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Climate policy actions require official statistics for monitoring and evaluation aspects. The data collection for reporting to UNFCCC most of the times carried out by specialized institutions, sometimes in collaboration with National Statistical Offices (NSOs), are expected to contribute to building trust and accountability for the Enhanced Transparency Framework (ETF). All countries that ratified the Paris Agreement if not already doing so, are required to report official climate change related information including indicators and statistics via their first Biennial Transparency Reports (BTRs) by the end of 2024.

Based on deliberations during the tenth meeting of the Expert Group of Environment Statistics (EGES)[1] , UNSD, UNFCCC and other key partners agreed to collaborate further to contribute to the UNFCCC 'Together for Transparency' approach and promote the ETF processes, support and reporting tools. This will enhance the understanding of the NSOs role at national level in reporting climate change information under the National Statistical System (NSS), via the implementation of the Global Set of Climate Change Statistics and Indicators[2] , capacity development and advocacy through joint activities such as side events. Such collaboration would, support development of capacity within Member States, promote better informed policy decisions sourced from Member-State-owned official statistics, and benefit political acceptance, build institutional trust, and support the meeting of international obligations.

Taking into consideration the timeliness of UNSD's work programme with respect to the adoption of the Global Set [3] the present time is opportune to emphasize implementation. To this end, the Implementation Guidelines[4] and Climate Change Statistics and Indicators Self-Assessment Tool (CISAT)[5] , prepared by the UNSD in collaboration with the EGES, are both stressed in capacity development endeavors of UNSD and other key partners. The discussions during the tenth EGES revealed that since the 2022 adoption of the Global Set, several countries have made good progress in its implementation. Some countries have progressed because of related initiatives and projects such as the Conference of European Statisticians' core set of climate change-related indicators, European Green Deal[6] , IMF G20 Data Gaps Initiative[7] and PARIS21 Climate Change Data Ecosystem (CCDE)[8]. Currently, opportunities are being explored to offer stronger support for the development of climate change statistics, better defining the key problems to be addressed and taking into account relationships with wider environmental, as well as disaster statistics, as the latter draw attention to the impacts that will increasingly happen in the absence of successful climate actions.

One of the first steps in setting up national climate change statistics programmes is to secure high-level buy-in and mobilize resources, both financial and human which are particularly lacking in the countries with less developed statistical systems. While international climate commitments and funds are growing[9] , there are also growing concerns of their insufficiency as explained in the latest Adaptation Gap Report 2023 by UNEP.[10] Yet there is another side of that problem that was identified when discussing funding for climate

[1] https://unstats.un.org/unsd/envstats/fdes/fdes_eges10.cshtml
[2] https://unstats.un.org/unsd/envstats/climatechange.cshtml
[3] https://unstats.un.org/unsd/statcom/53rd-session/documents/2022-41-FinalReport-E.pdf
[4] https://unstats.un.org/unsd/envstats/Climate%20Change/Implementation_Guidelines.pdf
[5] https://unstats.un.org/unsd/envstats/Climate%20Change/cisat.cshtml
[6] https://www.consilium.europa.eu/en/policies/green-deal/#:~:text=The%20European%20Green%20Deal%20is%20a%20package%20of,prosperous%20society%20with%20a%20modern%20and%20competitive%20economy
[7] https://www.imf.org/en/News/Seminars/Conferences/DGI/about#:~:text=In%202009%2C%20the%20G20%20Finance%20Ministers%20and%20Central,Board%20%28FSB%29%20and%20the%20International%20Monetary%20Fund%20%28IMF%29
[8] https://www.paris21.org/search?text=ccde
[9] See data on SDG indicator 13.a.1 'Amounts provided and mobilized in United States dollars per year in relation to the continued existing collective mobilization goal of the $100 billion commitment through to 2025' here: UNSDG.
[10] United Nations Environment Programme (2023). Adaptation Gap Report 2023: Underfinanced. Underprepared. Inadequate investment and planning on climate adaptation leaves world exposed. Nairobi. https://doi.org/10.59117/20.500.11822/43796

change actions, including data-related ones in various countries, that is, even where funds are available, national institutions have obstacles to access and use it, as explained in this UN report 'Accessing Climate Finance: Challenges and opportunities for Small Island Developing States'.[11]

The importance of statistical skills, resources and mechanisms for efficient data-related operations to contribute to monitoring and evaluation of climate action are often underrecognized, both in terms of the role and needs of the NSO and the national statistical systems (NSS). For example, official statistics managed by NSOs are rarely part of the projects financed to implement climate action and as referenced above this is not a limitation affecting only NSOs but the environmental institutions and agencies too.

The lack of statistical preparedness and statistical culture to offer official evidence for monitoring and evaluation of climate actions may also affect the trust of donors and can deviate or reduce the amounts of funds allocated to countries and projects. These issues clearly emphasize the need for joining efforts and strengthening the collaboration between the NSOs and the authorities in charge of climate activities for more efficacy. NSOs can add value in terms of providing the data for baselines, building information architectures and processes for sustained and official data flows; connecting with the social, economic domains (especially needed for assessing vulnerabilities and planning adaptation actions); national statistical quality assurance and compliance with international norms and standards.

While several countries have made significant progress in implementation of the Global Set, publishing reports on climate change statistics, increasing the collaboration between NSOs and UNFCCC focal points, such initiatives merit more support and mobilization of resources, therefore NSOs need to step up further involvement in climate actions and be part of the funding partnerships.

UNSD NEWS:

The Expert Group on Environment Statistics

The tenth meeting of the Expert Group on Environment Statistics (EGES) was held virtually on 3, 4, 6 and 10 October 2023. With UNSD providing secretarial services from New York, the EGES assembled approximately 130 experts from 34 countries, UN regional commissions and UN agencies. The agenda focused upon: Climate Change Statistics and Indicators; Environment Statistics Data Collection; the Environment Statistics Toolbox; and Capacity development in Environment Statistics and Climate Change Statistics. As it has done for many years, the EGES continues to serve as an invaluable forum for UN member states and international and regional agencies to exchange views concerning environment statistics and to improve measurement of environment and climate change for more informed policy-decision making.

Substantively, key conclusions of the EGES relate to the United Nations Framework Convention on Climate Change (UNFCCC) introduction of requirements for reporting by all Parties under the Paris Agreement and the new reporting tools under the Enhanced Transparency Framework; the usefulness of the Global Set for the reporting by Parties of the Paris Agreement; and the recommendation that national statistical offices (NSOs) enhance their cooperation with national authorities responsible for reporting climate change-related information to UNFCCC. Other conclusions advanced the interrelationship between climate and health as well as climate and gender. This is expected to strengthen UNSD's collaboration with stakeholders who have an interest in those overlaps. The EGES' work in climate change statistics also included a recommendation

[11] https://www.un.org/ohrlls/sites/www.un.org.ohrlls/files/accessing_climate_finance_challenges_sids_report.pdf

for the development a core set of climate change questions to be included in censuses and surveys which can inform the Global Set and beyond, and for the formation of a small group of experts to undertake this work.

Conclusions and recommendations of the EGES, as well as presentations delivered are documented on the website of UNSD and served as a key source of input for the Report of the Secretary-General on Climate Change Statistics (E/CN.3/2024/20) submitted to the 55th session of the United Nations Statistical Commission in 2024 for decision (https://unstats.un.org/UNSDWebsite/statcom/55).

