# Eighth Meeting of the Expert Group on Environment Statistics (Virtual)

## 12, 13, 14, 19, 20 October 2021

Final Report

1. The Eighth Meeting of the Expert Group on Environment Statistics (EGES), organized by the United Nations Statistics Division (UNSD), was held virtually on 12, 13, 14, 19 and 20 October 2021 during three-hour sessions for each of the days. The meeting was attended by around 134 experts from 36 countries[1] and agencies[2] and by five independent experts.
2. Ms. Reena Shah, Chief, Environment Statistics Section, UNSD, expressed her appreciation to all experts who have contributed to the work of the EGES and welcomed new experts to the meeting.
3. Ms. Ruth Minja, Director for Population Census and Social Statistics Directorate, National Bureau of Statistics of the United Republic of Tanzania, as the chairperson introduced the agenda for discussion which was subsequently adopted.
4. The meeting was organized in five sessions as follows:

   Opening Session
   Session 1: Climate Change Statistics and Indicators: Global Set
   Session 2: Environment Statistics Data Collection
   Session 3: Environment Statistics Toolbox
   Session 4: Capacity Development in Environment Statistics and Climate Change Statistics
   Session 5: Discussion of Priorities and Conclusions

5. The discussions were based on documents and the corresponding presentations were prepared by the EGES and UNSD.

[1] Armenia, Australia, Bangladesh, Botswana, Brazil, Cabo Verde, Chile, Czech Republic, Estonia, Finland, Grenada, Hungary, India, Ireland, Italy, Japan, Jordan, Kyrgyzstan, Luxembourg, Mexico, Nepal, Netherlands, New Zealand, Norway, State of Palestine, Philippines, Russian Federation, Slovenia, Spain, Suriname, Sweden, Togo, United Republic of Tanzania, United Arab Emirates, United Kingdom and Zimbabwe.

[2] African Development Bank (AfDB), Caribbean Community (CARICOM) Secretariat, Eurostat, European Commission, European Environment Agency (EEA), Food and Agriculture Organization of the United Nations (FAO), Gulf Cooperation Council (GCC) Statistical Center, Green Climate Fund, Organisation for Economic Co-operation and Development (OECD), Secretariat of the Convention on Biological Diversity (CBD), Intergovernmental Panel on Climate Change (IPCC), United Nations Environment Programme (UNEP), United Nations Office for Disaster Risk Reduction (UNDRR), UNEP World Conservation Monitoring Centre (UNEP-WCMC), United Nations Framework Convention on Climate Change (UNFCCC), UN-Habitat, United Nations University, World Health Organization (WHO), Economic Commission for Africa (ECA), Economic and Social Commission for Asia and the Pacific (ESCAP), Statistical Institute for Asia and the Pacific (SIAP), Economic Commission for Europe (ECE), Economic Commission for Latin America and the Caribbean (ECLAC), Economic and Social Commission for Western Asia (ESCWA) and United Nations Statistics Division (UNSD).

Short descriptions of the presentations and the main discussion points are summarized below. The meeting conclusions and recommended actions from Session Five are contained in Annex I. The agenda of the meeting is attached as Annex II, and the list of participants is attached as Annex III.

# I. Opening Session

6. Mr. Stefan Schweinfest, Director, UNSD opened the EGES and welcomed everyone to the meeting. A warm welcome was given to the UNFCCC representative who is working closely with UNSD to develop the Global Set of Climate Change Statistics and Indicators. He also gave special thanks to the chair of the EGES, Ms. Ruth Minja. Mr. Schweinfest thanked the EGES for its support to UNSD over the recent years in contributing significantly and substantively to the development of the Global Set. He noted that it was through this collaboration with the experts in the EGES, as well as a wider set of countries and agencies that participated in the recent Global Consultation, that UNSD has been able to reach the stage of having the Global Set mature enough to be submitted to the 53rd session of the Statistical Commission in 2022 for adoption.
7. Ms. Ruth Minja, chair of the EGES, introduced the agenda for discussion which was subsequently adopted.

# II. Session One: Climate Change Statistics and Indicators: Global Set

8. This session included the following parts: (1) Towards globally coordinated work on climate change statistics and indicators – global and national experiences; (2) Draft Global Set of Climate Change Statistics and Indicators: result of the Global Consultation[3]; (3) Climate Change Statistics and Indicators: group work; (4) Related inter-governmental/regional initiatives on climate change statistics; and (5) Selected thematic initiatives and way forward.

### Towards globally coordinated work on climate change statistics and indicators – global and national experiences

Global

9. UNSD's presentation highlighted the process of the development of the Global Set and the overall results of the extensive Global Consultation to which 85 countries and 25 agencies provided feedback. Countries recognized the importance of the Global Set, its relevance to their national statistical and climate change systems, and its potential to serve as a keystone for further climate related data development. It was noted that invaluable inputs were received from countries with regard to the relevance, methodological soundness and data availability for the 134 indicators and 194 underlying statistics contained in the Global Set. UNSD explained

[3] UNSD, *Global Consultation on Climate Change Statistics and Indicators*, further information available at: https://unstats.un.org/unsd/envstats/ClimateChange_StatAndInd_global.cshtml (accessed 27 October 2021).

that based on these results most indicators and statistics are expected to remain in the Global Set demonstrating its overall robustness. In addition, countries and agencies provided comments on the existing indicators and the metadata, as well as proposed some new indicators. Finally, UNSD explained the next steps after submission of the Global Set to the Statistical Commission for adoption in 2022, that include inter alia: the provision of continuous capacity development to countries to carry on activities beyond the Global Consultation; and the development of training materials, implementation guidelines and a strategy for capacity development.

10. UNFCCC acknowledged the appreciation to work alongside UNSD in developing the Global Set, and made a presentation on "Linking Climate Change Statistics and Policy." The presentation covered the Paris Agreement[4] objectives, actions, means of implementation, accountability, and the Enhanced Transparency Framework (ETF); and how to build sustainable domestic ETF arrangements and connected them to the Nationally Determined Contributions (NDCs).[5] UNFCCC noted the increased cooperation with UNSD regarding joint events, workshops, etc. and also briefed the EGES on the upcoming COP 26 Glasgow[6] negotiations.

National

11. Suriname participated in the recent Global Consultation and possesses data for circa 46% of the indicators in the Global Set. Data gaps are about 53%, which are mostly concentrated in Tier 3 indicators, and within the areas of Impacts, Mitigation and Adaptation. Suriname recognized that the indicators and statistics of the Global Set are well structured and cover all the relevant IPCC areas of climate change. While being extensive, countries like Suriname can select those indicators and statistics that are most relevant for monitoring climate change policy. The metadata sheets helped with calculating indicators with the available statistics at the General Bureau of Statistics (GBS) of Suriname. The support provided by UNSD and other partner agencies including UNFCCC, ECLAC, and CARICOM helped with the consultation. Suriname also noted the importance of conducting specialized surveys but which has been hindered due to the lack of resources. The need for further training and capacity development was expressed.

