understand.

391.   **Charts.** Data can often be better understood, particularly by non-technical users, when they are presented in a chart. A chart is a visual representation of statistical data that enables users to understand comparisons, trends and relationships in the data quickly and easily. However, charts are not always the most appropriate tool to present statistical information. For example, static charts are not suitable when data are very dispersed, have too few or too many values, or show little or no variation.

392.   **Infographics.** This form of data presentation is often used to draw attention and interest of the audience, especially general users. The visual linkage between numbers and the issue that the numbers describe, makes the information more accessible and easier to remember. However, it is important to keep a balance – the information is essential, the graphics should make the data more meaningful, not dominate them.

393.   **Key elements** for the statistical annex. Some elements should always be included to ensure transparency of the information in terms of:

- Author of the annex – this should be clearly visible and easy to find.

- Data source(s) – the data source for each indicator should be specified. If the source is the same for all indicators, it can be stated just once.

- Criteria for indicator selection – it is a good practice to include a short introduction to the annex explaining how the content has been arrived at (e.g. Belgium, Lithuania). This introduction should take into consideration that not all readers may be familiar with the process of SDG monitoring and therefore may be confused by the various sets of indicators (global, regional, national).

- Methodological information and explanatory notes – short definitions may be included in the annex or a link may be provided to a website containing the definitions. It is important to enable easy access to methodological information and other related metadata.

- Methods applied – if the statistical annex includes trend assessments or trend forecasting, the methods used should be documented and communicated in the annex to ensure that they are compliant with the standards of official statistics.

8.3.   Recommendations for NSOs

A.   Promote the use of official statistics in VNRs and strive to build awareness among policy makers on the advantages of official statistics.

B.   Before preparing your statistical annex, study the information on VNRs on the UN Sustainable Development Knowledge Platform[169] and the experience of other countries producing their statistical annexes. There are current requirements and guidelines to help

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[169] https://sustainabledevelopment.un.org/vnrs/

countries prepare their VNRs, including reports and statistical annexes and there are lots of different approaches which may inspire you to find your own way.

C. Be aware of the specific audience of VNRs. This usually includes policymakers, civil society and the public – people looking for facts and accessible information on progress made towards the SDGs, but who have no specific statistical background. Focusing on their needs and capabilities will help to determine the scope of the presented statistics and how they can be communicated in an understandable way. Section 7 includes guidelines on how to communicate statistics to specific types of users.

D. Cooperate with the institution responsible for the VNR in your country. This will ensure consistency between the VNR and the statistical annex (or the statistics used) and strengthen the position of statistics as the means of communication of the follow-up to the 2030 Agenda.

9. CAPACITY DEVELOPMENT FOR SDG STATISTICS

9.1. Developing official statistics for the SDGs – rationale and scope

394. According to the principle of solidarity, countries with extensive experience and expert knowledge in the field of statistics are expected to contribute to international development and technical and institutional capacity-building. The goal of activities in statistical capacity development is to support sustainable socio-economic development, especially of developing countries and their societies, by contributing to evidence-based decision-making, democratization processes and state reforms, and raising the level of education and professional competence.

395. At the first UN World Data Forum in 2016, a wide range of nations and actors noted that, "...effective planning, follow-up and review of the implementation of the 2030 Agenda for Sustainable Development requires the collection, processing, analysis and dissemination of an unprecedented amount of data and statistics at local, national, regional and global levels and by multiple stakeholders." The forum went on to recognize the urgent need for development of NSSs to meet these needs.

396. The statistical community agreed on a comprehensive plan of action to help NSSs meet these needs: the Cape Town Global Action Plan (CTGAP). This plan emphasizes a country-led approach to planning and implementing statistical capacity building to achieve the 2030 Agenda, calling for "...decisive actions to transform how data and statistics are produced and disseminated to inform development policy decisions, with the vital support of governments and in close partnership with stakeholders from academia, civil society, the private sector, and the public at large" (UNSC, 2017).

397. The Dubai Declaration released during the second UN World Data Forum (2018)[170] supports the efforts to implement CTGAP by increasing the demand for financing for better data and statistics for sustainable development, recognizing that important gaps have to be bridged and that both increased domestic resources and international support will be needed.

398. The increasing importance of statistics at a global level and the need for NSOs to be independent of government influence in democratic societies have also strongly influenced the willingness of countries to engage in scaling up their support and domestic resources for developing statistical capacity. In the same way, the UN Statistical Commission called on Member States to become more vocal and to lead the way in the process of global statistical systems, thus empowering NSOs to take measures to improve NSSs.

399. At the December 2017 meeting of the UNECE Steering Group on statistics for SDGs, Member States agreed that there is a strong need to improve coordination on SDG statistical capacity development within the UNECE region. A Task Team on Capacity Development was set up in June 2018 to work on this. Its main scope includes preparing initial guidance and identifying national priority areas for national statistical capacity development plans - both for the SDGs and beyond - and identifying existing resources, tools and guidance to enable NSOs to address their statistical capacity building needs.

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[170] https://unstats.un.org/sdgs/hlg/dubai-declaration/

9.1.1. Capacity development beyond NSOs

400. As explained in previous sections, the comprehensive nature of the SDGs means that a country needs input from many different actors, in and outside the NSS, to monitor the progress towards the SDGs effectively.

401. An NSS is often made up of a complex network of government agencies, international and regional agencies, civil society actors and the private sector. All these actors need to be mobilized on the path towards more and better data for the SDGs. Traditional capacity development has focused on surveys and NSOs. However, now there is a need to expand this focus to include other statistics producers - ministries, government agencies and civil society in particular.

402. The role of NSOs was clearly expressed in 2015 in the *Declaration on the role of NSOs in measuring and monitoring the SDGs*[171]. This was reaffirmed by UN Resolution 71/313[172], and underlined the importance of statistical capacity development. HLG-PCCB[173] and the HLPF[174] have also stressed the importance of capacity development for producing statistics, also beyond the SDGs.

403. As it is essential not to lose sight of the final goal – to increase data use and impact in the implementation of the 2030 Agenda – we need to take the users into consideration throughout the data cycle. Meeting users' needs implies increasing efficiency, reliability, trust and accountability of public data. Beyond technical skills, the above-mentioned high-level UN groups place a strong emphasis on individual skills such as technical expertise and leadership. They also stress the importance of donor coordination for delivering capacity. Both the stronger emphasis on partnerships and the increased awareness of data as a public good have resulted in a strong emphasis on country ownership and sustainable processes.

9.1.2. New approaches to capacity development

404. SDG indicator 17.18.3 clearly promotes the need for and importance of fully funded and inclusive statistical planning at national level to build robust systems to follow up on country development. Statistical capacity development is part of this development and official statistics and an NSS should always be an element of national strategic planning. To develop capacity to achieve such extensive and inclusive statistical planning, we need a fundamental change in approaches to capacity development.

405. The first initiatives for capacity building came with the founding of the UN Statistical Commission (UNSC) in 1947 and took the form of aid development strategies. Over the years, the global community has changed its views on development cooperation, veering more towards technical assistance, and later to technical cooperation with more emphasis on training, knowledge transfer and country ownership.

406. However, in the last decades, support for capacity building has largely focused on technical assistance in specific statistical domains, targeting specific sectors rather than taking a system approach. Obviously, it is not much use having more capacity to produce specific statistics but not having, for example, regulated data access. If an NSO is not independent and does not have a clear

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[171]

https://unece.org/fileadmin/DAM/stats/documents/ece/ces/2015/2015_CES_declaration_on_the_role_of_NSOs_in_SDG_monitoring.pdf

[172] https://undocs.org/A/RES/71/313

[173] https://unstats.un.org/sdgs/hlg/

[174] https://sustainabledevelopment.un.org/hlpf and https://sustainabledevelopment.un.org/topics/capacity-building.

legally defined role or the capability to communicate and disseminate its statistics, no substantial increases in sustainable statistical capacity will be achieved at system level.

407. In an era of dynamically changing approaches to the production of statistical data and the current challenges related to global needs versus public statistics stemming from the 2030 Agenda, the nature of capacity development should change accordingly. This change should incorporate use of administrative data, integration of sources including big data, the involvement of all producers in the NSS and other potential contributors, including private bodies.

408. New approaches to capacity development need to reach far beyond NSOs to produce more and better data. They should acknowledge different levels – individual capacity, organizational structures and the enabling system – and the need to establish capacity across and within each. As such, they respond to a changing data ecosystem, taking new data providers and sources into consideration, but always taking into account the core of NSSs and NSOs.

Figure 9.1
Ecosystems, the role of NSO and NSS
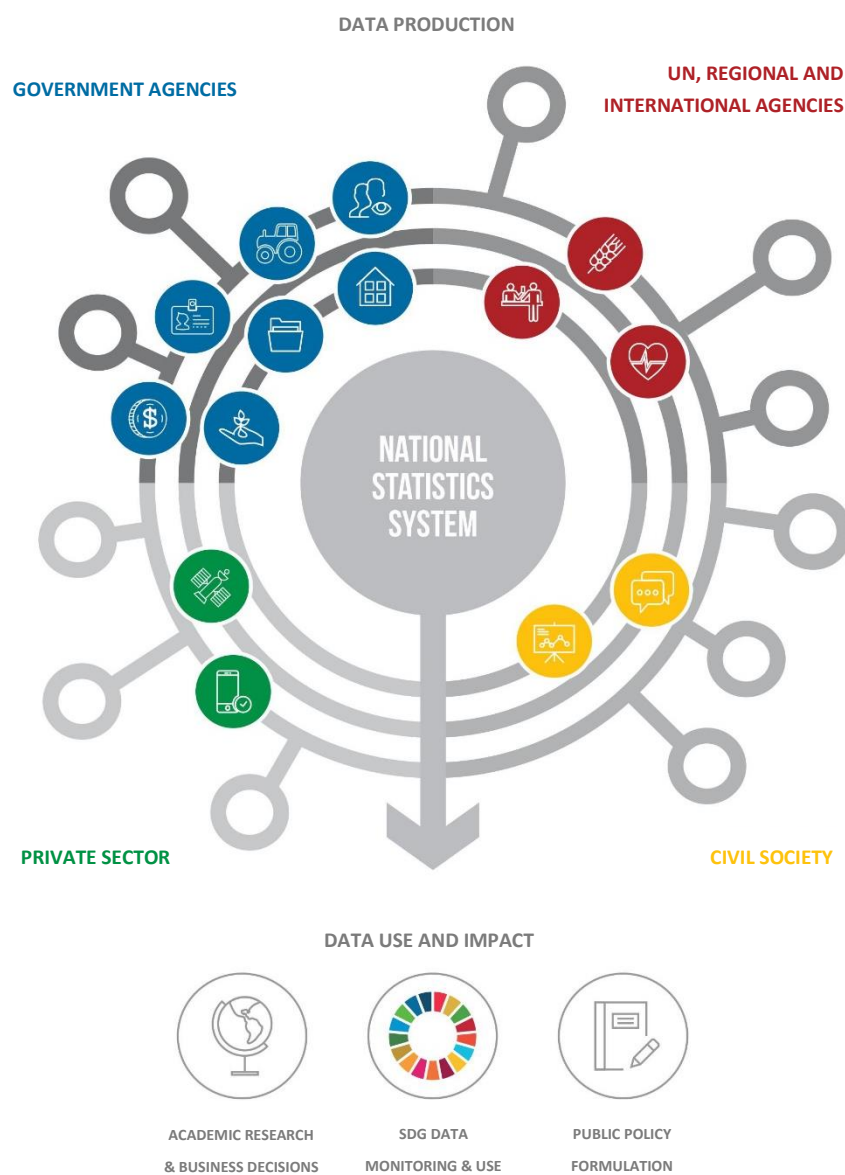
409.   The types of capacity required of an NSS using the standard UN generic capacity model, are further defined in the UN Joint Inspection Unit (2016) report (page 19)[175]. Based on their definition, statistical capacity comprises three levels (see PARIS21, Guidelines for developing statistical capacity[176]): individual, organizational and system capacity.