For further details about the tenth meeting, refer to:
https://unstats.un.org/unsd/envstats/fdes/fdes_eges10.cshtml. The Final Report of the meeting is available here: https://unstats.un.org/unsd/envstats/fdes/EGES10/Final%20Report.pdf

UNSD/UNEP Questionnaire on Environment Statistics nears completion of its 11th round

UNSD is nearing completion of the 2022 data collection cycle from which 78 Member States have confirmed responses to the UNSD/UNEP Questionnaire on Environment Statistics - a response rate of 47%. With varying degrees of success, supply of data collected via the Questionnaire is meeting demand for the SDG indicators, the Global Set, and other purposes.

Close consultation with the countries provided an opportunity to improve data quality and strengthen collaboration between UNSD and the relevant institutions in the countries. The global availability of reliable, accurate, and relevant statistics on waste (especially municipal waste, e-waste and hazardous waste) and water (especially wastewater statistics) is gaining special importance.

Collaboration on water through regular teleconferences with international agencies, namely Organisation for Economic Cooperation and Development (OECD), Eurostat, Food and Agriculture Organization of the United Nations (FAO), UN-Habitat and World Health Organization (WHO), has led to a considerably greater usage of the data collected via the Questionnaire. In the area of waste, UNSD has collaborated with UNEP, UN-Habitat and United Nations Institute for Training and Research (UNITAR) to further its development and enable countries to improve the availability of data. UNSD continues to advocate for as many uses (e.g., SDG purposes, Global Set, FDES, SEEA, Sendai Framework, etc.) as possible of data provided by countries to streamline data collection and reduce their reporting burden.

Selected water and waste statistics with relatively good quality and geographic coverage compiled from the Questionnaire, complemented by data from OECD and Eurostat, will be published by UNSD through the UNSD Environmental Indicators webpage and the Country Snapshots webpage. The complete data and footnotes received from each respondent country has been uploaded to the Country Files webpage. Also, selected water and waste statistics have been updated on UNData. UNSD appreciates countries' continuing support on the improvement of timely and reliable global environment statistics and welcomes suggestions to help improve the response rate of countries.

If you have any questions or comments, please send them to: envstats@un.org. The next biennial UNSD/UNEP environment data collection will take place in 2024.

Advancements by the Intersecretariat Working Group on Water Statistics

Throughout 2023, colleagues on this working group from Eurostat, Food and Agriculture Organization of the United Nations (FAO), Organisation for Economic Cooperation and Development (OECD), UN-HABITAT and World Health Organization (WHO) periodically met to discuss topics with a focus on water and wastewater statistics. International data collections on this topic, and demand for statistics to inform policy-decision making is a key feature to discussions.

Topics discussed and advanced during 2023 included validation of data, harmonisation of metadata, use and application of statistics disseminated by UNSD, OECD and Eurostat for informing policies such as SDG indicator 6.3.1 (proportion of wastewater safely treated), data reporting requirements for SDG indicators, coordination of capacity development activities, and regular information exchanges on the status of international organisations' data collections on water statistics. This working group helps UNSD facilitate its communications of documents it submits to the UN Statistical Commission, and as appropriate, may involve other international organisations in advancing technical work.

During the EGES, a panel discussion with an exclusive focus on water statistics meant that many of those colleagues regularly attending this meeting had opportunity to demonstrate their angle and interest on water statistics. A key message conveyed to member states of that panel was the value of member-state owned data, while bearing in mind existing issues leading to data gaps, lack of quality data, etc.

The group is scheduled to review diagrams used in international data collections on water statistics which are aimed at communicating to compilers of water statistics in UN member states. Broadly, the approach is to make clear how the many variables on water statistics are inter-related, how they may be viewed as stocks and flows, and, ultimately, how UN member states may improve the quality of the data they are reporting to international data collections. This work is being undertaken in anticipation of a future data collection round of Questionnaires which shall be sent to UN member states in 2024 by respective organisations.

Updates on the FDES 2013 and the Manual on the Basic Set of Environment Statistics

The Manual of the Basic Set of Environment Statistics was further developed with contributions from experts partaking in the EGES. Two recent additions to the Manual are: Geological and geographical information and statistics (Basic Set of Environment Statistics (BSES), topic 1.1.3); and Freshwater Quality Statistics (BSES, topic 1.3.2). The Manual now comprises 17 volumes, serving to empower UN member states to compile the environment statistics of the Basic Set of Environment Statistics embedded in the FDES 2013.

More recently the official FDES French version is now available online as well as in printed format from UNSD.

Environment Statistics and Climate Change Statistics Reports and Surveys

Many countries are continuing to compile environment statistics compendia and similar publications which apply the FDES 2013 which UNSD makes available on its website at https://unstats.un.org/unsd/envstats/fdescompendia.cshtml so far in Arabic, English, French, Portuguese and Spanish. More recently, countries (and agencies) have started producing separate climate change statistics publications for which UNSD has established a dedicated website at: https://unstats.un.org/unsd/envstats/climatechange_reports.cshtml.

UNSD has compiled over 100 specialized environment statistics and climate change surveys from countries which are available on the website (https://unstats.un.org/unsd/envstats/censuses/) and can be filtered by country, theme and year. Environmentally- or climate change-related questions in censuses are also available. Languages in which surveys or censuses are available include Arabic, English, French, Portuguese and Spanish. Interest in including environment and climate related questions in censuses and surveys has increased and this was discussed extensively at the tenth meeting of the Expert Group on Environment Statistics and also features in the Report of the Secretary General on Climate Change Statistics (E/CN.3/2024/20) to the 55th session of the Statistical Commission to be held in 2024 (https://unstats.un.org/UNSDWebsite/statcom/55).

UNSD welcomes further contributions of both country compendia that apply the FDES 2013, other environment statistics compendia and specialized reports such as on climate change statistics, as well as surveys or censuses on environment statistics or climate change statistics. They can be shared with the Environment Statistics Section (contact: envstats@un.org) where they may then be made available on UNSD's website.

Twentieth Session of the Joint Task Force on Environmental Statistics and Indicators, Geneva and virtual, 16-17 October 2023

As is normal per the long-standing and close collaboration that the United Nations Economic Commission for Europe (UNECE) and UNSD share on environment statistics, a staff member of UNSD presented at this Task Force meeting, this time on an update on Global Work in Environment and Climate Change Statistics.

The presentation included a focus on UNSD's methodological work (especially monitoring the implementation of the Global Set of Climate Change Statistics and Indicators), capacity development and data collection. Following the adoption of the Global Set at the 53rd session of the UN Statistical Commission, UNSD shared that it is now in a phase of following up on the progress of countries, and seeing how NSOs can contribute to national policies which support reporting to the UN Framework Convention on Climate Change (UNFCCC). The value of the Global Set to aid countries to prepare for the Enhanced Transparency Framework (ETF) was highlighted. The Global Set's implementation with the aid of the Climate Change Statistics and Indicators Self-Assessment Tool (CISAT), and the Implementation Guidelines was emphasised, as were training materials and UNSD's continued efforts to support Global Set implementation. Since several member states of this Joint Task Force regularly respond to the biennial UNSD/UNEP Questionnaire on Environment Statistics, preliminary information on responses to the 2022 data collection cycle of that Questionnaire were also shared.