12. New Zealand expressed its appreciation to UNSD for developing this framework and saw the clear need for such a framework tailored for New Zealand, including its use as an exercise for future budget bids. Statistics New Zealand incorporated a 'whole of government' approach in conducting the Global Consultation and recruited a consultant to help provide feedback. New Zealand underlined that the country needs: indicators that measure progress, particularly in the adaptation area; indicators of social and economic impacts; to measure mitigating innovative technologies and business strategies and their impact; and to measure green finance and track

[4] United Nations Framework Convention on Climate Change, *The Paris Agreement*, available at: https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement (accessed 28 October 2021).
[5] United Nations Framework Convention on Climate Change, *Nationally Determined Contributions*, available at: https://unfccc.int/process-and-meetings/the-paris-agreement/nationally-determined-contributions-ndcs/nationally-determined-contributions-ndcs (accessed 28 October 2021).
[6] United Nations Climate Change Conference (COP 26), 31 October – 12 November 2021. Information available at: https://ukcop26.org/ (accessed 28 October 2021).

financial flows. The Global Consultation helped to: raise awareness of the gaps and issues they have with collating and using data to monitor and manage climate change; and motivate enthusiasm to work collaboratively across government towards improving their climate change statistical system. New Zealand noted its intention to create a plan to fill the gaps and associated system elements so that the country has the data it needs to manage climate change effectively. Finally, New Zealand expressed that they look forward to future developments with the Global Set and ongoing collaboration with UNSD and the international community.

13. The United Kingdom (UK) Office for National Statistics (ONS) introduced the UK Climate Change Project, which is a cross-government collaborative initiative to increase the coherence, accessibility and comparability of UK climate change-related data, statistics, and analysis. The Project has three components (Statistics, Portal and Analysis), six pillars (Climate and Weather, Emissions, Divers, Impacts, Mitigation and Adaptation), more than 250 indicators, and four cross-cutting themes (Geographical variations, Distributional effects, Exposure and vulnerability, and Behavioural change). With regard to the UK's experience with the Global Set, the ONS noted that approximately 40% of the Global Set statistics align with the UK Indicator Framework for Climate Change, with an additional 30% of statistics which are similarly defined and/or the UK have partial data. While undertaking the Global Consultation, the ONS consulted and coordinated contributions from more than 20 government departments, bodies and agencies and devolved administrations. It was noted that the UK framework has similar 'Areas' or 'Pillars' to the Global Set. Finally, the ONS explained that the greatest issue they face in the UK is that environmental policy is a devolved government matter and that the main aim for creating a UK framework on climate change was to help overcome this problem and create a centralised portal to access the data through an interactive platform and dashboard.

14. Tanzania shared their country experience working on climate change statistics and the assessment of the Global Set. The reporting of climate change data in Tanzania is vested under the Vice President's Office (VPO), and consequently the GHG Inventory Report is compiled and disseminated via the VPO. The VPO is also a member of the National Technical Working Group on Environment and Climate Change Statistics (NTWG). For the conduct of the Global Consultation a multi-stakeholder approach and bilateral online consultations among the members of the NTWG were held to assess data availability and fill the gaps. Tanzania emphasized that the Global Set is very useful in identifying the scope and coverage of climate change statistics, and facilitating the process of understanding what and how to measure in this emerging area of statistics. Tanzania recommended the use of specialized surveys, strengthening collaboration among stakeholders and the need for increased capacity development on climate change statistics. Finally, Tanzania is looking forward to translate some of the outcomes of the COP24 in Katowice into expected reporting requirements in terms of climate change statistics that can be developed at the national level and to the adoption of the Global Set by the 53rd session of the Statistical Commission in 2022.

### Draft Global Set of Climate Change Statistics and Indicators: Result of the Global Consultation

15. UNFCCC and UNSD highlighted the major findings based on the responses to Part I of the Global Consultation to which 72 (out of 85) countries submitted responses. Many National Statistical Offices (NSOs) have demonstrated strong collaboration with UNFCCC reporting focal points and participation in technical committees, whereas in some other countries, such practices need to be further encouraged or developed. In addition, NSOs are increasingly involved in the preparation of the country's GHG inventory, as part of the reporting obligations of the UNFCCC. A considerable number of climate change related statistical strategies and data outputs have been produced by NSOs, which cover great breadth and depth of the diverse topics and thematic areas of climate change. Climate change surveys or the inclusion of related modules in existing surveys/censuses, as well as the production of climate change statistics reports, are slowly increasing.

16. UNSD introduced the outcomes on Part II of the Consultation, with reflections on the responses received by 74 (out of 85) countries and 17 (out of 25) agencies, key findings on the completeness of the Global Set, suggestions for new indicators and modifications, and metadata contributions. Summary figures were then presented on the relevance, methodological soundness and data availability for each of the indicators and statistics in the Global Set. UNSD also explained how these results can be used to update the Global Set and the tiering of the indicators. Remaining work to be completed, with the support of the EGES and bilateral consultations with specialized agencies, were also outlined.

**Discussion**

17. Statements of support were noted, including that the work on the climate change statistics and indicators is progressing in the right direction.

18. NSOs need to focus attention on the climate change areas where they have unique advantages. An example is the access to anonymized microdata and the possibility of combining administrative and statistical microdata (e.g., census data, household buildings energy ratings, utility gas and electricity meter data).

19. Country approaches to data collection and consultations are important and help other countries to learn from each other as well as to tailor the approaches to the collection of climate change data. This will allow, through the analysis of good practices, the establishment of recommendations and steps in the implementation, understanding the importance to prioritize according to the situation of each country.

20. Suriname GBS stated that they will be using the Global Set of Climate Change Statistics and Indicators as the statistical framework for Suriname's first Climate Change Statistics Report. More collaboration is needed at the national level and more training opportunities should be provided by international organizations like UNFCCC, not only to the NSO, but also to the data providers who collect administrative data and GHG inventories.

21. Experts expressed the need for UNSD and UNFCCC to continue to: collaborate to undertake further joint initiatives to develop and complete the methodologies for the climate change statistics and indicators; bridge the gap between policy and statistics, and between NSOs and climate change reporting agencies at the national level; and collaborate on capacity development with support from other partners.

## Climate Change Statistics and Indicators: Group Work

22. The session started with an introductory presentation by UNSD – outlining the key issues which the EGES was expected to review (in addition to others of a more specialized nature which UNSD is addressing bilaterally with specialized agencies): the suggestions for including new indicators in the Global Set, suggestions to modify some of the existing statistics and indicators, and some examples of Tier 3 indicators which require development of new methods. The experts were then allocated into four groups where the above issues were reviewed and discussed in detail. The groups were defined according to the five IPCC areas (with drivers and mitigation combined into one group): (1) drivers and mitigation; (2) impacts; (3) vulnerability; and (4) adaptation.

### Group 1: Drivers and Mitigation

23. Thirteen experts assembled into a breakout group and focussed their discussion upon the drivers and mitigation areas of the draft Global Set of Climate Change Statistics and Indicators. Discussion focussed upon proposed new indicators and modifications within both areas. For the mitigation area only, question was raised as to whether to keep or omit some indicators.

24. For Indicator 11 "Population growth," experts have suggested that it could be enriched by adding "Life expectancy", as this is an important element of the lifetime consumption of materials and food by a person.

25. At a technical level concerning indicator 13 (Number of (fossil-driven) vehicles per capita), suggestion was made to consider distance (kilometres or miles) travelled by fossil-driven vehicles per capita. If possible, effort to measure the source of energy for electricity generation (e.g., coal, or a renewable energy source, for instance) was suggested. In relation to this statistic Ireland shared its Central Statistical Office's infographics on Fossil Fuel Subsidies 2019.[7]

[7] Central Statistics Office of Ireland, *Fossil Fuel Subsidies 2019*, available at: https://www.cso.ie/en/releasesandpublications/er/ffes/fossilfuelsubsidies2019/infographic/ (accessed 29 October 2021).

26. Nine out of the 12 proposed statistics or indicators were accepted to be included in the Global Set. Similarly, two suggestions for modifications were accepted out of 12. No change was suggested to be made to the Tier three indicator within Mitigation.

27. Throughout it was noted to carefully consider the use of "per capita" where possible and as appropriate while giving consideration to what is being measured (e.g., cumulative $CO_2$ emissions per capita since 1860; or not cumulative).