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[175] https://www.unjiu.org/sites/www.unjiu.org/files/jiu_document_files/products/en/reports-notes/JIU%20Products/JIU_REP_2016_5_English.pdf

[176] https://paris21.org/sites/default/files/inline-files/UNV003_Guidelines%20for%20Capacity%20Development%20PRINT_0.pdf

Figure 9.2
Levels of Capacity Development
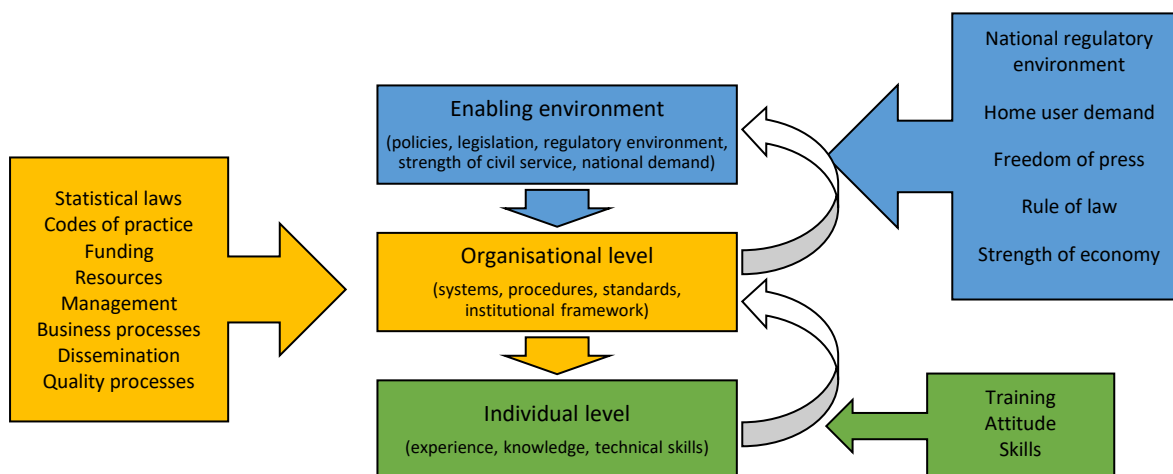
410. Individual capacity comprises the technical skills, attributes, and attitudes of individuals. Capacity can be increased by training, recruitment, changes in attitudes and increases in motivation.

411. Organizational level refers to business processes, infrastructure, resources, management practices, codes of practice, standards and quality assurance processes that exist within the organization. It is what enables processes to function with quality and efficiency.

412. The enabling environment, referred to as system capacity, encompasses the national environment and includes factors such as the status of national economic development, the strength of the civil service, rule of law, the regulatory environment and in the case of statistics, the type of demand from users. It might also comprise the relevant international and regional frameworks.

413. The stronger emphasis on partnership results in a stronger focus on establishing sustainable processes, methodologies and tools in statistical capacity programmes. Countries and donors alike not only support technical aspects of data collection and data production, such as surveys, data analysis and data management, but also invest more time and effort in facilitating the development of re-usable procedures and permanent structures. It is still important to produce good statistics but putting infrastructures and procedures in place that strengthen the whole system are now seen to be more successful. This is essential for the SDGs, which advocate long-term broad-based development and the data this entails.

9.1.3. The impact of COVID-19 on capacity development

414. At the time of writing, as the COVID-19 pandemic it still spreading, NSOs around the world have not been exempt from the massive disruptions to lives and livelihoods being caused by the coronavirus. In fact, the crisis has created a dual shock affecting both demand and supply of data that are set to disrupt the data value chain for official statistics[177] (Figure 9.3).

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[177] About 65% of NSO offices were fully or partly closed, 90% instructed staff to work from home, and 96% fully or partially stopped face-to-face data collection. Source: Global COVID-19 survey of National Statistical Offices by UNSD and World Bank https://covid-19-response.unstatshub.org/posts/priority-needs-of-national-statistical-offices/.

Figure 9.3
The impact of COVID-19 on the data value chain[178] (Source: PARIS21, 2020)
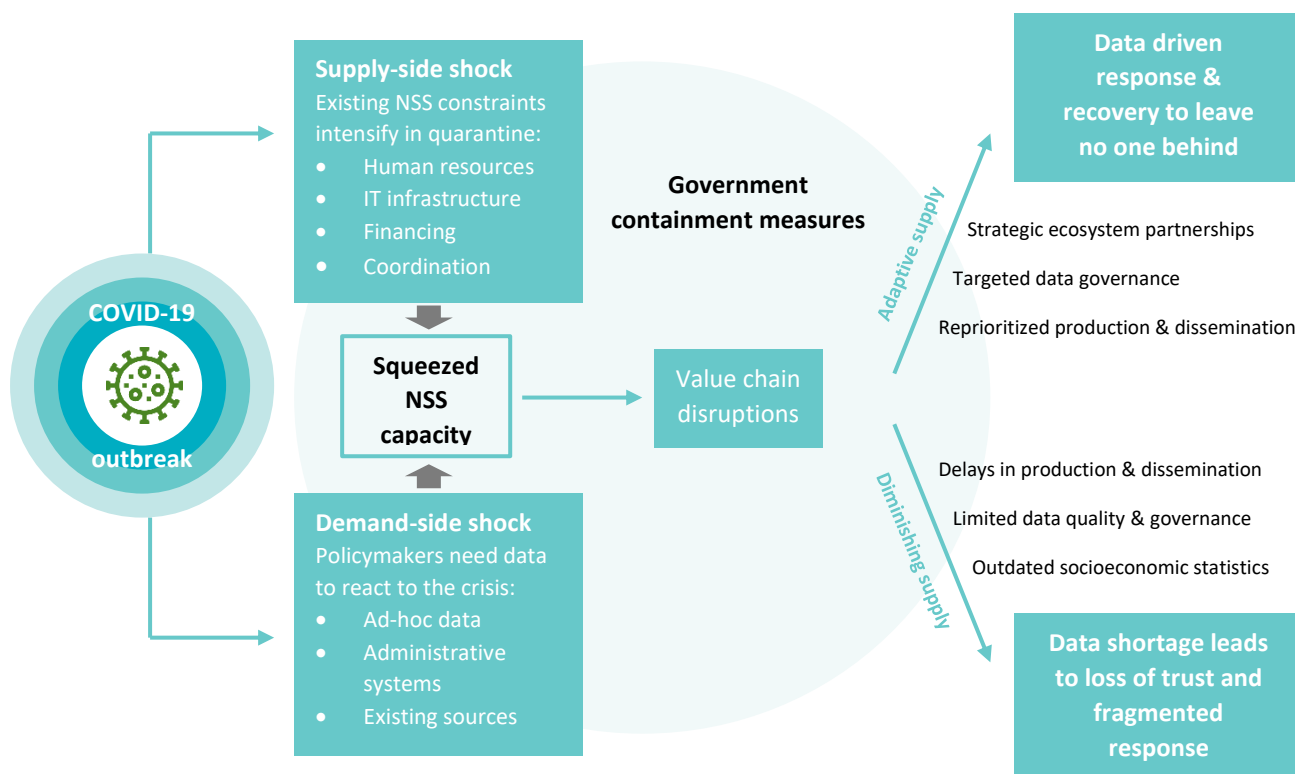
415.   On the demand side, governments, businesses, civil society organizations and the general public require timely and reliable information to navigate and respond to the unprecedented impacts of the pandemic. Moreover, available socioeconomic and price data may rapidly become outdated due to evolving conditions on the ground.

416.   On the supply side, NSSs are being challenged by serious disruptions to censuses, household surveys and other crucial data collection, processing and dissemination operations (see Figure 9.3).

417.   With offices closing, NSO and other NSS staff have had to work from home, often without sufficient IT solutions in place to sustain ongoing activities. In response, most NSOs have cut down data production to a minimum and postponed field-based data collection. In addition, cancelled missions to partner countries and study visits are also affecting capacity development and experts are having to rethink how to implement activities remotely.

418.   On the other hand, the pandemic has brought data and evidence to the forefront of public attention and policymaking. Statistics have been essential to analyse the economic and social implications of the emergency situation, including the recovery phase and the actions taken by policymakers. What is more, crises like the COVID-19 pandemic engender the need for new information, which is certain to expand, both at national and international levels. Examples of new requests include data on weekly deaths, but also data to measure the immediate social and economic impact of the pandemic in various sectors[179]. In the short term, remote activities are posing challenges

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[178] https://paris21.org/sites/default/files/inline-files/COVID_Policybrief_Full.pdf on page 5.

[179] 62% of responding NSOs began working on new data collection efforts to monitor and assess the impact of COVID-19 – and in more than half of the cases, these efforts follow a request from the government.

but also have benefits. The main lesson learned is that we should not stop capacity development activities because of the lack of physical meetings. Many activities can be carried out remotely and as long as we are aware of the limitations – e.g. difficulties getting information about the local situation and developing social relations, longer learning curve, etc. –, we can still implement them successfully. Activities such as dialogue with the partner country, monitoring and steering activities can be conducted more frequently via online meetings, which allow almost continuous contact and exchanges between countries.