Reference to the work of the Joint Task Force is available at: Twentieth session of the Joint Task force on Environmental Statistics and Indicators | UNECE

INTERNATIONAL NEWS

Making the Green Climate Fund's climate activities more transparent and accessible

(Contributed by Aiko Ward, Data Management Specialist; Jihyeon Jeong, Data and Knowledge management Specialist; and Johann Elysee, Data, Results Management and Knowledge Lead)

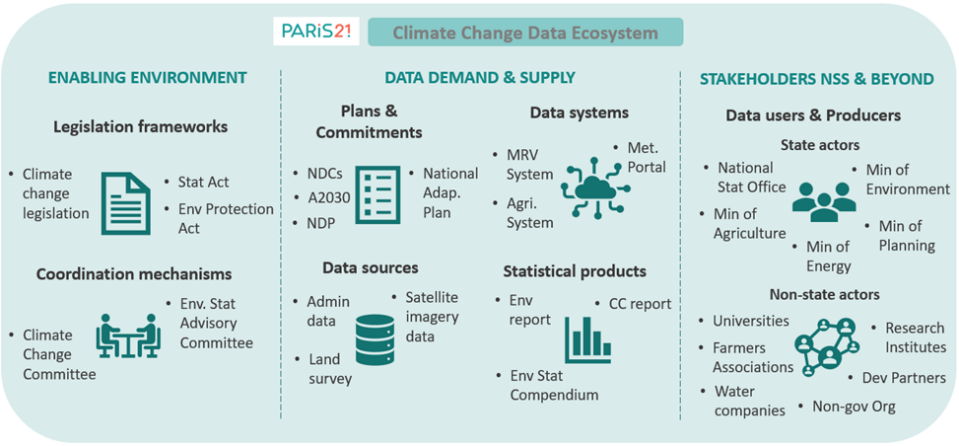
As part of Green Climate Fund (GCF)'s efforts to make its portfolio data and information widely available to the public, the Secretariat launched the Open Data Library (ODL) in September 2022. The ODL allows anyone interested in GCF portfolio data to access, browse and track GCF's climate projects/programmes information and statistics such as funding amount, disbursed amount, and expected mitigation and adaptation impacts including sectoral level impact analyses. Accessing the ODL requires a simple registration and usage metrics indicate strong interest with over 19,000 users accessing the platform since the launch. Currently, GCF is in the process of developing and making available additional dashboards and data analytics as part of the ODL with a view to further enhancing transparency of, and accessibility to GCF's climate activities. More updates to follow in 2024.

Mobilizing climate change data ecosystems in Senegal, Grenada, Belize and Lao PDR

(Contributed by Paz Patiño and Karina Cázarez, PARIS21)

PARIS21 supports national statistical offices and its partners in low and middle-income countries in acquiring the skills, technology, and funding necessary to produce and use better statistics for sustainable development. As climate change has become a priority area for most statistics systems, PARIS21 has developed a Climate Change Data Ecosystem (CCDE) approach which helps ministries of environment, national statistics offices, civil society, academia, and international partners to work across data silos and produce data on all aspects of the climate crisis in an organised, systematic manner that support climate change data use.

A climate change data ecosystem (CCDE) is a community of interacting state and non-state data actors, the legal and policy environment in which they operate, the available data, and the technologies to create, transform and use climate-related statistics.



Along with the CCDE concept, PARIS21 developed the Mobilising Climate Change Data Ecosystems Framework and its tools. Some of the tools are already being implemented in Caribbean SIDS, including Grenada and Belize, Francophone Africa, with a collaboration in Senegal, and Southeast Asia, with an OECD project in Lao PDR. Through this process, PARIS21 has identified complementarity with UNSD's Global Set of Climate Change Statistics and Indicators and its assessment tool, namely the Climate Change Statistics and Indicators Self-Assessment Tool (CISAT).

PARIS21 plans to launch the final version of the Framework and its tools early next year (2024) and continue implementing it in other partner countries, attending to the existing demands.

Mainstreaming climate change into the National Strategy for the Development of Statistics (NSDS)

PARIS21 supports the National Statistical Offices (NSOs) from Belize, Grenada, and Senegal in developing their National Strategy for the Development of Statistics (NSDS), which includes a specific climate change and environment statistics component. Under the leadership of the statistics offices in these countries, and in close collaboration with the Ministries of Environment, an action plan for environment and climate change statistics is being developed.

A collaboration model between NSOs and Ministries of Environment. In the case of Belize, for example, The Statistical Institute of Belize (SIB) and the National Climate Change Office (NCCO) have identified synergies to improve the dissemination of climate change data, leveraging SIB's existing digital infrastructure and expertise.

The climate change action plan as a mechanism to improve coordination. In the case of Grenada, the Central Statistics Office (CSO) plans to use its environment and climate change action plan to mobilise its recently established Environment Statistics Advisory Committee (ESAC). The Committee is expected to provide guidance on the use of environment and climate change statistics and advise on emerging national priorities.

Mainstreaming climate change statistics into data planning can facilitate bringing visibility to statistics and political will. Mainstreaming climate change statistics into strategic data planning can open a path for political will. Senegal plans to have its NSDS, which includes an action plan for climate change data endorsed by the government. This process will help to direct the existing political will on climate change to the data and statistics arena to build a strong CCDE capable of responding to the changing data demands for climate action.

Unlocking climate financing through strengthened environment statistics

PARIS21 is supporting the Lao Statistics Bureau and line ministries in assessing the capacities and data needed to unlock climate and green financing for the country. Using the CCDE framework and tools, PARIS21 has assessed the capacities and data gaps to strengthen environment statistics, which are crucial for facilitating the adoption of a variety of green financing modalities. The assessment was conducted under the framework of the Multi-dimensional Review (MDR) process led by the Development Center of the OECD in collaboration with the government of Lao PDR. Building on the results from the assessment, PARIS21 and Lao Statistics Bureau will explore venues to strengthen capacities for the national CCDE.

Recent PARIS21 activities on Climate Change Data:

- PARIS21 at the "Festival de Datos 2023" - Unlocking the use of climate change data for effective climate action
- Climate change data and indicators: Challenges and opportunities. OECD COP28 Virtual Pavilion
- Towards more coherent climate change data ecosystems – lessons learned from the Caribbean (PARIS21) - a session led by PARIS21 at the UNECE Expert Forum for Producers and Users of Climate Change-related Statistics 2023

- Lessons learned from PARIS21 on mobilising climate change data ecosystems – an intervention by PARIS21 at the UNSD 10th Expert Forum for Producers and Users of Climate Change-related Statistics 2023.
- PARIS21 and SIAP organized a training on strategic planning for statistics that incorporated a session on climate change data mainstreaming in statistical planning. Over 10 countries of the Asia Pacific region participated

E-waste Statistics

(Contributed by Kees Balde, United Nations Institute for Training and Research)

Online course e-waste statistics

The United Nations Institute for Training and Research (UNITAR) has jointly developed an online course on e-waste statistics with the International Telecommunication Union. The introduction of the e-waste challenge is free and accessible to everyone and can be found here:
https://academy.itu.int/training-courses/full-catalogue/introduction-e-waste-challenge

The course addressing the e-waste challenge through data and statistics is available here:
https://academy.itu.int/training-courses/full-catalogue/addressing-e-waste-challenge-through-data-and-statistics

E-waste statistics in East Africa

The United Nations Institute for Training and Research and the International Telecommunication Union have jointly published a baseline study on e-waste in East Africa. It's called "Towards the harmonization of data collection - A baseline study for e-waste in East Africa."

This baseline study uses two approaches to collect data through an internationally adopted methodology: The first approach used calculates data about electrical and electronic equipment (EEE) put on the market (POM) in each country (imports minus exports plus domestic production), and the amount of e-waste being generated. This exercise was performed by country representatives using national data. The second approach collects data through the distribution of household and business surveys in Burundi and Kenya. Both data sets together contribute to greater clarity in comparability among countries in East Africa. In addition to collecting quantitative information about EEE stocks, the household and business surveys help to provide insights into the disposal habits of households and businesses, as well as qualitative information such as consumer behaviour towards environmentally sound management of e-waste.