28. Luxembourg referenced the multi-regional input-output database being applied in Europe (not yet publicly available) when discussing the indicator, "carbon footprint". It was, however, mentioned that methodologies used to obtain comparable statistics among countries on carbon footprint can be contentious. At an international/ global level, such a database and its related methodology could be challenging. This comment advocated that the tier for the indicator remains at level two.

29. Due to difficulties associated with comparing various emissions trading schemes (ETS) (e.g., contents and obligations of an ETS in one country or even one agreed upon by a region or sub-region can vary greatly from another one agreed elsewhere)), the proposal for a new indicator concerning ETS was refuted.

### Group 2: Impacts

30. The impacts group consisted of 22 experts who agreed on several of the new indicator proposals and modification suggestions but had difficulty agreeing on the status of those belonging to the Tier three level since they believed that their expertise in the topics for most of the indicators was not adequate. Seven out of 13 proposed indicators and statistics (e.g., growing degree days, phenological stage, temperature humidity index, relative humidity, daily average temperature, air temperature, and area of expansion of urban and intensive agriculture) were accepted to be included in the Global Set. One suggestion for modification (incidence in heat and cold related illnesses or mortality) was accepted out of 12. Several suggestions for modifications could not be reviewed because the experts felt that more specialized advice was needed (for e.g., indicators and statistics related to water quality). For Indicator 55 "Reduction of natural and semi-natural ecosystems extent", it was advised to consult the Global Biodiversity Framework to reflect the same indicator on natural ecosystems.

31. There was general agreement with the proposal to include more data on women and data disaggregated by sex. The experts also suggested that the repeated statistics should remain in the framework and that it would be more useful to look at the methodology used by countries for Tier three indicators to evaluate their soundness for the Global Set.

32. The experts also suggested the need to measure and value the things that matter in people's daily lives. For example, consumption, attitude, and behaviour indicators may better communicate to people, parents, families, and children. Two examples were brought to the

plenary: CPI basket Climate Change Indicators and City Ecosystem Sustainability Indicators for future consideration.

### Group 3: Vulnerability

33. The experts in this group reached consensus on some of the proposals for new indicators, modification suggestions, and Tier three indicators. Two out of the three newly proposed indicators were accepted to be included in the Global Set: “Water production cost” and “Customer price of drinking water”. The remaining one, “Customer satisfaction with drinking water”, was not recommended to be included due to difficulties measuring it.

34. Similarly, two indicator modifications were recommended to be accepted out of 10 indicator modification suggestions: “Endangered species” is preferred in lieu of “Vulnerable species.” “Proportion of net energy imports to the total primary energy supply” is preferred in lieu of “Dependency on imported energy in total energy consumption.” The remaining eight indicator modifications were not recommended, mainly due to the: i) lack of a clear, concise, and universal definition; ii) limitation of scope and global relevance compared to the original indicators; or iii) need for further consultation with specialized agencies.

35. Furthermore, out of the total of 26 Vulnerability indicators, the expert group recommended to add gender, age group, and urban/rural disaggregation to 15 of them, all of which pertain to population and/or SDG indicator monitoring.

### Group 4: Adaptation

36. Approximately 13 experts assembled into a breakout group and focussed their discussion upon the adaptation area of the Global Set. Discussion focussed upon proposed new indicators, modifications, and treatment of Tier three indicators. Questions were raised as to whether to keep or omit these Tier three indicators and statistics.

37. Where discussion touched upon solid waste, comment was made to distinguish clearly between solid waste collected as opposed to generated. The point is that data availability for both varies significantly. Where attention turns to treatment of waste, the treatment method is important while bearing climate change in mind as GHG emissions from landfill can be substantial, which is not necessarily the case in other treatment methods (such as recycling). Where possible, composition of waste can also inform on GHG emissions.

38. In many cases, experts suggested not to add newly proposed indicators and not to modify existing indicators or statistics in this area. For indicator 105, “Number of sectors planning, budgeting and implementing climate change adaptation actions”, it was agreed to change the unit of measure to percentage. For statistic 5141, “Insurance premiums incurred due to climate

change", it was suggested to add, "by sector" (so as to better measure agriculture, other sectors and households).

39. For cases where a proposal or modification was not decided to be accepted, common reasons were: a lack of methodological guidance; a lack of data availability; as appropriate cross-reference to related work elsewhere (e.g., the Framework for the Development of Environment Statistics (FDES), SDG indicators, etc.) could be made; or that adding such a proposal or modification may duplicate another statistic or indicator elsewhere in the Global Set.

**Discussion**

40. The four groups engaged in active discussions on the defined issues. The feedback received from the Global Consultation and the recommendations from the group work provided thorough grounds to further improve the climate change indicators and their metadata over the next years. The proposals for new or modified indicators and statistics which were agreed by the EGES are listed in Annex IV (Agreed proposals for new or modified indicators and statistics). As explained to the EGES, further amendments are being prepared by UNSD via bilateral consultations with specialized agencies.

41. Following group work, a rapporteur from each group presented findings to plenary. These findings drew comments from experts whereby, based on the extensive Global Consultation, suggestion was made that the Global Set was mature enough for it to be submitted to the 53rd session of the Statistical Commission in 2022 for adoption. These findings will be very valuable to UNSD while it updates the Global Set in preparation for its submission to the Statistical Commission. Continuous improvement of the adopted Global Set will be undertaken, in particular for the Tier 3 indicators, and the metadata. A revised Global Set based on methodological developments and the experience gained from implementation in countries, will be submitted to the Statistical Commission in three to five years for consideration.

### Related inter-governmental/regional initiatives on climate change statistics

42. ECE presented updates on its work in climate change-related statistics. This focused upon the UNECE/Conference of European Statisticians' (CES) Set of Core Climate Change-Related Statistics and Indicators; collection of case studies on climate change adaptation; and the 2021 Expert Forum for Producers and Users of Climate Change-related Statistics. The CES Bureau approved the proposal for a new Task Force on the role of NSOs in achieving national climate objectives. The terms of reference will be available in February 2022.

43. CARICOM presented the various inter-governmental and regional initiatives on climate change statistics it is leading. For CARICOM, one of the key lessons learnt was that strengthening environment statistics can lead to the production of climate change statistics, as illustrated by their first climate change statistics report based on the FDES and the underlying IPCC framework. In order to fulfil the Global Consultation, CARICOM convened a Special meeting of the Technical Working Group for Environment and Climate Change Statistics that reviewed the draft Global Set according to data availability, relevance, data sources, and methodological

soundness. The meeting, inter alia, emphasized that CARICOM's work on climate change statistics can be seen as complementary to the Global Set.

44. OECD presented its work on the International Programme for Action on Climate (IPAC) that complements the work of UNFCCC and Paris Agreement. IPAC can also be seen as complementary to the Global Set where IPAC focuses more on international benchmarking and policy advice while the Global Set is designed to support countries in preparing their own sets. OECD illustrated its IPAC Dashboard which clearly showed the linkages between the IPAC indicators and the Global Set. In particular, it was noted that there was a high degree of overlap between the IPAC indicators and the Global Set, in drivers, physical impacts, hazards, and mitigation measures. OECD saw clear opportunities of cross-fertilisation in indicator development.

45. UNSD presented on the complementarity of various indicator initiatives and the Global Set. This presentation focused upon responses from agencies to Part I of the Global Consultation and shared findings and analysis of remarks based on Part A: Data Collection and Production and Part B: Methodology. For Part A, 15 agencies informed that they collect climate change-related data directly from countries. The main challenges expressed regarding data collection were, inter alia, promoting the use of climate-related data toward policy-makers, data availability at country level, data access and confidentiality, comparability across countries, use of multiple sources leading to duplications and inconsistencies, and different definitions across sources. For Part B, 17 agencies informed that they produce or maintain a list of indicator/statistics that pertain to climate change or some related topics in the Global Set, while 13 agencies indicated that they develop methodological guidelines for climate change statistics or indicators.