419.   In the longer term, however, we shall not be able to undertake all activities remotely. Transforming all activities into online courses and webinars is neither functional for technical cooperation, nor efficient in terms of results. Therefore, as soon as it is safe to travel internationally, face-to-face meetings and local implementation – both beneficial for building partnerships and trust – should be resumed.

420.   Another element hindering effective and efficient capacity development during the pandemic is infrastructure. Not all partner countries have the IT infrastructure or connection options required to work remotely. In this respect, in the future it is important that donors invest in IT infrastructure, software, platforms for remote connections, internet access and other tools to facilitate remote activities, thus ensuring that no one is left behind. It is also important to identify which capacity building activities can be carried out remotely.

421.   Going forward, capacity development should aim at sustainable and country-owned mechanisms that allow for continuous business operations, even in times of crisis. Thus, development partners should focus on areas key to effective policymaking. The difference between adaptive and diminishing data supply chains will be shaped largely through effective governance and ecosystems engagement. Actions taken by NSOs and their partners should be directed towards developing coordination, quality management and data governance capacities:

- Improve administrative data production and dissemination. NSSs need to improve the production and dissemination of administrative data. Most importantly, the data need to be disaggregated by sex, income, employment status and age to enable policymakers to take meaningful action to leave no one behind. Central data repositories proved key during the COVID-19 pandemic.

- Strengthen data quality and data stewardship. NSOs have to step up beyond their role as a data coordinator and engage in quality management and data stewardship. Efforts to develop capacities to support these efforts should follow a holistic approach taking into account the whole data ecosystem as suggested by the CD4.0 framework[180].

- Develop strategic partnerships. In a modern data ecosystem, new data producers such as the private sector or civil society, or knowledge institutions such as universities, can extend the coverage and scope of quality data production for the public good. NSSs therefore, need to engage in sustainable and complementary partnerships that offer a path toward coordinated flows of high-quality data to inform response and recovery.

Meanwhile, around half of NSOs set up or planned national data platforms to serve public data needs during the pandemic. Source: Global COVID-19 survey of National Statistical Offices by UNSD and the World Bank.

[180] https://paris21.org/sites/default/files/inline-files/CD4.0-Framework_final.pdf

9.1.4. Progress and steps taken in capacity development in official statistics

422.　Between December 2017 and April 2018, PARIS21 together with HLG-PCCB and UN Statistics Division carried out a survey [181] to get insight into the current state of capacity development across NSSs, and the short and medium-term challenges, priorities and plans of NSOs.

423.　In relation to the 2030 Agenda, the results of the survey confirm that capacity development needs vary between countries, depending on the level of maturity of their NSSs, and the level of interest in the country concerned. With respect to particular SDG indicators, the report highlights significant divergence between countries, but some focus points did emerge. Environment statistics were reported as a priority area for capacity building. In relation to disaggregation, countries pointed out disability status as needing the most urgent support. Concerning data sources, use of administrative sources was identified as a main area for capacity development.

424.　Within NSOs the report identifies four priority areas:

　i.　Coordination (i.e. improving cooperation with providers of administrative data and improving coordination with other producers of official statistics).

　ii.　Strengthening human resources management.

　iii.　Improving technical skills among staff.

　iv.　Improving leadership and management skills.

425.　The PARIS21 Capacity Development 4.0. (CD4.0) report [182] represents a considerable step forward in the conceptual thinking in this area, embedding capacity development in a complex data ecosystem, where official statistics is just one element. Aligning capacity development to the 2030 Agenda is important, but it must reach further than the SDGs, as national needs for statistics go beyond the SDGs. CD4.0 promotes country ownership of a capacity development strategy produced by all relevant stakeholders. The development of a national strategy on data and statistics should apply global rules and standards in the country-specific context. It would be also a key starting point for any kind of development cooperation support. Internationally agreed standards contribute to professional independence and strong public confidence and help to attract required technical assistance.

9.2.　Main sources of donor support in statistics

426.　In response to the demand for data created by the 2030 Agenda, the United Nations Statistics Commission created the High-level Group for Partnership, Coordination and Capacity-Building for statistics for the 2030 Agenda (HLG-PCCB) in July 2015.

427.　HLG-PCCB is one of the main actors in the field of capacity development for official statistics for the SDGs. It organizes the two-yearly UN World Data Forum as a platform to intensify the dialogue and cooperation between various Agenda 2030 stakeholders, data users and producers, professional groups and civil society representatives. Topics discussed include national and international official statistics, information technologies, geospatial information and data science.

428.　A large share of global support for statistics continues to come from a very small number of providers. Several NSOs also contribute directly by sharing their expertise in technical cooperation projects. As statistics is becoming a relevant stage in multiannual planning of cooperation activities in donor countries, we should see more new donors investing in this area, but this all needs to be coordinated effectively. While UNFPA and the USA are strongly engaged in country-specific aid to

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[181] https://paris21.org/capacity-development-40/cd40-survey

[182] https://paris21.org/sites/default/files/inline-files/PARIS21_Press%202019_WEB_0.pdf

statistics, the Gates Foundation and IMF are among the top donors for "unallocated commitments" and "regional or sectoral commitments". Figure 9.4 illustrates support from the top ten providers for each category (PARIS21, 2019)[183].

429.   Despite the fact that there are relatively few donors, they have traditionally provided a wide range of support for statistics. Many donors focus on developing and producing one specific set of data or statistics, for example in the area of health or agriculture. While the production of these statistics is often of key relevance to the country's development, this kind of support does not benefit the wider statistical system, or the organizational aspects mentioned above. Since much of the support is ad hoc, it can also be very fragmented. Getting an exhaustive picture of the donor spectrum in a given country can be very challenging.

Figure 9.4
Top donors 2016-2018
(Millions of United States Dollars)
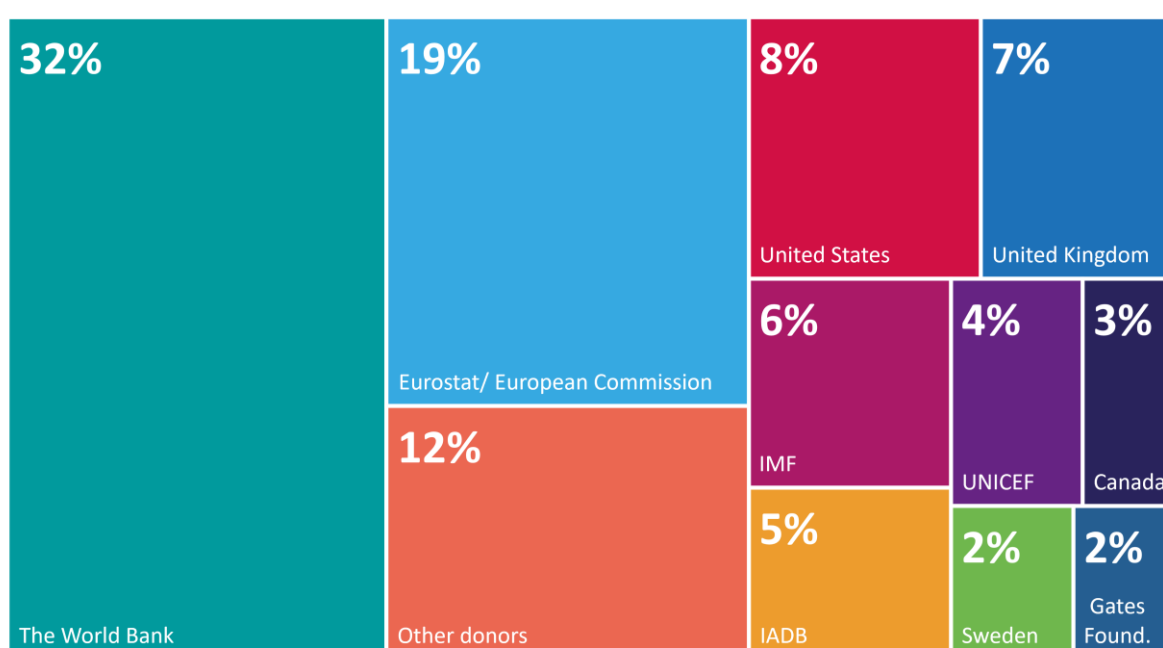
Source: Data from the 2020 PARIS21 Partner Report on Support to Statistics.

9.3. Methods and tools for capacity development

430.   In line with the shift in the role of capacity development in statistics and the broader area of statistical stakeholders introduced by the SDGs, the methods and tools for achieving relevant and long-lasting development need to change. Traditional methods of development assistance, where foreign experts implement new initiatives and achieve results largely alongside national counterparts, are no longer considered appropriate to achieve long-term and sustainable change. In the new vision, statistical capacity development should take a more peer-to-peer approach, where partners work together to adapt to national priorities and contexts.

431.   Support from donors may take different forms. Different roles can be efficient in different contexts and at different times.

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[183] https://paris21.org/news-center/news/press2020-under-covid-19-worrying-stagnation-funding-despite-growing-data-demand

9.3.1. UNECE Strategic framework for statistical capacity development

432. UNECE has developed a strategy for statistical capacity development[184] to support Member States in developing and enhancing the capabilities they need to produce official statistics and implement international norms and standards. The main stakeholders and beneficiaries are NSSs. Other stakeholders include national and international organizations that provide capacity development support in the UNECE region. The strategy is based on three pillars: principles, priorities and tools.

433. The cornerstone of the new statistical capacity development strategy is the concept of capabilities where capability refers to the "...ability that an organization, person, or system possesses - capabilities typically require a combination of organization, people, processes, and technology to achieve". This means the new approach to capacity development no longer focuses on competence at individual level but is more holistic. In addition to replacing the traditional training-oriented concept of capacity development with a focus on capabilities, the new approach is demand-driven, addressing national priorities identified through assessments by NSSs.

434. In other words, capacity development is moving along a more focused and relevant path prioritising the needs of countries and NSOs in terms of producing SDG statistics, taking into account not only statistical needs but also soft skills and organizational and institutional aspects.

9.3.2. Assessing data gaps and problem analysis

435. The first step in identifying the needs and requirements of an NSS is often some form of assessment, either national or international, which can help pinpoint key areas in need of development. In terms of SDG statistics, indicator 17.18.1 aims to help countries set a base for these assessments, by identifying which indicators cannot be measured by existing national datasets.