Please find more here: Towards the harmonization of data collection (globalewaste.org)

National e-waste monitor Kazakhstan

The national e-waste monitor 2023 – Kazakhstan provides an assessment of statistics, legislation, and management infrastructure of e-waste in Kazakhstan. With a projected population of 24 million people in Kazakhstan and an increased consumption of EEE per person, the amount of e-waste generation is expected to grow from 7 kg per capita (136.1 million kg in total) in 2019 to 18 kg per capita in 2050 (432 million kg in total). Forecasting the environmental and socio-economic impacts of e-waste, the report sets out the directions of development of e-waste management system in Kazakhstan to 2050 in two contrasting scenarios, focusing on the associated opportunities to avert environmental and health impacts and recycle valuable materials. In the 'Business as Usual' scenario, the cumulative amount of unmanaged e-waste from 2020 to 2050 could reach 8 billion kg over 30 years, while the Circular Economy scenario would halve this figure to 4 billion kg. The Circular Economy scenario would recover and recycle 3 billion kg of valuable materials by 2050 and reduce greenhouse gas emissions by about 95%. In addition, the Circular Economy scenario would achieve a positive economic effect of USD $276 million in e-waste management in

Kazakhstan until 2050, while the baseline scenario could result in costs of USD $791 million. Building on this analysis, the report provides recommendations and a practical national roadmap for environmentally sound management of future e-waste developed as part of national stakeholder dialogues.

Please find out more here: Kazakhstan-National-E-waste-Monitor-2023.pdf (globalewaste.org)

Regional e-waste monitor for Western Balkans

The Western Balkan countries, including Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, and Serbia, are witnessing a surge in E-waste, mirroring global trends. The joint ITU-UNEP-UNITAR Regional E-waste Monitor for the Western Balkans collects internationally comparable e-waste statistics in the region. This report delves into the characteristics of this increase, such as technological innovations and a growing middle class. Offering factual insights, it meticulously analyzes statistics, key stakeholders, current policies, legislation, technological practices, and societal interdependencies. The report not only highlights the challenges but provides recommendations to address the E-waste issue effectively.

Notably, the region has experienced a 67% increase in E-waste generation since 2010, reaching 0.15 Mt in 2021, with a collection rate at 27%. Despite specific legislation and Extended Producer Responsibility (EPR) schemes in place, challenges persist, including incomplete EPR implementation and inadequate infrastructure. The report's six recommendations advocate for preventative measures, awareness, enhanced collection, improved treatment, safety measures, fair compensation, and increased training to foster a holistic approach across all stakeholders in the region. This report aims to guide policymakers, industries, and communities toward sustainable E-waste management practices.

https://www.itu.int/hub/publication/d-hdb-e-waste-2023-wb/

Updated WEEE (e-waste) calculation tools for European Union Countries

The project "Update and maintenance of WEEE-Tools - ENV.B.3/SER/2019/0014" undertaken by UNITAR-SCYCLE was set up with the aim to update and maintain the WEEE tools and provide support to Member States in using the WEEE Tools. This so-called WEEE Calculation Tool is designed to assist Member States in the calculation of WEEE generated, on the basis of national EEE POM data (providing methodological guidance to calculate EEE POM using the apparent consumption methodology).

The revised WEEE generated calculation tools, to be used for the reporting of the quantities of WEEE generated in year 2021, are available on the EC web-page: https://environment.ec.europa.eu/topics/waste-and-recycling/waste-electrical-and-electronic-equipment-weee/implementation-weee-directive_en

At this webpage a manual on how to use the tool and Guidelines on methods for determining the lifetime of electrical and electronic equipment are also available.

UNEP News

HLPF side event on Strong data for science-based circular water solutions

(Contributed by Therese El Gemayel, UNEP)

UNEP and the European Union organized a side event on "*Strong data for science-based circular water solutions*" as part of the High-Level Political Forum on 18 July 2023 in New York, United States of America. The event showcased the progress made in water data availability and remaining data gaps as well as highlighted innovative ways to close this gap. Through an

exchange of practices of what has been done to narrow the water data gaps and developments regarding the nexus between the circular economy and more sustainable management of water, including experiences regarding the design of infrastructure to improve efficiency, water reuse, the integration of grey water into urban landscapes and improved agricultural water sustainability. More information can be accessed from: Strong Data for Science-based Circular Water Solutions, High-Level Political Forum 2023| HLPF | WESR (unep.org)

Capacity Development activities on selected Environmental SDG indicators
(Contributed by Therese El Gemayel, UNEP)

As part of the EC funded project on enhancing capacity for measuring progress towards the Environment Dimension of the SDGs, UNEP has implemented national activities in Ghana and Senegal 2023. The national activities focused on building the statistical capacities of countries' officials to collect and disseminate data on material flow accounts indicators (SDGs 8.4.1/12.2.1 and 8.4.2/12.2.2), waste indicators (SDGs 12.4.2 and 12.5.1) as well as policy coherence indicator (SDG 17.14.1). UNEP has also implemented a training on food waste indicator (SDG 12.3.1b) where representatives from Bangladesh, India, Kazakhstan and Senegal attended the in-person training that was held on 28 and 29 November in UNEP offices in Paris, France. More information can be accessed from: Enhancing capacity for measuring progress towards the Environmental Dimension of the SDGs | WESR (unep.org)

Environmental SDG Indicators Online Course - French
(Contributed by Therese El Gemayel, UNEP)

The SDG and Environment Statistics Unit at UNEP launched the French version of the Environmental SDG Indicators Online Course in July 2023. The course was developed by UNEP, UNSIAP and UNITAR and is a self-paced course focusing on the environmental SDG indicators.

This course is presented in 10 modules and provides an overview of the importance of monitoring the environmental dimension of development, the linkage with existing statistical frameworks (FDES and SEEA), and how to use environment statistics in decision making. The modules also provide an overview of all 25 SDG indicators under UNEP custodianship. This course is also available in English and Russian.

Capacity Development activities on Climate Change and Disaster-Related Statistics in Lesotho and Cameroon
(Contributed by Ekaterina Poleshchuk (UNEP), Emil Ivanov (UNSD), Roberto Schiano Lomoriello (UNDRR), Aneeshaa Choudhury Shudipta (UNDRR), Martina Granato (UNDRR), Eric Loubaud (UNDP))

In response to an official request received from the Bureau of Statistics of Lesotho, the United Nations Environment Programme (UNEP), the United Nations Statistics Division (UNSD) and the United Nations Office for Disaster Risk Reduction (UNDRR) in collaboration with the Bureau of Statistics and the Disaster Management Authority of Lesotho organised a national workshop on climate change and disaster-related statistics from 31 October to 2 November 2023. The event was made possible thanks to the Environment Fund, UNEP's main financial fund.

The workshop aimed to increase technical capacity for climate change and disaster-related statistics in the country by bringing together and provide hands-on training on priority topics to various stakeholders.

35 participants from various national and international organizations based in Lesotho actively engaged in the training workshop, sharing best practices, lessons learned and technical approaches towards climate change and disaster-related statistics. Notably, the participation of a representative from Eswatini's National Disaster Management Authority on Eswatini's Data Collection Experience further enriched the learning process given the similar contextual disposition of the two countries.