### Selected thematic initiatives and way forward

46. FAO delivered a presentation on greenhouse gas emissions from food systems and illustrated that emissions from food systems are large, making up roughly one-third of the total emissions. The presentation also elaborated on how countries can better characterize food systems within their climate ambitions, i.e., commitments to reduce their greenhouse gases. FAO mentioned that large share of emissions, but also large expected negative impacts, make food systems a critical component of climate actions by countries. Granular data over time and at country level help highlight hotspots for climate change intervention, including within NDCs.

47. UNDRR demonstrated that the disaster-related statistics framework does not include new indicators but can support the reporting against agreed climate change indicators. Such indicators may be as agreed within national statistical Systems or through multi-lateral agreements. The Sendai Framework indicators approved by the Open-ended Intergovernmental Expert Working Group (OIEWG) on Terminology and Indicators Relating to Disaster Risk Reduction also contribute to SDG indicators related to disaster risk reduction (DRR) as approved by the Inter-agency and Expert Group on SDG Indicators. Alignment of climate change indicators to DRR with Sendai Framework indicators reduces reporting fatigue for Member States. UNDRR

also noted that a common statistical framework on disaster-related statistics could provide a common methodological foundation for reporting.

**Discussion**

48. For Indicator 103 “Increase in forest area”, it was noted that "forest area" is not a globally representative statistic given forests in the world have a large variability in terms of carbon stocks stored. An efficient forest-related indicator would be "Stored carbon stock". Carbon stored in the forests is not in the atmosphere and any net carbon stock loss is increasing $CO_2$ atmospheric concentration while a net carbon stock gain means that $CO_2$ has been removed from the atmosphere and sequestered into the carbon pools. $CO_2$ removals is a less effective indicator since it doesn't measure the amount of carbon stored in the forest carbon pools (biomass, soils, dead organic matter, etc.) that would otherwise be in the atmosphere (and partially contributing to ocean acidification).

49. Experts proposed a new indicator “Water used by food system”.

50. CARICOM Member States praised CARICOM’s effort in producing their regional climate change statistics report and indicated their motivation to move forward to fill the data gaps.

51. Fossil fuel subsidies as a pressure indicator were discussed, although it was acknowledged that although it is currently not internationally harmonised, it could be featured in a different way in the Global Set.

52. Experts praised the work done by UNSD and stated that the support to countries on the Global Set has been essential.

# III. Session Two: Environment Statistics Data Collection

53. This session was divided into three sections: Water statistics, Waste statistics and Other data collection and reporting requirements (data collection instruments).

### Water Statistics

54. In the first section on Water statistics, the following presentations were delivered: (i) UNSD/UNEP Questionnaire on Environment Statistics – value of country data for informing policy questions, collaboration in water statistics; (ii) Use of Questionnaire wastewater data for informing SDG indicator 6.3.1, project research and related publications; (iii) Technical issues concerning water data collections, in particular on wastewater; and (iv) Country experience providing water data to the UNSD/UNEP Questionnaire.

55. UNSD presented the UNSD/UNEP Questionnaire on Environment Statistics – value of country data for informing policy questions, collaboration in water statistics. Several examples were

demonstrated of how countries' data is valued and used to inform policy decisions relating to SDG indicators such as indicator 6.3.1 (Proportion of domestic and industrial wastewater flow safely treated). The examples spelt out that although much improvement to data collected via the Questionnaire has been made since 1999, there remains much scope for improvement in volume and quality of data.

56. WHO jointly presented with UN-HABITAT on use of Questionnaire wastewater data for informing SDG indicator 6.3.1. The way by which country data are used for key publications such as, "Progress on Wastewater Treatment" was mentioned, as was SDG indicator 6.3.1 methodology, and challenges concerning data collection for wastewater in general (e.g., insufficiencies in the data collection, apportioning industrial as opposed to domestic/household volumes of wastewater generated, etc.).

57. OECD presented on technical issues concerning water data collection, in particular on wastewater. Issues focused upon included data quality and timeliness (e.g., data gaps on generation and discharge of wastewater by pollutant (suspended solids, nitrogen, phosphorous, etc.)), addressing the distinction between industrial and domestic wastewater generated and treated, etc. and how solutions to these issues, such as the use of multi-stakeholder platforms, could help improve the situation.

58. Jordan presented on its experience in water and wastewater statistics, sharing its current status of water and wastewater statistics, an overview of main data sources, data and indicators that are available, and challenges in the water sector in Jordan and in the compilation of SDG indicators such as indicator 6.3.1. Regarding recommendations, Jordan proposed that a clear and binding plan of action for Arab countries to produce sustainable development reports be developed, financial support be provided to Member States to comply with these reports within the time set for the collection of indicators, and that technical assistance and training on water statistics be provided to support the compilation of water-related SDG indicators.

59. In order to stimulate the discussion, UNSD presented a list of questions regarding water data, in particular wastewater data, and the challenges in their production.

Discussion

60. Italy shared its experience whereby almost every 3-4 years, water supply, withdrawal and use, in the whole country, and by regions and municipalities, are investigated. Data on water use exists and there is also work focusing on wastewater (e.g., number of treatment plants, level of treatment (primary, secondary or tertiary, etc.)). Estimations of wastewater generated and treated have been made since 1999, with the most recent data collection taking place in 2018.

61. State of Palestine shared its experience whereby the Multiple Indicator Cluster Survey 6 (MICS 6) is the most recent data source concerning SDG indicators 6.1.1 (Proportion of population using safely managed drinking water services) and 6.2.1 (Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water). For the collection of such data, collaboration between the NSO and the Ministries of Agriculture and

Water are required. Data concerning drinking water and wastewater are especially difficult to collect since wastewater may not necessarily be treated within the State of Palestine. Comment was further expressed of the value of there being strong coordination among international organisations collecting data from countries to avoid duplications in collections.

62. WHO mentioned that they maintain "country files" with the data and estimates for domestic wastewater treatment[8] and asked countries to contact them if there were national data sources from their country that are not included.

63. WHO added a clarification about the WHO/UNICEF JMP estimates, as well as the WHO estimates on household wastewater treatment. The estimated data are not developed through additional questionnaires but by the collection of existing data from national sources including the UNSD/OECD/Eurostat questionnaires as well as many other sources. Before the estimates are published, a country consultation process is held to review the accuracy of the draft estimates, lasting 6-8 weeks. They do not provide a questionnaire to be completed, since they recognize that countries have already many questionnaires and data reports.[9]

64. Brazil raised their situation regarding water and waste data. Data were distributed among different institutions, such as the NSO (IBGE), the National Water Agency and the Ministry of Regional Development. There are often difficulties in these data, which were collected and analyzed by different groups, and there is no legal structure to coordinate this production. IBGE has no legal attribution over other data producing institutions in Brazil. Brazil further stated that they are looking to resume and reinforce some inter-institutional interactions. Those previously defined by working groups to produce SDG indicators have been undone in recent years.

### Waste Statistics

65. In the second section on Waste statistics, the following presentations were delivered: (i) UNSD/UNEP Questionnaire on Environment Statistics – results and uses of the data collection and relevance to SDG indicators; raw data agreeing with international standards; work on 11.6.1, 12.4.2 and 12.5.1; (ii) SDG indicator 12.3.1 (b) Food waste index; (iii) Country experience collecting food waste data.