436. Assessments by international organizations can focus on one or more aspects: statistical capacity (processes), data quality (outputs/outcomes) and/or compliance with codes of practice and international standards (principles). International assessments benchmark NSS practices of and suggest best courses of action to improve medium-term performance. These stocktaking exercises are crucial to any NSS seeking to provide reliable data to meet user needs. They also contribute to public trust through the transparency created when results are made public.

437. Assessments take various forms: external assessments, peer reviews or self-assessments. External assessments are conducted by an expert or committee that reports on an institution's performance or compliance. The findings of these assessments are usually followed up by technical support. In peer reviews, the organization is assessed by another organization at the same level: in the case of an NSO by another NSO or NSOs. Self-assessments, on the other hand, rely on the institution itself to provide an account of its own performance, and encourage self-reflection.

9.3.3. National strategies for the development of statistics (NSDS)

438. It is important to provide countries with tools to check their own needs and to communicate these to policymakers, as well as to build awareness of these needs among donors. An NSDS is one tried and tested method to structure national statistics plans so that they can be integrated into the overall national development plans.

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[184]

https://unece.org/fileadmin/DAM/stats/documents/ece/ces/2018/CES_10_rev1__Statistical_capacity_development_strategy_rev.pdf

439.   Since 2004, the NSDS Guidelines developed by PARIS21 (NSDS Guidelines Version 2.3[185]) have evolved into a main tool to help countries and supporting organizations find the right direction for and content of statistical capacity support programmes. The NSDS Guidelines combine current theoretical knowledge on capacity development and government policies with practical experience on how to plan, design and organize statistical development activities. Moreover, they focus on the specific role of national governments to set targets within the context of overall economic, social and environmental plans. Plans based on an NSDS guarantee country ownership of development programmes.

440.   The NSDS and the national statistical programme both need to be embedded in a country's wider government planning and economic and social programmes, and to be considered in the context of a wider range of providers and users. Statistical capacity programmes are just one of several development programmes coexisting alongside other capacity building initiatives. From the viewpoint of the partners involved, one-off programmes are easier to oversee and manage, but they risk being implemented in isolation and without visible results for all actors. Moreover, it is also essential to integrate the NSDS in national planning activities to guarantee adequate funding across different stages.

9.3.4.   Peer reviews

441.   Peer reviews incorporate elements from both self-assessments and external assessments and complement them with examples from peers on how to perform better.

442.   Peer reviews are a common practice within professional communities: organizations can learn from each other through constructive discussion that does not result in verdicts or obligations. The reviews provide opportunities for peer-to-peer advice on how to improve and advance knowledge in a specific domain. Such reviews can also be valuable in various stages of setting up an NSDS - for instance, with a consultative role in the design stage or to review progress during the implementation stage (PARIS21, 2019[186]).

443.   NSO peer reviews can help to identify problems and drawbacks. They can recommend solutions that ensure rapid responses to user needs, increase the quality of statistics, improve the visibility of an NSO and strengthen its coordinating role. Peer reviews are conducted by a team of two or more experts (peers) with proven experience of how NSOs and NSSs are structured and how they function, and a good understanding of recent key innovations such as modernization of official statistics, geospatial technology and its potential, etc. The peer review team "leader" is responsible for the overall coordination, organization and reporting of the process. Additionally, observers from external parties (e.g. Eurostat, countries already reviewed, international organizations) may participate in missions with the approval of the country undergoing review.

444.   Peer review reports are usually made public, adding to the transparency of national statistics development and often providing further impetus to filling some of the development gaps.

445.   Having identified gaps in statistical capacity, a number of established methods are available to help countries fill these gaps, as outlined below.

9.3.5.   Technical assistance and study visits

446.   Technical assistance usually consists of sharing best practices and providing expertise, which will usually result in a set of recommendations. It will give the beneficiary institution an opportunity

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[185] https://nsdsguidelines.paris21.org/

[186] https://paris21.org/sites/default/files/2019-05/DP%20-%2016%20Peer%20Reviews%20-%20WEB.pdf

to learn from others via a series of interrelated activities such as hands-on training, workshops, seminars etc. These projects are well-defined beforehand and work towards achieving pre-set goals.

447. Technical-assistance projects range from one-off activities covering one specific topic to multiyear projects with numerous activities. These longer-term projects often cover various statistical topics, approaching them from both the perspective of a particular subject (e.g. poverty statistics, environment statistics) and of the process (e.g. data collection, methodology, dissemination).

448. Technical-assistance projects are financed by donors and implemented by one or more partners. The leading partner is responsible for the planning and implementation of the project.

449. Study visits are another form of capacity development; these can be a very useful way to acquire new knowledge. Study visits are usually at the request of one NSO to another, with the requesting NSO taking its specific needs into consideration when looking at which country to visit. The visiting delegation should then have a good opportunity to obtain more insight into the focus topics and to understand and learn how the institutional framework and organization of the hosting institution work in this respect.

9.3.6. Training and workshops

450. Statistics comprises many different fields: harmonization, comparability, professional and technical expertise and information about new methods and phenomena are particularly important for the production of good quality statistics. It is important for NSOs to keep abreast of what works and what doesn't in these areas.

451. Training is often an effective starting point for this, enabling participants to acquire knowledge on new methods and trends and follow good practices of high-level experts. In-country training courses often cover concrete and specific themes for the staff in a specific country, while regional courses teach specialists from several countries in the region state-of-the art techniques and methods for the production of high-quality statistics.

452. Training can be useful in areas such as planning, management and organization structures. More specifically, it can address programme monitoring approaches to strategy development, how to define a statistical infrastructure, handle user requests effectively and implement new initiatives. Courses can be used to share and teach planning theory and practice, strategic planning models, business model projects, value chains, risk management, feasibility analysis, evaluation and auditing. Participants can then apply what they learn to their organizations, to achieve more balanced management and coherent planning, improve overall performance, and measure programme and product effectiveness and policy compliance. Management training should cover both higher and middle management. Experience with various quality management aspects, planning and scheduling tools, techniques and processes will help NSOs to realise their mission and vision.

9.3.7. Traineeships

453. This is a form of training where employees from beneficiary NSOs are seconded to international organizations or other NSOs, usually for three to five months. Tasks like preparing documents for meetings and inventorying existing data, methodological papers and publications enable the trainees to obtain a better insight into the functioning of the whole statistical system.

9.3.8. Participation in meetings

454. Taking part in regional and international seminars, working groups, task forces and other such meetings will help participants become acquainted with problems and solutions in other countries. By sharing experiences in this way, they are better able to tackle their own challenges and find solutions for their problems. However, if such methods are to be effective in terms of improving data for the

SDGs, representatives from beneficiary countries must be able to have an active role in these meetings.

9.3.9. Long-term partnerships and twinning

455.   The emergence of more long-term partnerships between NSOs in donor countries and those in beneficiary countries is key in the move from individual capacity development to focusing on organizational and contextual change.

456.   Traditional technical assistance for specific statistical products and one-off training projects will not effectively achieve the organizational and contextual changes noted above. Such changes require a more long-term and in-depth approach, often using a combination of training in theory, adaptive work, side-by-side development, coaching and follow-up. Many "twinning" projects comprise these elements; they often involve a long-term adviser in place in the beneficiary organization whose role is largely to build an understanding and a relationship of trust between the organizations involved.

9.3.10. Main features of service contracts vs. twinning contracts

Service contracts

457.   Service contracts are the result of open tender procedures. This means that private companies compete for these contracts - companies not usually responsible for producing statistics, as official statistics are normally produced by public bodies such as NSOs, ministries or other public agencies. These companies therefore have more of a management function with a network of private statistical experts attached: they are either small companies with a few statistical experts or draw heavily on the expertise made available by NSOs.

458.   Under service contracts, one contract covers the entire project structure for the beneficiary, including the transfer of expertise via consultations, study visits, training, seminars and workshops, but also survey implementation. The expertise provided under the contract may come from private experts or NSO experts, so a combination of private and public expertise is possible.

Twinning contracts

459.   Twinning contracts are also the result of a competitive procedure, although almost exclusively among the competent public authorities in a given area; private companies may only be involved in certain circumstances. Under twinning contracts, consortia can be set up among public authorities so that the expertise from several institutions and countries can be combined in one single twinning project.

460.   Twinning normally includes placement of a long-term resident adviser in the beneficiary institution. It also comprises a defined set of project-related activities such as hands-on training, seminars, workshops, training courses and study visits. A twinning contract is often centred around certain technical recommendations, as the contract would not allow for spending on extensive surveys or equipment. The expertise is delivered by the NSOs in the consortium.

9.3.11. Capacity development matrix by the CES Task Team

461. The UNECE Task Team on Statistical Capacity Development has prepared a capacity development matrix (CD matrix) as a tool for matching the needs of beneficiaries with offers from donors[187]. The tool covers all statistical activities carried out within NSOs and NSSs. It is efficient as an assessment tool for countries to identify weak and strong areas within their NSO and NSS. The approach consists of the following three steps:

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[187] https://statswiki.unece.org/display/SFSDG/GUIDELINES+AND+TOOLS.

i. Countries that need to improve their statistical capacity use the matrix to identify all the needs and national priority areas and fill in the matrix, ensuring a country-driven approach.

ii. The completed CD matrix is then shared with potential donors, who fill it in with the possible and feasible support they can provide. They provide information on what they can offer, taking into consideration the needs and priorities of the beneficiary countries, and express their own willingness to collaborate with specific countries/regions/areas, depending on their own capacities.

iii. The last step is a matching process of beneficiaries' needs with donors' offers. This process does not go into too much detail as identification of the main needs and priorities where a donor can contribute is time consuming. The main aim of the CD matrix is to identify and gather information centrally about demand for and supply of the whole range of statistical activities. This matching provides an added value for beneficiaries and donors.

462.   The CD matrix could be also useful for NSOs in negotiating a contribution offered by a donor: it will help to provide a clear picture of their needs and priorities. It will also reinforce the coordination role of the NSO in the NSS, by informing line ministries or government as a whole about the needs for statistical capacity development for the SDGs and beyond.

Structure of the matrix

463.   The matrix is divided horizontally into three main parts:

- Strategic: the enabling level within which NSOs and NSSs function and can strengthen their statistical capacity (legal and strategic framework, people and organization).

- Organizational: the internal structure, processes, sectoral production that influence the effectiveness of a system and allow a potential improvement in statistical capacity.

- IT: the basic IT infrastructure and tools that support data production and the information system.