The three-day workshop included seven sessions on international requirements and national experiences in relevant statistics and policy, data governance, as well as two thematic sessions on climate change and disaster-related statistics, with a focus on the Global Set on Climate Change Statistics and Indicators and the Sendai Framework for Disaster Risk Reduction 2015-2030. The workshop established that Lesotho has good basis for the strengthening of a National Statistics System comprehensively covering the data requirements for the Sendai Framework and the Enhanced Transparency Framework (ETF) of the Paris Agreement as well as other national and international commitments related to climate change and disasters. At the end of the workshop, all participants discussed the conclusions and recommendations.

Following the workshop in Lesotho, a similar workshop was organised in **Cameroon** from 7 to 9 November 2023. The organizing team of UNDRR, UNEP and UNSD was complemented by the United Nations Development Program (UNDP) in collaboration with the National Institute of Statistics and Directorate of Civil Protection of Cameroon. The event was made possible thanks to a project funded under the 11th European Development Fund.

The workshop in Cameroon attended 44 participants from across the National Institute of Statistics, the Directorate of Civil Protection of Cameroon, as well as the ministries of natural resources, agriculture, environment, UN agencies in the country, and others. A major contribution to the presentation of the Sendai Framework was made by the representative of the National Civil Protection Agency of Togo. The workshop highlighted that Cameroon has strong commitments and opportunities to develop climate change and disaster statistics as well as long history of producing environment statistics.

For information about Cameroon, please click here. For information about Lesotho, please click here.

FAO News

FAOSTAT Greenhouse Gas (GHG) emissions from the Agrifood Systems
(Contributed by Giulia Conchedda, Francesco Nicola Tubiello, Griffiths Obli-Laryea, Xueyao Pan, Alessandro Flammini, Kevin Karl)

Greenhouse gas (GHG) emissions from agrifood systems are generated within the farm gate, by crop and livestock production activities; by land-use change, for instance deforestation and peatland drainage to make room for agriculture; and in pre- and post-production processes, such as food manufacturing, transport, retail, household consumption and food waste disposal.

FAO compiles and disseminates in FAOSTAT statistics on the GHG emissions generated from all processes within agrifood systems at country, regional and global levels, covering over 200 countries and territories, over the period 1990–2021. Information includes the underlying activity data and the emissions expressed in both single component gases – carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O) and fluorinated gases (F-gases) – as well as their cumulative carbon dioxide equivalents (CO_2eq). In addition, the database includes indicators on emissions per capita, shares in total emissions, emissions per value of agricultural production and per area of agricultural land, and emissions per agricultural commodity.

The activity data from which emissions are estimated are largely derived from data reported to FAO by countries (e.g. data on crops and livestock). FAOSTAT data on land emissions and removals are instead derived from a variety of statistical and non-statistical sources. Forest area and carbon stock change data are taken directly from the national statistics collected by the FAO the Global Forest Resources Assessment (FRA), conducted at five years intervals. Conversely, statistics on burnt area and biomass fires, area of

degraded peatlands and related emissions, are computed geospatially and then aggregated at the national scale using maps compiled monthly or annually from remote sensing.

Trends in the emissions from agrifood systems with a focus on land-related emissions over the past decades are discussed in:

FAO. 2023. Agrifood systems and land-related emissions. Global, regional and country trends, 2001–2021. FAOSTAT Analytical Briefs Series No. 73. Rome. https://doi.org/10.4060/cc8543en

The database is composed of the following FAOSTAT domains:

Emissions totals https://www.fao.org/faostat/en/#data/GT
Emissions indicators https://www.fao.org/faostat/en/#data/EM
Emissions intensities https://www.fao.org/faostat/en/#data/EI

Emissions from crops https://www.fao.org/faostat/en/#data/GCE
Emissions from livestock https://www.fao.org/faostat/en/#data/GLE
Emissions from energy use in agriculture https://www.fao.org/faostat/en/#data/GN

Emissions from forests https://www.fao.org/faostat/en/#data/GF
Emissions from drained organic soils https://www.fao.org/faostat/en/#data/GV
Emissions from fires https://www.fao.org/faostat/en/#data/GI

Emissions from pre- and post-production https://www.fao.org/faostat/en/#data/GPP

Ad hoc Technical Expert Group (AHTEG) on Indicators
(Contributed by Jillian Campbell and Monique Chiasson, Convention on Biological Diversity)

An AHTEG on Indicators was established to guide the further development of the monitoring framework for the Kunming-Montreal Global Biodiversity Framework which was adopted at COP-15. The monitoring framework includes a list of headline indicators which will be included in national reports from countries, a list of binary indicators which will be comprised of a series of yes or no questions which will be in national reports from countries and a list of component and complementary indicators which countries are encouraged to use as relevant. A number of the headline indicators do not yet have operational methodologies and the binary questions are still under development. The AHTEG's work up to this point has been focused on these issues, but the group will also conduct an analysis of capacity needs and opportunities next year. The group held an in-person meeting in Montreal from 3 to 6 October 2023.

The AHTEG noted that the metadata for each indicator should include an assessment of remaining gaps in methodology, data flows and use of each indicator. The AHTEG compiled comments, questions and notes on specific indicators which can be used to further develop the metadata for each indicator. The AHTEG agreed on a path forward for each headline indicator as shown in Annex I (see: https://www.cbd.int/doc/c/f22d/ab58/236acdd54779ab58b97aecf1/ind-ahteg-2023-03-02-en.pdf) of the report of the meeting. In the context of reviewing each indicator potential, linkages with relevant groups or organizations will be considered.

The AHTEG also noted that there are some cross-cutting issues which should be considered for all Headline indicators as the metadata are further developed. The following cross-cutting issues were noted:
(a) There were six indicators that could be disaggregated by gender, age or other group; however, some additional development of the indicators is needed to include gender. The AHTEG noted that, for many

indicators, gender was not a possible disaggregation by data layer; however, the AHTEG recognized that processes for deciding priorities and implementation of monitoring and assessment activities should include gender concerns for all indicators.
(b) There were 15 indicators for which the information could potentially be disaggregated by Indigenous Peoples and Local Communities (IPLC) or Indigenous and Traditional Territories (ITTs) and, for some of these, if spatial data layers are provided, disaggregations are possible for later analysis at global or regional level. Indigenous data sovereignty and free, prior and informed consent must be respected in the indicator development and monitoring processes.
(c) At least 10 headline indicators where a consistent approach to disaggregating by ecosystem would be beneficial and the use of the IUCN Global Ecosystem Typology for consistency across goals and targets, indicators and sectors was recommended.
(d) The AHTEG agreed that the development of guidance on a human rights based approach for monitoring in accordance with Section C would be useful.

The AHTEG agreed to use the online discussion forum to ask specific questions which can assist the further development of the Headline indicators. The AHTEG determined specific members of the Group who will post questions on the forum in order to stimulate this discussion. The online forum is available at: https://www.cbd.int/gbf/related/monitoring/ind/forum/.

The AHTEG decided that, in order to assess gaps and to review the component and complementary indicators, an assessment the coverage of the different aspects of each goal and target across the monitoring framework would be worked on by members of the Group with the aim to complete the analysis and share it for discussion during the final meeting in March 2024.

Upcoming events

The AHTEG will hold its fourth and fifth meetings online on 4 December 2023 and 29 January 2024, respectively. The sixth meeting will be held in person in Cambridge, United Kingdom of Great Britain and Northern Ireland, from 12 to 15 March 2024.