66. UNSD presented on the UNSD/UNEP Questionnaire on Environment Statistics – results and uses of the data collection and relevance to SDG indicators; raw data agreeing with international standards; work on SDG 11.6.1 Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal solid waste generated by cities, SDG 12.4.2 Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment,

[8] WHO, *Water Sanitation and Health*: https://www.who.int/teams/environment-climate-change-and-health/water-sanitation-and-health/monitoring-and-evidence/water-supply-sanitation-and-hygiene-monitoring/2021-country-files-for-sdg-6.3.1-proportion-of-water-safely-treated (accessed 29 October 2021).
[9] JMP, *Country consultation*: https://washdata.org/how-we-work/jmp-country-consultation (accessed 29 October 2021).

and SDG 12.5.1 National recycling rate. The presentation drew attention to the relevance to SDG indicators of the questionnaires, demonstrated how countries' raw data can be used to agree with internationally used terminologies for official statistics, and showed the consideration being given to food waste and various related terms such as organic waste, organic material, garden waste, biowaste, and biodegradable waste.

67. UNEP presented on SDG indicator 12.3.1 (b) Food waste index. UNEP stressed the importance of the food waste issue globally and showed that in the absence of data collection on this topic, alternative estimation methods such as modelling and extrapolation are being applied. However, data collection exercises from countries need to be planned in order to report on this SDG indicator. UNEP proposes to have the first data collection in 2022 in alignment with the UNSD/UNEP Questionnaire on Environment Statistics (waste section).

68. Hungary presented on its experience in collecting food waste which outlined challenges, some of the methodological research it has applied, data sources, and future steps. It was noted that this is a highly complex statistical domain that cannot be based on traditional data collections and may call upon the collaboration of many institutions within a country. Hungary also explained that different stages/breakdowns need different sources and methods, and that currently no standard methods or sources are available or applicable. It was recommended that a group of experts identify institutions, organistions, NGOs with possible data or information to assist in this work.

69. In order to stimulate the discussion, UNSD presented a list of questions regarding waste data, in particular food waste data, and the challenges in their production.

Discussion

70. Experts discussed how best to measure food waste and related challenges in detail and reference was made to existing sources of definitions on food waste and related waste.[10, 11, 12] Eurostat mentioned the legislative framework (Commission Implementing Decision (EU) 2019/2000) under which countries have to mandatorily report food waste from year 2022 the reference year 2020.[13] Eurostat also mentioned that work on food waste definitions used in the legislation is available on DG SANTE's food waste platform.[12] In addition, DG JRC has provided to

[10] UNSD, *UNSD/UNEP Questionnaire 2020 on Environment Statistics, Section: Waste*, available at: https://unstats.un.org/unsd/envstats/Questionnaires/2020/q2020_Waste_English.pdf (accessed 22 October 2021).
[11] UNEP, *UNEP Food Waste Index Report 2021*, available at: https://www.unep.org/resources/report/unep-food-waste-index-report-2021 (accessed 22 October 2021).
[12] European Commission, *EU Platform on Food Losses and Food Waste*, available at: https://ec.europa.eu/food/safety/food-waste/eu-actions-against-food-waste/eu-platform-food-losses-and-food-waste_en (accessed 22 October 2021).
[13] Eurostat, Waste methodology, available at: https://ec.europa.eu/eurostat/web/waste/methodology (accessed 12 November 2021).

Eurostat a research report based on mass flow analysis for estimating food waste: Building a balancing system for food waste accounting at national level.[14]

71. Countries shared contributions on the status of food waste data in their country, both of whom mentioned there being data available on waste or even organic waste, but data on food waste specifically was more difficult to obtain or inaccessible as of now. Capacity development activities on food waste needs to be considered for the future.

72. Experts shared experiences on the value of a monitoring information system to help inform on food waste and composition of waste. Understanding lifestyle patterns, and conducting surveys specifically collecting data on food waste and toward specific sectors/industries are desirable for future.

73. Mexico shared recent development in its work which included work in the last three years to pilot a survey on food waste and organic matter. Like other countries, there is a lack of resources but now a kind of "crowd working" is being applied whereby researchers, professors, and students use informatic resources provided by the World Bank. In the third year of piloting, there is an attempt to provide 5,000 questionnaires divided into different sectors (e.g., post-harvesting, distributors of food, etc.). They would like a proxy of what they are dealing with in terms of food waste and may double or triple the questionnaire sampling fraction in the future. There is drive and interest in this work from academics, professors and researchers within Mexico.

74. Japan commented that once countries advance their waste treatment systems beyond the straightforward approach of landfilling all waste generated, and then implement alternative waste treatment methods (such as recycling, composting, incineration (with energy recovery), etc.), the demand for data concerning waste treatment from policy makers significantly increases.

75. Experts expressed that the terms and definitions for food waste and related terms need to be discussed and better harmonized. There is a continuous process of adaptation of the food waste reporting guidance.

76. Currently the reporting of food waste shown from Hungary is a reporting obligation that Eurostat is collecting on behalf of DG SANTE.

[14] Publications Office of the EU, *Building a balancing system for food waste accounting at national level*, available at: https://op.europa.eu/en/publication-detail/-/publication/411eb26e-de07-11eb-895a-01aa75ed71a1/language-en (accessed 12 November 2021).

### Other data collection and reporting requirements (data collection instruments)

77. In the third section on other data collection and reporting requirements (data collection instruments), the following presentations were delivered: (i) Introduction to data collection instruments for environment statistics and climate change statistics; (ii) Country experiences on the use of specialized environmental/climate change surveys or inclusion of related questions in censuses; and (iii) Questionnaires on pesticides, fertilizers, and land use – relationship to climate change.

78. UNSD presented an Introduction to data collection instruments for environment statistics and climate change statistics. This focused upon countries' responses to Questions D5 and D6 on the use of specialized climate change surveys, or modules in existing censuses/surveys of Part I of the Global Consultation. It was mentioned that there is an increase in the number of countries including environmentally-related questions in surveys and censuses and that countries are now embarking on such efforts in the area of climate change statistics. Reference was made to the UNSD webpage which houses country environmentally-related censuses and surveys for public consumption.[15]

79. Nepal presented on its data collection for environment and climate change statistics. This detailed the climate change situation in Nepal, as well as the status of data collections and publications in Climate Change and Environment statistics in Nepal. In particular, Nepal described the main outcomes of the National Climate Change Impact Survey that was conducted by the Central Bureau of Statistics (CBS) and showed its approach to responding to the Global Consultation directly using relevant information obtained from the survey results. More recently, the CBS of Nepal: shared the prefilled consultation parts and discussed with the national focal point reporting to UNFCCC; and conducted a technical committee meeting and made a work plan to develop the proposed Nepal specific climate change indicators.

80. Tanzania presented an overview of environment statistics data collection in Tanzania, environment and climate change questions in the 2022 Population and Housing Census, main challenges and recommendations. It stated that the main objective of including questions related to environment and climate change was to, inter alia, collect baseline data for some environment and climate change statistics; raise awareness of environment and climate change for all persons in the country; and seek public opinion on various aspects related to knowledge and perceptions about climate change. It was also recommended that NSOs consider using various data sources to bridge data gaps for environment and climate change statistics.

81. FAO presented on its agri-environmental data collection which focused upon land use, irrigation and agricultural practices; pesticides use and trade; and mineral and chemical fertilizers. The presentation demonstrated the collections' relevance to SDG indicator 2.4.1 (Productive and Sustainable Agriculture) and its many sub-indicators.

[15] UNSD, *Compilation of environmentally-related censuses and surveys and specialized environmental surveys*, available at: https://unstats.un.org/unsd/envstats/censuses/ (accessed 29 October 2021).

82. To lead the discussion, UNSD presented a set of questions regarding the use of surveys or censuses by NSOs, the main recommendations for the development of such surveys/censuses, and solicited suggestions for types of questions to be included in these instruments.