464.   In addition, a section on statistical subject-matter domains is included.

465.   Vertically the matrix is divided into four main pillars as follows:

- Level of development

- Presence of a strategy document

- Need for external support

- Priorities

9.4.   Coordination of capacity development

466.   Worldwide, one third of NSOs say that statistical capacity development programmes are not meeting their needs. One major reason for this is a lack of coordination with key actors within and outside NSSs. The supply-driven approach is in part due to two factors: on the one hand, development partners' results-based-framework perspectives, characterized by short timeframes and project-level quantifiable results. On the other hand, statistical capacity needs and sustainability in recipient countries have been poorly mapped up to now; current assessment tools have not incorporated these concerns – concerns that can hinder investment in better data for development.

9.4.1.   Improve coordination for knowledge sharing

467.   Any coordination structure with a global ambition should play a role in centralizing information on the deployment of statistical capacity development programmes. The easiest way to do this would

be to make an international list of projects and best practices supporting statistical capacity development in low-income countries. This would prevent "data and country orphans" and improve resource allocation. The list could be upgraded to include a continuously updated, real-time dashboard of both existing capacity development initiatives and future offers by new external providers, including non-governmental actors. The PARIS21 Statistical Capacity Monitor [188], for example, aims to become a one-stop source for the most relevant and publicly available indicators on statistical capacity. The information would be provided to all countries as a public good and be an initial step to reduce overlapping activities in the field. Similar exercises have been done for Latin America and the Caribbean as a joint effort of the UN System in compiling capacity building activities in the region. This information system on support activities for SDG monitoring and reporting is available at the regional management platform to facilitate the coordination among agencies and Member States[189].

468.   In the medium term, any strategy for coordination should aim to integrate donor strategies into established legal frameworks, consultation processes and statistical planning tools. Donor coordination should first establish mechanisms to support national legal frameworks that adhere to international standards and should recognize the NSO as an independent body with the mandate to coordinate the NSS. Such support involves giving these offices the legal infrastructure to access data and engage with emerging actors, including non-official data sources.

469.   Statistical capacity programmes can also target domestic coordination as an explicit objective to strengthen data systems. They can promote best practices in data sharing among domestic data producers, enhancing data collection in centralized and decentralized systems and promoting engagement with new actors.

9.4.2.   Establishing pooling arrangements and improving monitoring

470.   The establishment of pooling arrangements, including the UN Funding Compact and basket funding for coordinating investment in data, is another promising approach to increase donor coordination. As stable and predictable sources of funding, such pooling arrangements promote coordination among providers. They can reduce transaction costs, promote a results-based financing approach, ensure that activities are aligned with NSDSs, and support funding initiatives that increase domestic resources in support of statistics[190].

471.   Enhanced financing goes hand in hand with improved monitoring. Measuring support for statistics comes with several methodological challenges: double counting of donor activities, in particular in multi-recipient projects; differing country capacities to absorb investment in their data systems; and a lack of transparency in providing funding for development data. These aspects often inhibit efficient and effective management of funding[191]. Improving the measurement of financing for development data will facilitate the design of better monitoring tools, as is the case today for sectoral funds.

9.5.   Recommendations for NSOs

A.   Use the CD matrix to identify specific needs and priorities when planning activities to strengthen statistical capacity in the NSO and the NSS, and to negotiate with donors to enhance statistical capacity.

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[188] https://statisticalcapacitymonitor.org/

[189] https://agenda2030lac.org/estadisticas/support-sdg-monitoring-and-reporting.html

[190] https://paris21.org/news-center/news/bern-network-global-alliance-strengthen-development-data

[191] https://paris21.org/news-center/news/bern-network-global-alliance-strengthen-development-data

B. Keep up an open dialogue with other national authorities within the NSS for better access to data and sharing mechanisms.

C. Enhance dialogue with ministries to include statistics and capacity development needs in national strategic programmes.

D. Establish a task force or forum with participation of UN agencies, national government, the NSO and other stakeholders. This will help to discuss challenges and actions aimed at strengthening statistical capacity, to mobilize resource partners, to expand the cooperation and understanding of the framework and to increase the coordinating and leading role of the NSO.

E. Disseminate the Road Map to other national data producers to enhance their knowledge about the issues around statistical follow-up to the SDGs.

F. Within the NSS, initiate the discussion on where capacity needs to be developed further and where resources or statistical efforts should be allocated.

G. Never stop improving statistical capacity.

Annex 1 – FREQUENTLY ASKED QUESTIONS

The 2030 Agenda, the SDGs and follow-up and review

What are the Sustainable Development Goals (SDGs)?

472.   In September 2015, the UN General Assembly adopted resolution 70/1. "Transforming our world: The 2030 Agenda for Sustainable Development" [192]. The document includes a political declaration, sets the 17 Sustainable Development Goals (SDGs), with 169 targets and texts on how the goals and targets will be implemented. It also includes sections on how progress towards the goals will be followed up and reviewed.

473.   The SDGs were described by the then UN Secretary-General Ban Ki-moon as a "to do list for people and planet"[193]. They are a pledge to end poverty and hunger, to reduce inequalities and to halt climate change.

Why are the SDGs important?

474.   The SDGs are important because the shared challenges we face, such as inequality and climate change, are not constrained by borders, and are not short-term problems. They require a universal and transformative solution. The SDGs aim to put the world on a sustainable and resilient path. The 2030 Agenda for Sustainable Development provides a global blueprint for dignity, peace and prosperity for people and the planet, now and in the future. A few years into the Agenda, we can now see how civil society, the private sector and governments are translating this shared vision into national development plans and strategies. The goals and targets stimulate action across the world in areas of critical importance for humanity and the planet.

What are the priorities within the SDGs?

475.   No one goal or target is prioritized over another. The goals and targets are "integrated and indivisible", which means they balance the three dimensions of sustainable development (social, economic and environmental) and must be implemented as a whole, in an integrated rather than a fragmented manner. The different goals and targets are closely interlinked. A positive outcome in one goal or target can have positive or negative impacts on other goals and targets. For example, a rise in GDP (goal 8) can have a negative impact on the climate in terms of greenhouse gas emissions (goal 12), while an increased number of toilets in schools (goals 4 and 6) can have positive impacts on health (goal 3) and gender equality (goal 5).

476.   However, with the pledge that no one will be left behind, the 2030 Agenda puts a particular focus on the poorest, the most vulnerable and those furthest behind.

Aren't the SDGs mainly for developing countries? Why should developed countries care about them?

477.   The SDGs are universal. All UN Member States have agreed to implement them, taking into account their different national realities, capacities and levels of development. The targets are aspirational and global, with each government setting its own national targets, guided by the global level of ambition but taking into account national circumstances. While many challenges are different across countries, there are many shared challenges and ambitions.

How do the SDGs differ from the MDGs?

478.   The Millennium Development Goals (MDGs) were established by the UN for 2000-2015 with the overall aim of eradicating poverty, targeting developing countries. The MDGs covered eight areas

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[192] https://sdgs.un.org/2030agenda

[193] https://www.un.org/press/en/2015/sgsm17111.doc.htm

ranging from halving extreme poverty rates to halting the spread of HIV/AIDS and providing universal primary education by 2015. The SDGs build on the achievements of the MDGs and seek to address their unfinished business. The scope of the SDGs is broader, encompassing all three dimensions of sustainable development (economic, social and environmental) and developing and developed countries alike.

Many countries were already working on sustainable development before the SDGs were launched. So what's new?

479.   Sustainable development has been a concern for a long time. Many countries had sustainable development plans and strategies in place before 2015, which they can build on as they implement the SDGs. However, this is the first time that the whole world has agreed on a universal agenda to achieve sustainable development in all three of its dimensions.

480.   The SDGs bring an element of comparability; global and regional achievements can be measured more easily and in an integrated way. There is a sense of global partnership as we work together to achieve our shared goals.

Who is responsible for the SDGs?

481.   We all have a part to play. The 2030 Agenda states that all countries and all stakeholders, acting in collaborative partnership, will implement the Agenda. Governments, international organizations, the business sector and other non-state actors and individuals must contribute to the implementation. However, governments are responsible for facilitating and stimulating implementation.

482.   The 2030 Agenda also states that each country has primary responsibility for its own economic and social development and that the role of national policies and development strategies cannot be overemphasized. At the same time, national development efforts need to be supported by an enabling international economic environment.

483.   In terms of monitoring progress, governments have committed to engage in systematic follow-up and review of the implementation of this Agenda.

How is progress towards the SDGs measured?

484.   The SDG goals and targets are supported by a set of global indicators, which are used in the follow-up and review process as described in the 2030 Agenda resolution[194]. The global indicator framework is developed and maintained by the Inter-Agency and Expert Group on Sustainable Development Goal Indicators, that was adopted first by the UN Statistical Commission, then by the UN Economic and Social Council and finally, the UN General Assembly.

485.   These indicators are often complemented by indicators at the regional and national levels, which are developed by Member States.

486.   At the global level, the UN publishes the annual progress report "The Sustainable Development Goals Report" which presents and analyses the global indicators (where data are available). Several other organizations present indicator-based progress reports and analyses. Countries and regions have also developed processes for follow-up and review that fit their specific context.

How are we doing overall? How many targets have we met/can we meet?

487.   The Sustainable Development Goals Report 2021[195] brings together the latest data and shows that, before the COVID-19 pandemic, progress remained uneven and that we were not on track to meet the goals by 2030. Progress has been made in poverty reduction, maternal and child health,

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[194] https://undocs.org/A/RES/70/1

[195] https://unstats.un.org/sdgs/report/2021/

access to electricity, and gender equality, but not enough to achieve the Goals by 2030. In other vital areas, including reducing inequality, lowering carbon emissions and tackling hunger, progress has either stalled or reversed.

488. Now, due to COVID-19, an unprecedented health, economic and social crisis is threatening lives and livelihoods, making the achievement of the SDGs even more challenging. In November 2021, the death toll was over five million and continued to climb, with almost no country spared. The global extreme poverty rate rose for the first time in over 20 years, and 119 to 124 million people were pushed back into extreme poverty in 2020. There is a risk of a generational catastrophe regarding schooling, where an additional 101 million children have fallen below the minimum reading proficiency level, potentially wiping out two decades of education gains. Women have faced increased domestic violence, child marriage is projected to rise after a decline in recent years, and unpaid and underpaid care work is increasingly and disproportionately falling on the shoulders of women and girls, impacting educational and income opportunities and health. Notwithstanding the global economic slowdown, concentrations of major greenhouse gases continue to increase. The pandemic has also brought immense financial challenges, especially for developing countries – with a significant rise in debt distress and dramatic decreases in foreign direct investment and trade[196].