Further to the next steps agreed by the third meeting related to collaboration with relevant organizations, an Expert Meeting will be convened at the offices of the Food and Agriculture Organization of the United Nations (FAO) in Rome, Italy, from 23 to 24 January 2024, to develop the methodology and metadata for Headline indicator 7.2 (pesticide environmental concentration) under the monitoring framework.

The AHTEG will present its final report to SBSTTA-26 which will convene in Nairobi from 13 to 18 May 2024.

For more information:

- Monitoring Framework for the Kunming-Montreal Global Biodiversity Framework
- Ad Hoc Technical Expert Group on Indicators
- Online Forum for the Monitoring Framework

Environmental Statistics in COMESA

(Contributed by Ngawo Banda, COMESA Statistics unit)

Environment statistics give critical information about the state of the environment and its most relevant changes through space and time. They strengthen assessments through quantitative techniques, making analyses more robust, timely and progressively harmonized at the international level.

COMESA offered technical assistance and capacity building to member states premised on the internationally agreed Framework for the Development of Environment Statistics (FDES 2013).

Kenya requested COMESA to provide technical assistance and capacity building on environment statistics. With support from the Institutional Capacity Building Programme (ICBP) funded under the 11th European Development Fund (EDF-11), a national capacity building workshop was convened from 14th-17 March 2023 to build and strengthen the capacity of the participants to develop environment statistics and climate change statistics and indicators. Following the capacity building workshop, the COMESA technical team consisting of Statistical Capacity Building Program Phase 5 (SCB-V) consultants and the COMESA Agriculture and Sectoral Statistician held consultative meetings with key stakeholders to gain insight on the existing data gaps as well as offer technical guidance on the role of stakeholders in filling the existing gaps. Having received capacity building and technical assistance, the Kenyan stakeholders undertook data collection and updated their national draft compendium. The compendium of environmental statistics was subjected to data validation by stakeholders in a follow up workshop that was conducted from 16-19 October 2023. Graphic designs are currently underway in readiness for publication of the compendium by the end of 2023.

With support from COMESA, Kenya will have its first Compendium of environment statistics. The Compendium is important as it serves as reference material for policy makers and professionals in the fields of environment to increase awareness, knowledge and statistics of the environmental situation in the country. Six goals in the Sustainable Development Goals (SDGs) are linked to the environment, these are goal 6,8,12,14,15 and 17. The increased awareness and knowledge in environment statistics for Kenya will be useful to monitor progress made towards these SDGs and associated targets.

Zimbabwe also requested for technical assistance on the production of a climate statistics report. With support from the Institutional Capacity Building Programme (ICBP) funded under the 11th European Development Fund (EDF-11), a national workshop was convened from 24-28 April 2023 and attended by members of the Technical Working Group (TWG) for climate change statistics. Participants were introduced to the Global Set of Climate Change Statistics and Indicators. Additionally, the Climate Change Statistics and Indicators Self-Assessment Tool (CISAT) was completed in expert groups and plenary sessions. Data gaps were identified and relevant departments in the TWG were tasked to provide the data to Zimbabwe Statistics Agency as the coordinating department for data collection. Data collection for the climate change statistics report is in progress.

Burkina Faso: Through the SCB-V, COMESA also offered technical assistance support to Burkina Faso to produce the compendium of environment statistics during a mission held from 17-21 April 2023 to build capacity in national stakeholders and support the country complete data collection questionnaires needed to update the compendium of environment statistics. Data was collected following the April mission. A follow up mission was held from 19-23 June 2023 to validate the data in the compendium. The draft compendium is available and the final publication is expected by the end of 2023.

Progress of Environment Data Compilation for the CARICOM Region and Plans for In-Country Technical Assistance Activities

(Contributed by Faustina Wiggins, Caribbean Community Secretariat (CARICOM))

The Caribbean Community (CARICOM) Secretariat Regional Statistics Programme (RSP) continues to monitor the submission of environment statistics under the **fifth round of environment data collection.** In April 2023, the RSP forwarded populated data template to all member states in order to compile data on environment statistics for dissemination through the publication, the CARICOM Environment in Figures. Data is in the process of being verified and updated for ten (10) countries based on submissions to the CARICOM Secretariat. Data were also sourced from other regional and international organisations in order to fill data gaps and this include tourism data up to 2022 from the Caribbean Tourism Organisation (CTO) and the United Nations Statistics Division/United Nations Environment Programme (UNSD/UNEP) Questionnaires on Environment Statistics for indicators under the themes, Waste and Water for countries submitting data.

Additionally, the CARICOM Secretariat received Anguilla's first Environment Statistics Compendium 2015 with data for the period 2011 to 2015, Grenada's Environment Statistics Compendium 2023 and Suriname's first Climate Change Statistics and Indicators publication, based on the United Nations Statistics Division (UNSD) framework. The main challenges encountered during the data compilation exercise was competing priority of the conduct of the 2020 round of Population and Housing Census in member countries, lack of dedicated staff to focus on this area of statistics and lack of coordination within the National Statistical Systems (NSS) in Environment Statistics. Nevertheless, it is anticipated that there will be a reduction of the existing data gaps in this area with the completion of the 2020 round of Population and Housing Census coupled with greater interagency collaboration within the NSS with some countries advancing work on the National Strategy for the Development of Statistics (NSDS).

Further, to support the strengthening of inter-agency coordination within the NSS, the CARICOM Secretariat will conduct in-country technical assistance visits to three (3) member states in this area under the 11th European Development Fund (EDF) project in 2024. The RSP will also continue to advocate for stronger Memorandum of Understanding (MOUs) between National Statistical Offices (NSOs) and agencies, which could lead to improved production of environment and climate change data. Additionally, the CARICOM Secretariat continues to laud the collaboration with the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), UNSD and other partners, in the execution of CARICOM SIDS Climate Change and Disaster Statistics Project from 2021-2023, which has contributed to strengthening of inter-agency coordination within the NSS in CARICOM Member countries in this area of statistics.

Moreover, the RSP has identified twenty-one (21) Environment Indicators from the list of CARICOM Core Sustainable Development Goals (SDGs) indicators, which have been included in the CARICOM Core environment indicators list. Early assessment of the data submitted by countries for the fifth round of data collection has revealed that very few countries have reported environmental SDGs indicators despite the availability of data to compute these indicators. The CARICOM Secretariat convened a workshop on the CARICOM Core SDGs with support from the 11th EDF from 20-23 November 2023 in Port-of-Spain, Trinidad and Tobago to address issues related to the compilation of these indicators including the environmentally related SDGs indicators. Further, an updated gap assessment was conducted prior to the workshop to obtain recent information on the availability of the SDGs indicators.

The compilation and dissemination of environment statistics is critical to monitoring environmental threats in the CARICOM Region including the 2023 El Niño weather phenomenon, which has affected health, food security, water management and the environment as well as measuring impact of economic activity on the environment. The current **data dissemination** efforts and planned **in-country technical assistance activities** by the CARICOM Secretariat, with support from the 11th EDF, will ensure better data on the region's

environment is available for monitoring and reporting.

ECLAC Activities in Latin America and the Caribbean

(Contributed by the Statistics Division, Economic Commission for Latin America and the Caribbean)

Latin America and the Caribbean: Regional Climate Change Profile, at CEPALSTAT Platform, July 2023

ECLAC published a Regional Climate Change Profile as a part of the Regional Profiles Section at CEPALSTAT. This profile, whose main objective is to provide a comprehensive overview of regional climate trends, integrates climate change indicators with available information about the LAC region. This profile adheres to the logic and guidelines set by the Intergovernmental Panel on Climate Change (IPCC), ensuring coherence and compatibility with international standards. The structure of the Regional Climate Change Profile reflects the five priority areas identified by the IPCC, and it used selected indicators from the Global Set of Climate Change Statistics and Indicators.