Discussion

83. Tanzania, Suriname and State of Palestine mentioned the value in countries sharing surveys and data collection methods they may have on collecting climate change and environment statistics. Suriname made mention of its work advancing to the point of including climate change-related questions in a forthcoming census, while at the same time expressing appreciation for other countries sharing their data collection instruments.

# IV. Session Three: Environment Statistics Toolbox

84. The session, focusing on the FDES and the Basic Set of Environment Statistics, included presentations on the status of completion of the Manual on the Basic Set of Environment Statistics[16], followed by a presentation on the possibility to develop a tool for climate change statistics and indicators, similar to the Environment Statistics Self-Assessment Tool (ESSAT).[17]

85. UNSD delivered both presentations, starting with a brief explanation about the FDES, its Basic Set and the Manual which includes extended statistical guidance (with definitions, classifications, and dissemination formats) organized in methodology sheets per topic. Fourteen methodology sheets are published on the UNSD website. The wastewater methodology sheet is planned to be published soon. The drafting of a methodology sheet on water quality will be initiated by Statistics Netherlands to which contributions from experts from other parts of the world are welcomed. The methodology sheets on disaster and environmental health will also be finalized in early 2022. Several relations between the Manual and the metadata of the Global Set were also noted.

86. The second presentation explained how Parts I and II used during the Global Consultation can be applied as ESSAT-style climate change self-assessment tools. Examples of the way several countries could improve and advance the completeness of Parts I and II were noted, and further ideas to improve them as self-assessment tools were discussed.

[16] UNSD, *Manual on the Basic Set of Environment Statistics*, available at: https://unstats.un.org/unsd/envstats/fdes/manual_bses.cshtml (accessed 27 October 2021).
[17] UNSD, *Environment Statistics Self-Assessment Tool (ESSAT)*, available at: https://unstats.un.org/unsd/envstats/fdes/essat.cshtml (accessed 28 October 2021).

Discussion

87. Experts discussed the value of cross-referencing between the FDES and the Global Set on Climate Change Statistics and Indicators, especially for cases where, naturally, duplicate statistics exist. Bearing this in mind as well as a possible revision of the FDES in 2023, comment was made toward this Expert Group's involvement in that revision at future meetings.

88. Experts considered that an ESSAT-style tool be prepared for the Global Set, and that existing methodology sheets (e.g., wastewater) be further advanced towards finalization.

89. Experts further stated that the unit of measurement for the various indicators should be included in the ESSAT.

# V. Session Four: Capacity Development in Environment Statistics and Climate Change Statistics

### Capacity development – bilateral and multilateral assistance

90. UNSD introduced an overview of the capacity development activities reported in Part I of the Global Consultation, both by countries and agencies. UNSD mentioned that some of the most important needs reported by countries were: capacity development in collecting climate change related data; development of metadata and indicators; statistics for climate change adaptation and mitigation processes; support tools in national/indigenous languages; and community engagement/platforms. UNSD shared both their past activities (regional and national workshops, various consultancies and online collaboration/coordination) and planned activities (to develop implementation guidelines for national consultations and data sharing processes on climate change statistics; and training materials, e-learning, training of trainers, ESSAT-style climate change tools, etc.).

91. UNSD will complete the assessment of the capacity development needs which will initiate the development of implementation guidelines and training materials. In turn, this shall strengthen partnerships among agencies, including regional commissions and specialized agencies.

Regional activities

92. The presentations on regional activities referenced both multilateral and bilateral assistance. These activities were generally carried out when there were resources available, and country requests had been made. Concrete examples of the challenges were discussed, stressing the need for regular statistical cooperation among the NSOs and other stakeholders. Various projects were held and several tools, activities, training modules, e-learning modules, manuals, etc. were produced.

a. ECLAC gave a brief background on their work showcasing their various products and platforms. They shared current and ongoing projects, planned activities and challenges;
b. ESCAP used a demand-driven approach in supporting Member States to meet their needs for environment statistics and accounts. They shared their tools and modalities used, such as their training courses, e-learning courses as well as webinars;
c. ECE shared the diversity in their Member States and its main objective: support countries in the production and online sharing of environmental data; their target audience and the platforms used for exchange of knowledge and experience;
d. ESCWA shared proposed indicators related to climate change for the Arab region and noted that 90% were matched indicators between the Global Set and the agreed indicators for the Arab region. They shared their projects, workshops and their use of GIS technology; and
e. CARICOM shared their in-country capacity building activities, current work and their areas of success. They recommended:
    i. more capacity-building and investment and related support from their respective governments as well as from international development partners;
    ii. to work closely with environmental agencies that produce data for administrative purposes; and
    iii. to have dedicated personnel to enable concerted attention to this area of statistics.

**Discussion**

93. It was acknowledged that normally persons from the training organization or one country go to another country and make several presentations during a workshop. However, this was considered not to be very effective. It was therefore suggested that one or two people from the recipient country receive targeted training and be responsible for the knowledge matter and pass this knowledge to their colleagues in the country.

94. The experts urged for webinars to be continued, and that beyond the delivery of presentations, discussion sessions be offered between provider and recipient of the capacity development effort.

95. Experts also noted that while virtual training has been very useful, in particular during the pandemic, the most effective method of training is in-person workshops.

96. It was suggested that with the bulk of training materials being developed, UNSD should also look at the possibility of having a common platform to reuse them, including pre-recording tutorials which are very helpful, and can be stored and made available on the same common platform; a regional system to link all the data on the web, openly available, rather than within institutions.

97. UNFCCC has been increasingly engaging with the NSOs, and the Consultative Group of Experts of the UNFCCC conducted regional webinars to enhance NSOs participation to the Paris Agreement reporting. It helps NSOs to realize their important role to play in emission reporting.

98. Technical committees formed in different countries play a very instrumental part in developing climate change statistics. Integrated and joint trainings were conducted and produced significant achievements. International and regional agencies should consider existing technical committees within countries when reaching out to countries in the interest of streamlining capacity development efforts in that country.

99. Countries iterated the importance of national level trainings and workshops. Country workshops help stakeholders recognize the value of their data, and the importance of the metadata. It is an eye opener for the data provider to re-evaluate their data and understand their significant role. The Global Set helped countries to get an overall picture of the scope and coverage of climate change statistics.

100. Experts highlighted the value of the ESSAT and the Global Set to encourage stakeholders beyond the NSO to understand metadata and emphasized the value of administrative data. Often the challenge is to demonstrate to the data providers that they do indeed have data available and that it is of value.

101. The African Development Bank has just renewed its statistical capacity building programme which includes a component on environmental statistics. The Common Market for Eastern and Southern Africa (COMESA) is the implementing agency to whom countries should address their request.

# Annex II

## Conclusions and recommended actions

### Session 1: Climate Change Statistics and Indicators

1. Overall conclusion
   Considering the extensive Global Consultation to which 85 countries from all regions and 25 agencies provided feedback, as well the country presentations and plenary discussions/group work during the meeting, the EGES recommended that the Global Set of Climate Change Statistics and Indicators be submitted to the 53rd session of the Statistical Commission in 2022 for adoption. Continuous improvement of the adopted Global Set will be undertaken, in particular for the Tier 3 indicators, and the metadata. A revised Global Set based on methodological developments and the experience gained from implementation in countries, will be submitted to the Statistical Commission in three to five years for consideration.
2. In addition, with regard to the Global Set the EGES also concluded that:
   a. The Global Set provides a comprehensive statistical framework with statistics, indicators and metadata, designed to support countries in preparing their own sets of climate change statistics and indicators according to their individual concerns, priorities and resources.
   b. The Global Set takes into consideration the diversity of all United Nations Member States at varying stages of developments and geographical characteristics.
   c. The Global Set will assist countries embarking on the development of climate change statistics by providing the scope and coverage as to what may be considered climate change. It can also assist countries already involved in this area of statistics by providing a reference list.
   d. The Global Set is flexible, with a tiering system, to be applied in countries based on relevance, methodological soundness and data availability.
   e. The Global Set will support the implementation of the Enhanced Transparency Framework and the Global Stocktake of the Paris Agreement, as well as climate-related SDG indicators. In this way, international and regional agencies should continue to collaborate to streamline concepts, definitions, methodologies, etc.
   f. The Global Set will facilitate harmonization and cross-fertilization across all levels by promoting complementarity with other regional (in particular the CES set of climate-change related indicators), national or specialized (e.g., disasters, energy, biodiversity) sets of climate change indicators.