Data and indicators

What is the purpose of the SDG indicators?

489. The SDG goals are what we want to achieve overall, the targets are the desired levels (specific objectives, thresholds, and timelines) and, lastly, the indicators are the lenses through which we can see how we are performing. Without indicators, we would only have commitments, but no evidence of whether we are fulfilling them. Indicators are crucial to monitor progress, inform policy and ensure accountability of all stakeholders.

490. Statisticians from across the world have designed a set of indicators that measure how well the world, regions and countries are meeting the targets. The list of indicators was adopted by the UN General Assembly in July 2017 through Resolution A/RES/71/313. It included 231 unique indicators[197], mostly based on statistical data but also some non-statistical indicators relating to issues like governance and budgets. The indicators were designed to enable progress towards all 169 targets to be monitored, giving equal importance to all targets.

491. The indicator list ensures cross-country comparability, providing a common ground for measuring progress on a global scale.

Who developed the indicators and how did they do it?

492. The task to develop a list of indicators for measuring progress towards the SDGs was assigned to the global community of official statisticians through the UN Statistical Commission (UNSC) - a body consisting of the heads of NSOs throughout the world. For this purpose, UNSC set up an Inter-Agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs). IAEG-SDGs' members are 28 NSOs from countries representing the different world regions. All international organizations dealing with statistics in different subject areas are observers in the IAEG and actively participate in the work. The indicators were developed through wide consultations with different stakeholders: countries, international organizations, academia, civil society, etc. It was a complicated process, involving extensive discussions to find a balance between the broad information needs for the 169

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[196] António Guterres, Secretary-General, United Nations in "The Sustainable Development Goals Report 2021" https://unstats.un.org/sdgs/report/2021/.

[197] https://unstats.un.org/sdgs/indicators/indicators-list/

targets (of which many include several sub-targets), what can be measured and limiting the overall number of indicators.

493.	The UNSC approved the list of 232 indicators in March 2016. The list was subsequently approved by the UN Economic and Social Council and finally the General Assembly in July 2017. The list was updated in 2020 and currently includes 231 indicators.

Will the SDG indicator list change?

494.	Just agreeing on a list of indicators did not mean that they would all automatically be available or that all the methodological challenges had been resolved. The list is developed and improved continuously through effective dialogue in which all UN regions actively participate through the work of IAEG-SDGs.

495.	IAEG-SDGs leads the global efforts to maintain and develop the SDG monitoring framework. It issues proposals on indicator adequacy vis-à-vis the targets, methodological soundness and availability worldwide. UNSC decides on changes to the original indicator list, based on proposals from IAEG-SDGs for minor refinements to methods and indicators and more substantial five-yearly reviews. A first substantial review was conducted in 2020 and another is scheduled for 2025. New indicators, deletions and substantial revisions of indicators will only be considered in exceptional circumstances and only at the times of the substantial reviews.

496.	As a result of the first substantial review, the list now includes 231 indicators. By the end of 2020, there was an internationally agreed methodology for the calculation of all these indicators. Data are widely available for 53% of the indicators (Tier 1 indicators); for the remaining 47%, data are more scarce (Tier 2). There are no longer any indicators without an internationally agreed methodology (former Tier 3) although some methodological challenges remain.

To what extent is the global SDG list still relevant for the follow-up of COVID-19 impacts?

497.	The SDG global framework of indicators was defined taking into account the sustainability dimensions and the leave no one behind principle. As the COVID-19 pandemic has impacted all sustainability dimensions – economy, society and environment – the global SDG indicators are appropriate to track the impact of COVID-19 on the most important areas of life. The SDG indicators enable us to monitor the impact of the pandemic in two ways. First, the indicators are tracked over time and provide a before-and-after picture. Secondly, because the indicators can be disaggregated they can reveal the situation of vulnerable populations.

Why is it so difficult to develop a new indicator?

498.	If it were easy, the indicator would already exist. The problem is not the indicators themselves, but data availability. When IAEG-SDGs approves the addition of an indicator, it must also approve the means of collecting the data, which means ensuring the method is robust, achievable and sustainable.

What do all these statistics mean? Why can't we have just one single number?

499.	It would be nice to be able to report a single number showing progress towards the SDGs; single numbers are often effective for purposes of communication. However, in an Agenda with 17 Goals and 169 targets, encompassing five dimensions (People, Prosperity, Planet, Peace and Partnerships), meaningful coverage could not realistically be reflected in one single number/indicator.

500.	Even composite indicators such as the Human Development Index and the Gini coefficient have a narrower scope. These complex and multifaceted indicators are the result of years of dialogue and piloting to make them meaningful and possible to compile on a global scale.

501.	If a similar composite indicator were to be created for the purposes of the SDG monitoring, the amount of time-consuming research, coordination and implementation efforts would most likely

exceed the gigantic challenge already posed by an Agenda which contemplates a monitoring framework of over 230 indicators.

502.   Besides, although it is possible to create score-based indices to measure the multidimensional performance of a region/country/subnational unit, these would not identify the most vulnerable, those who are at risk of being left behind as we make social, economic and environmental progress. An index, which appears as a single number, includes a multitude of indicators synthesized into one score result and in itself can only convey how a country is faring compared to other countries. It does not identify the key areas which substantiate the country's performance. That information can only be found when the index is complemented by the underlying indicators.

Who provides data for the SDG indicators?

503.   In its Resolution (A/RES/71/313), the UN General Assembly stressed that official statistics and data from the national statistical systems constitute the basis needed for the SDG global indicator framework. It also stressed the role of NSOs as the coordinators of NSSs. Therefore, most of the data will come from NSOs or will at least be validated by them.

504.   But other sources can also be used for data, often to complement official statistics. These include other government agencies, development partners, private businesses, NGOs and others. Several factors demand the diversification of data providers. On the one hand, the Agenda is wide and exceeds the scope of official statistics and also includes non-statistical information; and on the other hand, the varying levels of statistical capacity across the globe. As such, both national sources (ideally coordinated by NSOs), and international sources provide data. For each SDG indicator, an international organization is responsible (the so-called custodian agency). If they do not find national data of good quality, custodian agencies may make estimates from alternative sources and tools (e.g. earth observation). These estimates should be checked and validated by countries prior to publication.

What is the difference between official statistics and other statistics and data, and does it matter?

505.   First off: yes, it matters. Official statistics are developed, planned, collected, produced, and disseminated by statistical authorities in observance of the UN Fundamental Principles of Official Statistics[198] and other relevant regional or national standards. They are a public good, transparent, independent of political or commercial interests and thus provide additional layers of quality and trust vis-à-vis data and statistics produced by other sources.

506.   Bearing in mind their distinctiveness, official statistics are not enough to cover all SDG indicators. Even when official statistics are available, the timeliness challenge remains. Non-official sources may have more resources, a narrower scope and be less burdened with strict methodological standards than traditional data providers, which in turn enables faster response to emerging information needs.

507.   Therefore, other non-official sources (NGOs, academia, etc.) or tools (e.g. geospatial information) should be explored to cover fully the broad scope of the 2030 Agenda. Users should not be prevented from exploring additional information or from benefiting from innovative approaches (e.g. big data), provided they are fully informed of their quality: these data may contain potential biases (e.g. big data analysis from commercially driven sources), comply with limited quality standards and/or differ in other ways from official statistics. On the other hand, capacity-building efforts should continue to be promoted to strengthen NSSs and their capacity to respond to a greater thematic scope and to an ever-increasing need to provide high-quality, reliable, and timely data/statistics.

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[198] https://www.youtube.com/watch?v=uxb3iOnVr1Y

508.   To conclude, the provenance of the data is important mainly for quality reasons. In reporting on the progress towards achieving the SDGs, we must be sure that data behind decision-making are accurate, comparable and up to date.

Why not use big data?

509.   Big data are undeniably a rich source of information and the "digital revolution" makes it impossible for official statistics to ignore data sources. However, it should not be forgotten that:

- Not all new data sources are within reach for statistical offices, as they are costly and often owned by large private companies which are not keen on making them available for statistical purposes.

- Not all new data sources can be used for statistical purposes. Data from these sources are simply not statistical data. They can complement or provide context for official statistics, but they often fall short of common quality standards and/or deviate from agreed methodologies.

510.   In the SDG context, UN resolution A/RES/71/313 (para 6) stresses that official statistics and data from NSSs constitute the basis for the global SDG indicator framework. It also recommends that NSSs explore ways to integrate new data sources in their systems to satisfy new data needs of the 2030 Agenda, as appropriate. In the spirit of the SDGs, in particular goal 17, data owners should work with their respective NSS to ensure accurate and robust data can be provided for SDG indicators.

511.   See also paras 99-101 of the Road Map and 506-509 above.

What is the role of custodian agencies in the SDG indicator process?

512.   Custodian agencies are international agencies responsible for one or more SDG indicators. They ensure methodological advancements and international comparability of indicators that they are responsible for.

513.   The agencies rely on pre-SDG data reporting flows, national reporting platforms or tailor-made SDG reporting questionnaires to feed the SDG Indicators Global Database with national data. Agencies sometimes also estimate indicator values to fill data gaps. The role of the agencies is performed under existing mandates and they are encouraged to maintain close cooperation with NSSs, for example as regards the validation of estimates and data adjustments. IAEG-SDGs has provided detailed guidelines on how custodian agencies and countries can work together[199].

The global indicator list has over 200 indicators. Why are there still several other indicator lists out there?

514.   Despite the need to compare and assess progress properly worldwide – which is what the IAEG-SDG global indicator framework is designed to do – we would need many more indicators to address all issues described in the goals and targets. Anyone with an interest in monitoring progress towards the SDGs can add indicators to the global list that are pertinent at a regional, national, local or thematic level. This is how – together – we will deliver on the promise of "leaving no one behind".

515.   Additional indicator lists may also be needed to inform regional or national SDG implementation strategies. These frameworks aim to increase country/regional ownership of the 2030 Agenda, by translating its broader commitment into meaningful targets for specific communities. These targets may require tailoring of indicator lists to assess specificities not addressed at the global level.

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[199] https://unstats.un.org/unsd/statcom/49th-session/documents/BG-Item-3a-IAEG-SDGs-DataFlowsGuidelines-E.pdf

516. Another reason for complementing the global indicator list is that more relevant, more accurate or more detailed statistics may be available at regional or national level than at the global level. The IAEG-SDG global indicator list is needed for global comparison and to assess global progress whereas regional, national or sub-national indicators can provide more detail and context.