For further information kindly click here:
https://statistics.cepal.org/portal/cepalstat/regional-profile.html?theme=5&lang=en

Session: Strengthening environment, climate change and disaster statistics in Latin America and the Caribbean in the Twelfth meeting of the Statistical Conference of the Americas of ECLAC. First Session. 26 September 2023, Santiago de Chile

While the region is renowned for its environmental and ecological importance, this importance is not reflected in the official statistical systems. The field of environmental statistics remains the least developed in the region, compared to social and economic statistics. The production and development of environmental statistics requires a wide range of data and sources, as well as specific skills and expertise, which is why they are considered multidomain statistics. Consequently, the responsibility for producing these statistics rests with different institutions that compile data using varying methods. The same is true for climate change and disaster statistics. In this session, Georgina Alcantar of the Statistics Division of ECLAC, José Eduardo de la Torre from the National Institute of Statistics and Geography (INEGI) of Mexico, Dante Carhuavilca, National Institute of Statistics and Informatics (INEI) of Peru, and Juana Pantoja, National Office of Statistics and Information (ONEI) of Cuba examined advances in the development of environmental, climate change and disaster statistics and indicators, as well as ongoing efforts to strengthen the capacity of national institutions to address these issues.

For further information kindly click here:
https://cea.cepal.org/12/en/programme/strengthening-environment-climate-change-and-disaster-statistics-latin-america-and

Approbation of the Working Group for the Strengthening of official environmental statistics systems, in the Statistical Conference of the Americas (SCA) for 2024-2025 plan. 28 September 2023, Santiago de Chile

The Instituto Nacional de Estadística y Censos de Costa Rica presented a proposal at the SCA meeting to integrate a working group that aims to strengthen the official environmental statistics systems in Latin America and the Caribbean countries. The group will produce a recommendations document and review the results of the ECLAC diagnosis of the situation and governance of environmental statistics. The group will also identify good statistical practices to strengthen environmental statistics and explore opportunities for collaboration through their exchange, allowing the strengthening of the official systems of environmental statistics, integrated into the national statistical systems of the countries of LAC region. The group will review the ECLAC diagnosis of the situation and governance of environmental statistics, also collect and systematize experiences, opportunities, and good statistical practices of the countries for the strengthening of

environmental statistics and hold meetings and workshops for sharing and learning about opportunities for bilateral collaboration. This working group will have a technical secretary shared between ECLAC Unit of environment statistics, climate change and disaster and the Regional Office of UN Environment Programme.

For further information kindly click here:
https://cea.cepal.org/12/en/programme/review-and-adoption-biennial-programme-regional-and-international-cooperation-activities-0

Tenth Meeting of the Expert Group on Environment Statistics (EGES). Virtual meeting organized by the United Nations Statistics Division on 3, 4, 6 and 10 October 2023

ECLAC was represented on the forum and particularly delivered a presentation on the Session Four: Capacity Development in Environment Statistics and Climate Change Statistics, with the main results of the DA12 project. This presentation was focused on the efforts for Caribbean SIDS to compile relevant climate change and disaster indicators for evidence-based policies, work which spanned from 2020 to 2023. Thematically, there was a focus on environment, climate change and disaster statistics, and the project drew several conclusions related to evidence-based policymaking. Throughout the project the FDES was applied, and the project included an analysis of availability of statistics in each of the six components of the Basic Set of Environment Statistics. The ESSAT was also used to help identify data gaps, and to help inform national priorities. Availability within Member States of climate change and disaster statistics was also assessed, broken down by the same areas as in the Global Set; namely: drivers, impacts, vulnerability, mitigation, and adaptation.

For further information kindly click here:
https://unstats.un.org/unsd/envstats/fdes/fdes_eges10.cshtml

National Workshop: Introductory to Environment statistics and indicators, 23-26 October 2023, Cuba

Technical assistance was provided on environment statistics and indicators building with the objective of having a trained inter-institutional technical team and identifying a common conceptual basis on environmental statistical processes (data, basic statistics, indicators, sources, among others) to build, sustain and update the existing set of environmental indicators and build new indicators in the future. The ECLAC support consisted of an online workshop to identify, compile, and calculate some environmental indicators from FDES and the SDG agenda with some experts' presentations about the main information challenges on these indicators and the Global Set of Climate Change Statistics and Indicators.

For further information kindly click here:
https://www.cepal.org/es/cursos/curso-introductorio-estadisticas-indicadores-ambientales-cuba

Planned activities:

- Next Issue of the ECLAC's Statistical Yearbook with the environmental statistic chapter.
- Technical assistance for Dominican Republic, Jamaica, Ecuador, Argentina, and Cuba.

For further information kindly click here:
https://comunidades.cepal.org/estadisticas-ambientales/es

UNECE News

(Contributed by Michael Nagy and Malgorzata Cwiek, UNECE)

Past events and ongoing activities

The 2023 Expert Forum for Producers and Users of Climate Change-Related Statistics (28-30 August 2023, Geneva)

The 11th UNECE Expert Forum for Producers and Users of Climate Change-Related Statistics was held on 28-30 August 2023 in Geneva, Switzerland. The Expert Forum was attended by representatives of 23 countries and a number of international organizations, as well as participants from the private sector and academia.

The 2023 Expert Forum included the following sessions:

- Producing, disseminating and communicating climate change-related statistics and indicators for policymakers and the public
- Informing climate change mitigation policies
- Informing climate change adaptation policies
- Data needed to support a just transition
- Climate finance and the economic aspects of climate change

Each session discussed best practices, existing challenges and recommendations for improving statistics and data for climate policy and analysis in a particular area. The 2023 Expert Forum also reviewed and provided feedback on the draft *Guidance on the role of national statistical offices in achieving national climate objectives* being developed by a dedicated UNECE Task Force. All presentations and papers can be found on the meeting webpage: https://unece.org/statistics/events/EFCCRS2023.

The Expert Forum was organized by the UNECE Steering Group on Climate Change-Related Statistics, chaired by Statistics Netherlands. In preparation for the Expert Forum, the Steering Group conducted a questionnaire about countries' achievements and plans in climate change-related statistics. The collected information is available in the Climate Change-Related Statistics in Practice 2023 report. The questionnaire results from previous years are available under the respective links: Climate Change-Related Statistics in Practice 2021 and Climate Change-Related Statistics in Practice 2022.

COP28 Side Event: Enabling climate action through data, transparency and finance (5 December 2023, Dubai)

An official COP28 side event "Enabling climate action through data, transparency and finance" was co-organized by UNECE, United Nations University - Institute for Environment and Human Security (UNU-EHS), the Initiative for Climate Action Transparency (ICAT) and UN Office for Disaster Risk Reduction (UNDRR) on 5 December 2023 in Dubai. The recording of the event is available on the UNFCCC YouTube channel.

The event focused on key enablers to accelerating climate solutions across sectors and systems, in particular, data, transparency and accountability, triggering better finance. It emphasized the need for high-quality statistics and data to support reporting, policymaking, and public awareness.