3. In terms of the linkage between statistics and climate change policy, the EGES concluded that:
    a. UNSD and UNFCCC continue to: undertake joint initiatives to further develop climate change statistics and indicators; develop implementation guidelines for the Global Set; promote bridging the gap between policy and statistics and between NSOs and climate change reporting agencies at the national level; and collaborate on capacity development with support from regional and other development partners.
    b. NSOs continue to strengthen their collaboration with the UNFCCC national focal points (or national authorities responsible for reporting climate change-related information) and continue to be more involved in the preparation of data submissions to the UNFCCC secretariat, for supporting the implementation of the Paris Agreement.
    c. NSOs advocate to have a more central role in coordinating climate change statistics based on their mandates to produce official statistics and their role in coordinating the national statistical system.
4. In terms of developing national climate change statistics programmes, the EGES concluded that:
    a. Countries are encouraged to implement the Global Set as the framework for climate change statistics and indicators and continue to assess the data availability for the indicators and statistics according to the tiering system. Countries may also apply the CES set of climate change-related indicators that are based on the System of Environmental-Economic Accounting (SEEA) to the extent possible. While both sets are complementary, the Global Set is tailored for all countries while the CES set is highly relevant for the CES member countries. It should be noted that the Global Set also contains indicators that can be derived from the SEEA that are not included in the CES indicator set. It is also recommended to promote complementarity among the Global Set and other regional and national sets of climate indicators to encourage harmonization across all levels.
    b. Countries are encouraged to strengthen existing environment statistics as the basis for climate change statistics given their close interrelationship, and if possible, produce separate climate change statistics publications based on the Global Set.

## Session 2: Environment statistics data collection

### Water statistics

1. International agencies to continue close collaboration while bearing in mind the cost and burden to countries when multiple or duplicate questionnaires are sent to countries. UNSD to continue to make effort to collaborate with FAO, WHO, etc. regarding timing (time of year) of Questionnaires being sent to countries.

2. Collaboration to continue among international agencies to provide support to countries in compiling wastewater data and analysing wastewater issues for better understanding wastewater volumes generated by industries, as opposed to households.
3. Countries to strengthen collaboration at the national level by organizing multi-stakeholder platforms consisting of both users and producers of data.
4. More detailed/focused discussions can be organized, resources permitting, in between EGES meetings to provide a forum of exchange among agencies and countries.

**Waste statistics**

1. Collaboration to continue among international agencies to provide support to countries in compiling waste data.
2. Collaboration among international agencies (UNEP, UNSD, OECD and Eurostat) to discuss harmonization of terminology with a view to adding a new table on food waste in the waste section of the UNSD/UNEP Questionnaire 2022 on Environment Statistics.
3. More detailed/focused discussions can be organized, resources permitting, in between EGES meetings to provide a forum of exchange among agencies and countries.

**Other data collection and reporting requirements (data collection instruments)**

1. Countries are encouraged to develop specialized environmental/climate change surveys and/or include related questions in population and housing census (enterprise and business surveys, living conditions surveys) to increase data availability, raise awareness of climate change and to seek public opinion.
2. Countries to continue providing in kind, where possible, censuses and surveys on environment-related themes to UNSD for public information at: https://unstats.un.org/unsd/envstats/censuses/
3. More detailed/focused discussions can be organized, resources permitting, in between EGES meetings to provide a forum of exchange among agencies and countries.

## Session 3: Environment Statistics Toolbox

1. In addressing topics which duplicate between the FDES and the Global Set on Climate Change Statistics and Indicators, it may be preferred that references be made from one to the other (most commonly, from Global Set methodologies to existing FDES methodology sheets). For instance, for the FDES, meteorology and hydrology are duplicated in the Global Set, but already have statistical guidance.
2. Given that the FDES may be considered for revision after 2023 (10 years after the 2013 version) the Basic Set and the FDES could be addressed together for revision, and this plan can be discussed in the 9th meeting of the EGES in 2022.
3. Noting the value of the ESSAT the experts expressed support that an ESSAT-like tool be prepared for the Global Set of Climate Change Statistics and Indicators.

4. The EGES is requested to consider making contribution to the methodology sheet on water quality following the lead of the Netherlands.

## Session 4: Capacity Development in Environment Statistics and Climate Change Statistics

1. UNSD has collected detailed information on capacity development needs and activities via the Global Consultation in the countries. However, a complete picture of the delivery of capacity development by agencies was not received. Agencies were encouraged to complete Part I of the Global Consultation and submit it to UNSD by 31 October 2021 to be reflected in the summary of the Report of the Secretary-General on Climate Change Statistics for the 53rd session of the Statistical Commission.
2. The regional commissions and UNSD are delivering multiple capacity development activities on environment, climate change and disaster statistics, in partnership with specialized agencies and other development partners, yet further engagement and cooperation is encouraged given limited resources and the need to minimize duplication of effort.
3. Countries urged for capacity development efforts from international and regional levels to consider existing technical committees at the national level in order to streamline capacity development efforts.
4. Countries iterated the importance of national level trainings and workshops, where all national data stakeholders may participate and streamline the national data systems.
5. Capacity development should refer to existing frameworks such as the FDES (and its Manual for the Basic Set of Environment Statistics), the Global Set, the SEEA, the SDGs, etc. to align with international efforts and better tailor the activity.
6. The experts urged for webinars to be continued, and that beyond the delivery of presentations, discussion sessions be offered between provider and recipient of the capacity development effort.
7. Experts also noted that while virtual training has been very useful, in particular during the COVID-19 pandemic, the most effective method of capacity development is still in-person workshops.
8. Experts suggested involvement of NSOs together with other line ministries, especially as appropriate for country reporting to the Paris Agreement. This comment takes into consideration the recommendations from the Statistical Commission in 2018 to UNSD and UNFCCC strengthen the link between statistics and policy.
9. Experts stressed the value of the alignment of activities among international and regional organisations. A common platform may assist with this, and a platform where pre-recorded materials may be stored and made available.
10. Experts highlighted the value of the ESSAT and the Global Set to encourage stakeholders beyond the NSO to understand metadata and the value of administrative data. Often the challenge is to demonstrate to the data providers that they do indeed have data available.