517. See also Section 5.3 of the Road Map.

Why are so many data still not available?

518. There are several reasons, one important one being that official statistics are under-financed in many parts of the world. According to the Bern Network on Financing Data for Development analysis, "...current data gaps are significant and multidimensional...", and only a very small part of official development aid (ODA) has been allocated to statistics (e.g. 0.33 % in 2016[200]). The impact of this is that many countries lack the "building-block" data collection systems that underpin official statistics, such as birth and death registers, or robust censuses, and they lack resources to improve their data collection, management and analysis. Without the basics, it is not possible to fill the data gaps.

519. At the same time the 2030 Agenda calls for inclusive data, for "leaving no one behind", which means – in a statistical context – delivering data that are not just high-quality, timely and reliable, but also disaggregated by income, gender, race, ethnicity, migratory status, disability, geographic location etc., including data on all vulnerable groups.

520. Even the most developed statistical systems are not able to report data for all the global indictors, many of which call for data not typically collected by NSOs. Countries will have to invest in new technological solutions to increase their capacities and to identify new data sources ("big data", which are mainly data owned by private companies). The most efficient (and sustainable) way to do this is to establish strategic partnerships[201] with data owners. Official statistics will then be able to meet the requirement to serve as the main provider of knowledge and act as a national data steward, ensuring that data are compiled from various sources, efficiently in terms of cost and time, to be used for multiple purposes, including the SDG indicators.

521. A lot of work is needed, including scaling up and making better use of the existing funding, to even out data inequalities and fill data gaps.

What are the consequences if data are not available until 2030?

522. We will have information gaps. This is serious because without evidence, some policies or reforms may be stopped or even neglected, risking leaving behind the most vulnerable groups.

523. To avoid serious gaps in data, all efforts leading to more and better financing of development data should be promoted. This has already been set out in the Cape Town Global Action Plan[202] which emphasizes a country-led approach to planning and implementing statistical capacity building to achieve the 2030 Agenda. It was further crystalized and elaborated in the Dubai Declaration[203] which directly called for strengthening efforts and seeking partnerships between different sectors (official statistics, private sector, NGOs and civil society organisations) in this field. The Bern Network on Financing Data for Development[204] was subsequently created to build the bridge from concept to action, mainly action towards better coordination of donor activities and better financing of statistics.

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[200] https://paris21.org/sites/default/files/2019-07/BernDraftReport_SoftCopy_FINAL.pdf

[201] Principles and framework for creating strategic partnerships are well described in the paper adopted by the 2019 CES plenary and available at: https://undocs.org/ECE/CES/2019/42.

[202] https://unstats.un.org/sdgs/hlg/Cape_Town_Global_Action_Plan_for_Sustainable_Development_Data.pdf

[203] https://unstats.un.org/sdgs/hlg/Dubai_Declaration_on_CTGAP_24_october_2018.pdf

[204] https://bernnetwork.org/

524.   See also paras 404-406 of the Road Map.

How much would it cost to produce the missing SDG indicators?

525.   In its paper "Financing More and Better Data to Achieve the SDGs"[205] the Bern Network argues that "...a reasonable goal in the interim could be to allocate at least 0.7% of ODA (and its equivalent for new providers) for development data.". However, to fill the data gap entirely, a long-term, sustainable financing approach is necessary. The Bern Network has come up with a 5-step proposal[206], including a need for a strong political commitment to scale up and make better use of existing funding. "Developing country leaders need to scale up their support to national statistical systems. Their partners (…) will have to coordinate their support and get behind national priorities. Additional funding will have to come from domestic resources, if possible, and from aid providers, if necessary.".

526.   At the same time, we need to take into account the cost of leaving vulnerable groups behind, not taking necessary measures and developing non-effective policy or interventions - risks involved when quality information and statistics are not available.

Why aren't data available on all vulnerable groups?

527.   The reason is simple: it costs a lot. To report on smaller populations, such as minority groups, or small geographic areas, you need sufficient "power" in your sample. If you only have a few people with the desired characteristics in your sample, you cannot assume that their responses are representative of a whole population. Larger samples are more expensive and time consuming to select.

528.   However, there are ways to mitigate the lack of data. Civil society or research data are often available to complement official or other statistics. These can provide insights if not proof or statistically reliable facts.

Why aren't all official statistics open data?

529.   Mainly because it would be costly in terms of resources to achieve this. Open data are data that anyone can access, use and share.

530.   Open data are data made available in a common, machine-readable format that makes it possible for people to use them however they want, including transforming, combining and sharing them. This machine-readable format often takes the form of APIs (Application Programming Interfaces), the implementation of which requires resources, available mainly in developed countries. High-quality and open data can contribute substantially to solving many challenges of measuring progress on and achieving the SDGs, which is important for everyone — international organizations, governments, and citizens.

531.   We should, however, strive to make data as open as possible. Open data can help make governments more transparent: they provide evidence on how public money is spent, and how policies are implemented.

532.   There are some useful initiatives supporting the implementation of a change in the production and management of official statistics towards open data. The Open Data Inventory (ODIN)[207], managed by the non-profit Open Data Watch, provides annual assessments of coverage and openness that countries can then use to identify and address data gaps. At the same time, it should be mentioned that as it is a composite indicator attention should be paid to its limitations. Such indicators and rankings are used to show more a general direction and not specific problems in the area or in a

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[205] https://paris21.org/sites/default/files/2019-07/BernDraftReport_SoftCopy_FINAL.pdf

[206] https://bernnetwork.org/Bern Network Paper.pdf

[207] https://odin.opendatawatch.com/

country. It may be difficult for users to interpret and often lacks depth and transparency. Sometimes it is not clear whether a shift in the ranking is caused by actual progress or is the effect of, for example, a new data source becoming available in a country.

533. See also para 177 onwards of the Road Map.

Why do global and national data sometimes differ for the same indicator?

534. Not all countries collect data precisely according to the global methodology and, in many cases, it would be too costly or impractical to restructure their national methods to suit global reporting, at least in the short term. For example, some indicators require data for people aged 15 and over, but some countries may only collect this data for people aged 16 and over, or 18 and over. Adjustments may need to be made to compensate for this difference. Even when data are collected in alignment with the global methodology, the custodian agency may use its own population estimates, perhaps to ensure comparability with other indicators, and so rates may differ slightly. What is imperative, however, is that any data about a country should be validated by that country and that methods used for estimation or adjustments are transparent and accessible.

535. NSOs and other national stakeholders should also engage in meaningful dialogue with the custodian agencies to clarify possible discrepancies, while bearing in mind the need to have common denominators (both figuratively and often literally) to properly compare and analyse data on a global scale.

Where can I find the data?

536. Look for them on the respective websites of NSOs and international organisations. Here are some links for your convenience:

UN https://unstats.un.org/sdgs/indicators/database/

UNECE https://w3.unece.org/SDG/en

UNESCAP https://data.unescap.org/

UNECLAC https://agenda2030lac.org/estadisticas/data-and-indicators.html

UNECA https://ecastats.uneca.org/data/

Eurostat https://ec.europa.eu/eurostat/web/sdi/indicators

OECD https://www.oecd.org/sdd/measuring-distance-to-the-sdgs-targets.htm

FAO http://www.fao.org/sdg-progress-report/en/

World Bank https://datatopics.worldbank.org/sdgs/index.html

The UNECE Road Map on SDG statistics

What is the purpose of the Road Map?

537. The global indicator framework for the SDGs incorporates very complex aspects of a statistical data ecosystem. The framework contains many different thematic statistical areas, some new, some well-established, and some very distantly related to traditional NSO and NSS operations. In addition, variations in national legal and institutional settings alongside different custodian agencies lead to extra complexity. The Road Map provides guidance and a strategy on how to implement a system for producing and disseminating data on the SDGs. It sets out the activities associated with statistics for the SDGs by describing what needs to be done, who the main actors are, their roles in SDG monitoring and the opportunities for cooperation. This guidance includes best practices, concrete actions, priorities and recommendations, but should not be seen as a set of rules.

538. It is five years since the first edition of the Road Map was published, and the processes for providing statistics for the SDGs have evolved at global, regional and national levels. Many challenges

remain and new ones continue to emerge, requiring new approaches and solutions. The second edition of the Road Map (Road Map 2.0) aims to continue to guide countries in their work on implementing the indicator framework.

539.   The Road Map 2.0 will benefit not only NSOs and NSSs in and outside the UNECE region, but all institutions dealing with data reporting, assessing progress towards the SDGs and communicating information on the SDGs. It also provides guidance to all national and international stakeholders to support NSOs and NSS in developing the capacities to produce statistics for the SDGs. All chapters provide examples of relevant best practices, concrete actions and recommendations for almost all data-related issues for the SDGs.

Who decided on and prepared the Road Map?

540.   The Conference of European Statisticians (CES), a body consisting of the Heads of statistical offices of UNECE and OECD Member States (about 65 countries), decided to "...launch work on a Road Map for the development of official statistics for monitoring SDGs." in 2015. To prepare the Road Map and monitor its implementation, the CES Bureau set up a Steering Group on Statistics for SDGs in October 2015. This Steering Group and its task teams[208] carried out all the work related to the first and second editions of the Road Map. During its 2018 and 2019 plenary sessions, CES mandated the Steering Group on Statistics for SDGs to update the first edition of the Road Map, based on developments and emerging challenges. The CES plenary session endorsed the 2nd edition of the Road Map in 2021.

What does the Steering Group do? How can it help me?

541.   The Steering Group was established by the Conference of European Statisticians (CES) in 2015 to prepare a Road Map on Statistics for SDGs and to follow up on its implementation. In doing so, it provides guidance to countries and to regional processes on all issues pertaining to statistics for the SDGs. The Steering Group conducts it work through task teams established to investigate and issue guidance for countries on specific issues and processes and by providing input to the regional and global processes. All outputs can be found on the UNECE wiki[209].

How can I use the Road Map?

542.   The Road Map's different sections include specific aspects of statistical processes related to the SDGs. These include national coordination mechanisms, global reporting process, communication of indicators, etc. As mentioned above, there is no "one size fits all" for indicators or countries. These sections aim to inform NSOs and NSSs on existing mechanisms and draw their attention to possible solutions, challenges or best practices. The Road Map is complemented by country case studies – examples of how different countries and organizations are working on statistics for the SDGs.

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[208] https://statswiki.unece.org/display/SFSDG/TEAMS+OF+EXPERTS

[209] https://statswiki.unece.org/display/SFSDG/Statistics+for+SDGs+Home

Annex 2 – GLOSSARY

The glossary provides explanations of a selection of terms to help readers understand of the current Road Map. It is not an exhaustive list of terms related to the SDGs or statistics.