# Annex II

# Agenda

Tuesday, 12 October 2021

Opening session

08:00 – 08:30 Opening and objectives of the meeting

Welcome speech by Stefan Schweinfest, Director, UNSD

Adoption of the agenda and logistical/organizational matters

Session One: Climate Change Statistics and Indicators: Global Set

08:30 – 10:00 **Towards globally coordinated work on climate change statistics and indicators**

Global

a) Global Set of Climate Change Statistics and Indicators (UNSD, 10 min)
b) Linking climate change statistics and policy (UNFCCC, 10 min)
c) Discussion (plenary, 5 min)

*Coffee break* *10 mins*

National experiences

a) Country experiences on Global Set based on the Global Consultation (10 min each)
    - Suriname
    - New Zealand
    - United Kingdom
    - Tanzania
b) Discussion on best practices on climate change statistics (plenary, 15 min)

10:00 – 11:00 **Draft Global Set of Climate Change Statistics and Indicators**

a) Results of the Global Consultation
    - Part I (UNSD/UNFCCC, 15 min)
    - Part II (UNSD, 15 min)
b) Discussion (plenary, 20 min)

Wednesday, 13 October 2021

Session One: Climate Change Statistics and Indicators: Group work

08:00 – 11:00 **Group work** on climate change statistics and indicators according to the five IPCC areas (drivers, impacts, vulnerability, mitigation and adaptation)

- Introduction to group work on the draft Global Set (UNSD, 10 min)
- Introduction to key issues and options in each group (UNSD, 15 min)
- Review and discussion (90 min)

*Coffee break* *10 min*

- Preparation of reporting to plenary (30 min)

Thursday, 14 October 2021

Session One: Climate Change Statistics and Indicators: Plenary on group work and other initiatives

8:00 – 8:50 Reports of group work to plenary (10 min each)

- 8:50 – 9:15 Roundtable discussion (25 min)

*Coffee break* *10 mins*

9:30 – 10:20 **Related inter-governmental/regional initiatives on climate change statistics**

a) ECE set of indicators (ECE, 10 min)
b) CARICOM set of indicators (CARICOM, 10 min)
c) Linking the International Programme for Action on Climate (IPAC) initiative on climate change indicators to the Global Set (OECD, 10 min)
d) Complementarity of various initiatives and the Global Set (UNSD, 5 min)
e) Discussion (plenary, 10 min)

10:20 – 11:00 **Selected thematic initiatives and way forward**

a) GHG emissions along the food system chain (FAO, 10 min)
b) Disaster-related statistics and link to climate change statistics (UNDRR, 10 min)
c) Priorities for future work (UNSD, 20 min)

Tuesday, 19 October 2021

Session Two: Environment Statistics Data Collection

08:00 – 09:15 **Water Statistics**

a) UNSD/UNEP Questionnaire on Environment Statistics – value of country data for informing policy questions, collaboration in water statistics (UNSD, 15 min)
b) Use of Questionnaire wastewater data for informing SDG indicator 6.3.1, project research and related publications (UN-Habitat/WHO, 10 min)
c) Technical issues concerning water data collections, in particular on wastewater (OECD/Eurostat, 10 mins)
d) Country experience providing water data to the UNSD/UNEP Questionnaire (Jordan, 10 mins)
e) Discussion (15 min)

*Coffee Break 10 mins*

09:30 – 10:20 **Waste Statistics**

a) UNSD/UNEP Questionnaire on Environment Statistics – results and uses of the data collection and relevance to SDG indicators; raw data agreeing with international standards; work on 11.6.1, 12.4.2 and 12.5.1 (UNSD, 15 min)
b) SDG indicator 12.3.1 (b) Food waste index (UNEP, 10 min)
c) Country experience collecting food waste data (Hungary, 10 min)
d) Discussion (15 min)

10:20 – 11:10 **Other data collection and reporting requirements (data collection instruments)**

a) Introduction to data collection instruments for environment statistics and climate change statistics (UNSD, 10 min) (Part I: Global Consultation)
b) Country experiences on the use of specialized environmental/climate change surveys or inclusion of related questions in censuses (Nepal, Tanzania, 10 min each)
c) Questionnaires on pesticides, fertilizers, and land use – relationship to climate change (FAO, 10 min)
d) Discussion (plenary 15 min)

Wednesday, 20 October 2021

Session Three: Environment Statistics Toolbox

08:00 – 08:35 **FDES and the Basic Set of Environment Statistics**

a) Status and completion of the Manual on the Basic Set of Environment Statistics (Disasters, Environmental health, Information and awareness, Geology, Water quality, Wastewater) (UNSD, 10 min)
b) ESSAT application for climate change statistics based on Parts I and II of the Global Consultation (UNSD, 10 min)
c) Discussion (plenary, 15 min)

Session Four: Capacity Development in Environment Statistics and Climate Change Statistics

08:40 – 10:00 **Capacity development – bilateral and multilateral assistance**

a) Capacity development events and activities on climate change statistics (Part I of Global Consultation) (UNSD, 15 min)
b) Activities led by regional institutions
    - ECLAC, 5 min
    - ESCAP, 5 min
    - ECE, 5 min
    - ESCWA, 5 min
    - CARICOM, 5 min
c) Discussion (30 min)

*Coffee break 15 mins*

Session Five: Discussion of Priorities and Conclusions

10:15 – 11:00 **Review and decisions on future actions**

# Annex III

# List of Participants

| Name | Title | Organization / Office | Country | E-mail address |
|---|---|---|---|---|
| **COUNTRIES** | | | | |
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# Annex IV

## Agreed proposals for new or modified indicators and statistics

| **Area** | **Change** | **Indicator/Statistic title** [clarification] |
|---|---|---|
| DRIVERS | New indicator 1 | **Greenhouse gas emissions per capita** |
| | New indicator 2 | **Greenhouse gas emissions in gross fixed capital formation of direct investment** |
| | New indicator 3 | **Greenhouse gas emissions in value added of foreign controlled multinational enterprises** |
| | New indicator 4 | **Carbon footprint** |
| | New indicator 5 | **Vehicle miles traveled per capita** |
| IMPACTS | New indicator 6 | **Growing degree days** |
| | New statistic 1 | **Daily average temperature** [for new indicator 6] |
| | New statistic 2 | **Phenological stage** [for new indicator 6] |
| | Modified indicator | **Incidence in heat and cold related illnesses or excess mortality** [old version – 'Increase in heat and cold related illnesses', code 2170] |
| | New indicator 7 | **Temperature humidity index** |
| | New statistic 3 | **Relative humidity** [for new indicator 7] |
| | New statistic 4 | **Air temperature** [for new indicator 7] |
| | New statistic 5 | **Expansion of urban and agriculture areas** [for indicator 'Reduction of natural and semi-natural ecosystems extent', code 2520] |
| VULNERABILITY | New indicator 8 | **Customer price of drinking water** |
| | New indicator 9 | **Water production cost** |
| | Modified indicator | **Proportion of net energy imports to the total primary energy supply** [old version – 'Dependency on imported energy in total energy consumption', code 3210] |
| | Modified statistic | **Total primary energy supply** [for indicator code 3210; old version – 'Final energy consumption (FDES 2.2.2.c)', code 1071] |
| MITIGATION | New indicator 10 | **Rate of decrease of final energy consumption per unit of GDP** |
| | New indicator 11 | **Proportion of non-fossil fuel energy consumption to final energy consumption** |
| | New indicator 12 | **Trade in low carbon technology products** |
| | Modified indicator | **GHG intensity of the economy (including transport)** [old version – 'GHG intensity of production activities (including transport) (UN-ECE 13)', code 4210] |
| | New indicator 13 | **Rate of decrease of GHG emissions per unit of GDP** |
| | Modified indicator | **Progress towards country achieving its NDC** [old version – 'Progress towards GHG emissions reduction target', code 4240] |

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|---|---|---|
| ADAPTATION | Modified indicator | **Percentage of sectors planning, budgeting and implementing climate change adaptation actions** [old version – 'Number of sectors planning, budgeting and implementing climate change adaptation actions', code 5020] |
| | Modified statistic | **Insurance premiums incurred due to climate change by sector** [for indicator 'Average increase of insurance premiums incurred due to climate change', code 5140; old version – 'Insurance premiums incurred due to climate change', code 5141] |