Custodian agency — an international organization responsible for SDG indicator(s), usually in the subject areas it deals with. The tasks of the custodian agencies are to:

- Collect data from national sources, validate and harmonize the data, estimate regional and global aggregates and make data available for international reporting.

- Report data and metadata to the Global SDG Database, contribute to annual UN Secretary General's SDG progress reports, feed into the High-Level Political Forum's follow-up and review processes, analyse trends at regional and global levels for the UN SDG Progress Report and thematic reviews.

- Support improved capacity for data use and analysis.

Custodian agencies were selected if they had an existing mandate for their respective area of statistics, and on a voluntary basis for the other indicators. If no agency was found, the indicator was considered to be an "orphan" and was deleted or replaced. The list of indicators is provided on the UN SDG website with the name of the custodian agency/ies for each indicator[210] .

Data — although the terms 'data' and 'statistics' are often used interchangeably, there is an important distinction. Data are unprocessed observations and measurements, individual pieces of recorded factual information. They are the raw information from which statistics are created. Statistics are data that have been structured, synthesized and aggregated according to statistical methods, standards and procedures. Statistics is the result of processing and presenting data that provides some understanding of what the data mean.

Data ecosystem — a combination of infrastructure and applications in which different actors interact with each other to exchange, produce and use data. This term is used to indicate all data producers within a country, including government agencies, private sector, civil society, universities, media, etc. A national statistical office and statistical system are part of the national data ecosystem, interacting with its other parts. A data ecosystem is important in the context of statistics for the SDGs as some of the data have to be sourced from outside the official statistical system.

Data-flow — in the context of the Road Map, this is the transfer of data between the agencies involved in producing and using SDG data, statistics and indicators (national data producers, custodian agencies, UN agencies, international organizations, etc.).

Data validation — in the context of statistics for the SDGs, data validation means verifying the results of compilation of SDG indicators and ensuring the quality of the statistical results. It usually concerns the validation by countries of the data produced/estimated/released by the international organizations (custodian agencies) for their country.

Data validation describes methods and processes for assessing statistical data, and how the results of the assessments are monitored and made available to improve statistical processes. All checks in terms of quality of the data to be published or already published are included in the validation process.

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[210] https://unstats.un.org/sdgs/dataContacts/

Validation also takes into account the results of studies and analysis of revisions and how they are used to improve statistical processes.

Disaggregation — the breakdown of observations, usually within a common branch of a hierarchy, to a more detailed level at which detailed observations are made. In the context of the SDGs: breaking down aggregate data for specific (vulnerable) sub-populations (other terms used: categorization, granularity, breakdown).

Fundamental Principles of Official Statistics — ten principles that provide the very basis for how official statistics (national statistical offices and statistical systems) operate. First adopted by UNECE in 1992, then by UN Statistical Commission at the global level in 1994, and finally by the UN General Assembly in 2014. This recognition at the highest political level underlines that official statistics - reliable and objective information - is crucial for decision making[211]. The ten principles are:

   i.   Relevance, impartiality and equal access
   ii. Professional standards and ethics
   iii. Accountability and transparency
   iv. Prevention of misuse
   v.   Sources of official statistics
   vi. Confidentiality
   vii. Legislation
   viii. National coordination
   ix. Use of international standards
   x.   International cooperation.

Global SDG indicator framework — an official globally agreed list of indicators to monitor the progress towards the SDGs and their targets. It was developed by the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs, consisting of representatives of national statistical offices), agreed upon by the United Nations Statistical Commission in March 2017, and later by the UN General Assembly (see A/RES/71/313). The global indicator framework includes 231 unique indicators. However, the total number of indicators listed in the global SDG indicator framework is 247, as 12 indicators are used for two or three different targets[212]. IAEG-SDGs is continuously maintaining the list. Annual refinements of indicators are included in the indicator framework as they occur. In 2020, the list was reviewed and updated (E/CN.3/2020/2, Annex II, and annual refinements in E/CN.3/2020/2, Annex III from March 2020). Another comprehensive review of the indicator framework will take place in 2025.

Indicator — a summary measure related to a social, demographic, economic or other key issue or phenomenon derived from a series of observed facts. Indicators are statistics that have been selected for their ability to depict important phenomena or dynamics, and are used to synthesize and present complex statistics in a simple, direct, clear and relevant way. Indicators can be used to reveal relative positions or show positive or negative change. Indicators used for assessing progress towards the SDGs are primarily designed, developed, and used to track changes in social, demographic, economic or other areas[213].

Interlinkage — a relationship between two (or more) SDGs where progress on one goal or target has positive or negative effects on another. Although the SDGs are organized within a framework of goals

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[211] https://unece.org/statistics/FPOS

[212] https://unstats.un.org/sdgs/indicators/indicators-list/

[213] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Statistical_indicator

and targets that represent individual components of sustainable development, they are inherently interdependent. Measures taken to achieve progress on one SDG may reinforce, or compete with the achievement of others.[214]

National indicator/National indicator framework — a set of national indicators to complement the global indicator framework to measure progress towards achieving sustainable development to provide the perspective of national policies and priorities.

National focal point — a national institution (or a person within this institution) responsible for one or more SDG indicators (usually in a specific thematic area). This may be the institution that calculates the data for the indicator. It is the counterpart for the custodian agency at the national level and thus the direct point of contact for data validation. The national SDG focal point is the national organization in a country responsible for the statistical monitoring of all SDG indicators. In general, according to Resolution A/RES/71/31,3 it is the NSO. The SDG focal point can also be the national focal point for several SDG indicators.

National reporting platform (NRP) — a means to disseminate and communicate national statistics for the global and/or national SDG indicators. It is a "platform" in the wider sense and can refer to an integrated website, databases and associated IT infrastructure to gather, host, secure and make available information and related metadata and documentation. Also the term national reporting and dissemination platform (NRDP) is used.

National statistical system (NSS) — combination of statistical organizations and units within a country that jointly collect, process and disseminate official statistics on behalf of a national government. It comprises a) the national statistical office, which is the leading authority of the national statistical system; b) other producers of official statistics, consisting of organizational entities of national authorities as identified in accordance with the statistical law that develop, produce, disseminate and communicate official statistics in accordance with the statistical law[215].

Non-official statistics — statistics produced by agencies that are not part of the national or international statistical system, for example statistics produced by academia, media, private companies, civil society, etc.

Non-statistical indicator — an indicator that contains no statistical variables; these are the indicators in the IAEG-SDGs global indicator list that require a qualitative response (e.g. "yes/no"). For example, the existence of laws or regulations in a certain area.

Official statistics — statistics developed, produced and disseminated in compliance with the United Nations Fundamental Principles of Official Statistics (A/RES/68/261) (and the European statistics Code of Practice/National Code of Practice, where applicable) as well as internationally agreed statistical standards and recommendations. These statistics are produced as a public good by the national statistical offices and other members of the national statistical system and international statistical organizations. Data and information produced by other government agencies outside the statistical system, may be official data or information but they are not formally considered official statistics[216].

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[214] https://unstats.un.org/unsd/statcom/50th-session/documents/BG-Item3a-Interlinkages-2030-Agenda-for-Sustainable-Development-E.pdf

[215] https://unece.org/DAM/stats/publications/2018/ECECESSTAT20183.pdf and https://paris21.org/national-statistical-system-nss

[216] https://www.unece.org/fileadmin/DAM/stats/publications/2016/ECECESSTAT20163_E.pdf

Proxy — an indicator used as a replacement if the exact SDG indicator data are not available. The proxy should be close to the original indicator and measure the same phenomenon. There is no strict definition of a proxy indicator and different kind of proxies are used, varying from slight differences in coverage (e.g. using age group "16 and over" instead of the required "15 and over") to quite different indicators (e.g. using "waste generation per capita" instead of a "national recycling rate"; "percentage of households with a computer" instead of "proportion of youth and adults with ICT skills").

Statistics — although the terms 'data' and 'statistics' are often used interchangeably, there is an important distinction. Data are unprocessed observations and measurements, individual pieces of recorded factual information. They are the raw information from which statistics are created. Statistics are data that have been structured, synthesized and aggregated according to statistical methods, standards and procedures. Statistics is the result of processing and presenting data that provides some understanding of what the data mean.

Statistical indicator — representation of statistical data for a specified time, place or other relevant characteristic, corrected for at least one dimension (usually size) so as to allow for meaningful comparisons. It is a summary measure related to a key issue or phenomenon and derived from a series of observed facts. Indicators can be used to reveal relative positions or show positive or negative change. By themselves, indicators do not necessarily contain all aspects of development or change, but they hugely contribute to explaining them. They allow comparisons over time between, for instance, countries and regions, and in this way assist in gathering 'evidence' for decision making.

Sub-national SDG indicator — an indicator used for measuring progress towards the SDGs at a lower geographic level than a country (e.g. region, municipality, city, etc.) to reflect the specific circumstances of this region.

Sustainable development — development that meets the needs of the present without compromising the ability of future generations to meet their own needs (a definition from the Brundtland report "Our Common Future" published in 1987). In 2015 all UN Member States adopted the 17 Sustainable Development Goals (SDGs) including 169 targets to be reached by 2030 at the latest.

The second edition of the Road Map on Statistics for SDGs aims to provide guidance to members of national statistical systems and other stakeholders on how to best navigate the complex task of measuring the achievement of the goals and targets of the 2030 Agenda. By doing so, it strives to strengthen reliable data-based national information systems and support efforts to achieve the Goals. The Road Map covers different aspects related to the work, such as national coordination, reporting on global SDG indicators, tracking progress at various levels, quality assurance, leave no one behind, communication, Voluntary National Reviews and capacity development. Frequently Asked Questions and a glossary aim to explain in an easily understandable way the issues and terms used. Many examples of how countries are implementing the Road Map are provided on a dedicated website (https://unece.org/statistics/rm-country-case-studies) to inspire and help learn from experiences.

The Road Map can be used in communications with other stakeholders involved in implementing the SDGs, like policy makers, academia, civil society, private sector and media, to explain the issues related to statistics for SDGs, and the critical role of official statistics.

The Road Map was developed by the Conference of European Statisticians' Steering Group on Statistics for SDGs, which includes 17 countries, the Interstate Statistical Committee of Commonwealth of Independent States, Eurostat, OECD and UNECE. The Heads of statistical offices of more than 60 countries from UNECE, OECD and beyond approved the Road Map in June 2021.