The event included opening remarks by Ms. Tatiana Molcean, United Nations Under-Secretary-General and UNECE Executive Secretary, Prof. Dr Xiaomeng Shen, Vice-Rector in Europe, Director of Institute for Environment and Human Security, UNU and Mr. Oleg Bulanyi, Senior Programme Officer, ICAT/UNOPS and a panel discussion among Lennox Gladden, Chief Climate Change Officer, Belize; Otto Swertz, Chair of the UNECE Task Force on the role of national statistical offices in achieving national climate objectives and

Head of Energy Statistics in Statistics Netherlands; Marcos Concepcion Raba, Executive Director, Global Network of Civil Society Organisations for Disaster Reduction (GNDR) and Albert Kroese, Chief Statistician, Data Officer, and Director of the Statistics Department, International Monetary Fund (IMF). Ms. Loretta Hiebert Girardet, Chief of the Risk Knowledge, Monitoring and Capacity-Development Branch, UNDRR moderated the session.

All documents related to the event are available in the official side event directory and on the UNECE event page, including a snapshot of the draft Guidance on the role of NSOs in achieving national climate objectives and a list of resources and tools on statistics for climate action from UNECE, ECLAC, ESCAP, UNESCWA and UNSD. The UNECE press release is available here.

Task Force on the Role of NSOs in Achieving National Climate Objectives

Since February 2022, a UNECE Task Force has been working on a Guidance on the Role of NSOs in Achieving National Climate Objectives, under the framework of the Conference of European Statisticians. The Task Force is analysing concrete ways in which NSOs can contribute and showcase what the statistical system already offers to support climate action, focusing in particular on the role of NSOs in:

- Reporting under the Paris Agreement
- Meeting information needs of national policymaking in terms of climate mitigation, adaptation and just transition
- Informing the public about climate-related issues

The guidance document aims to be practical, including explanations and recommendations and a portfolio of examples of statistical products, collaboration and coordination experiences, case studies, and descriptions of institutional arrangements. The current draft (a snapshot and a full draft) is available on the UNECE website. Any country or organization interested in the work of the Task Force can contact the UNECE secretariat (cwiek@un.org).

Steering Group on Climate Change-Related Statistics

On 10 October 2023, the UNECE Steering Group on Climate Change-Related Statistics presented a report on its work from 2018 to 2023 to the Bureau of the Conference of European Statisticians (CES). In that period, the Steering Group was chaired by Luxembourg (2018-2020) and the Netherlands (2021-2023). The Steering Group will continue its work based on the new terms of reference approved by the CES Bureau and, from November 2023, will be chaired by Canada.

The objective of the Steering Group is to provide direction to the CES work on climate change-related statistics, identify and address emerging issues and facilitate the implementation of CES guidelines in this area. As of September 2023, the representatives of the following countries and organizations participate in the Steering Group: Canada, Ireland, Italy, Luxembourg, Mexico, the Netherlands, Sweden, Switzerland, the United Kingdom, the European Environment Agency, Eurostat, the Food and Agriculture Organization of the United Nations (FAO), the International Energy Agency (IEA), the Organisation for Economic Co-Operation and Development (OECD), the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) and Midsummer Analytics. More information about the work is available on the UNECE web page. Any country or organization interested in the work of the Steering Group can contact the UNECE secretariat (cwiek@un.org).

20th Session of the Joint Task Force on Environmental Statistics and Indicators (16-17 October 2023 in Geneva)

The UNECE Joint Task Force on Environmental Statistics and Indicators assists the countries of Eastern and South-Eastern Europe, the Caucasus and Central Asia in their efforts to produce and share environmental

statistics and indicators. It is a unique body that regularly brings together experts from National Statistical Offices with Ministries of Environment (or Environment Agencies) to exchange knowledge and experience on the above issues.
Since the Joint Task Force is gradually addressing more emerging policy areas, the attendance of experts from countries with well developed National Statistical Systems is increasing, which is beneficial for all participants. For example, at the 20th session experts from Austria, France, Ireland, Spain, Türkiye and the United Kingdom also participated.

One important outcome of the meeting was the finalisation of the review of the UNECE Guidelines for the Application of Environmental Indicators. These Guidelines are structured according to the United Nations Framework for the Development of Environment Statistics (FDES) and provide a list of indicators for regular production in the entire ECE region.

The meeting also discussed measurement issues related to the following emerging policy areas: circular economy, sustainable infrastructure, green economy and the information demand for managing the relationship between environment and health.

All meeting documents are available at https://unece.org/statistics/events/twentieth-session-joint-task-force-environmental-statistics-and-indicators

"Joint UNECE/OECD Guidelines for measuring of Circular Economy, Part A: Conceptual Framework, Indicators and Measurement Framework" endorsed by the Conference of European Statisticians

The Conference of European Statisticians (CES), the highest statistical body in the ECE region, endorsed the "*CES Guidelines for Measuring Circular Economy, Part A: Conceptual Framework, Indicators and Measurement Framework*" at its seventy-first plenary session which was held from 22–23 June 2023 in Geneva, Switzerland.

This publication clarifies the conceptual understanding of a circular economy from both the policy and the monitoring perspectives. The starting point is a short "headline definition" which highlights the interrelated features of all circular economy definitions: maintaining the value of materials in the economy for as long as possible whilst ensuring a positive outcome to society, and preserving natural capital (natural resources, environmental quality) and human health. The conceptual framework has four main components (material life cycle and value chain, interactions with the environment, socio-economic opportunities, and responses and actions). It is complemented with an initial set of indicators for monitoring progress towards a circular economy and a monitoring framework which discusses important measurement considerations, in particular the use of the System of Environmental-Economic Accounting (SEEA) for measuring circular economy. The document also includes examples of measurement frameworks used by countries and other regional and national case examples on measuring the circular economy.
The main audience of the Guidelines are experts from National Statistical Offices and other government agencies being tasked with the measurement of circular economy. These are usually experts working in the areas of measuring sustainable use of natural resources, the implementation of the System of Environmental-Economic Accounting (SEEA) or environment statistics.

The Guidelines were developed in close cooperation between the informal OECD Expert Group on a new generation of information for a resource efficient and circular economy (RECE-XG) and the UNECE Task Force on measuring circular economy (UNECE-TF).

The document will be available as printed and electronic publication early 2024.

It will be complemented with Part B which will provide practical guidance for producing and using statistics

to produce the core indicators, the required institutional collaboration and national case examples. Part B is planned to help National Statistical Offices to better understand which elements of the conceptual framework and which of the proposed indicators fall in their responsibility.

Upcoming Events

2024 Expert Forum for Producers and Users of Climate Change-Related Statistics (29-30 August 2024 (TBC), Geneva)
The 12th UNECE Expert Forum for Producers and Users of Climate Change-Related Statistics is planned to be held on 29-30 August 2024 in Geneva, Switzerland. The main objective of the annual Expert Fora is to provide a platform for sharing experiences, discussing concepts and measurement issues, and identifying areas for practical guidance. More information and a call for contributions will be circulated in the first quarter of 2024 and posted on the event web page.

Ninth Joint OECD/UNECE Seminar on the Implementation of the System of Environmental-Economic Accounting (18-20 March 2024, Geneva, Switzerland)
The aim of the seminar is to provide a platform for exchange of knowledge and experience on SEEA implementation and to facilitate coordination between all relevant partners in the OECD and UNECE regions. The seminar is organised regularly with a long-term view to support the implementation of SEEA.

The ninth Seminar will have a focus on **producing and using SEEA Accounts for informing circular economy and climate-change-related risk reduction policies**.

The detailed concept note and the registration link are available at https://unece.org/info/events/event/383686

Recent Eurostat activities

(Contributed by Arturo de la Fuente, Eurostat)

An overview of Eurostat activities on environmental statistics, environmental accounts and sustainable development indicators can be found at: http://ec.europa.eu/eurostat/web/environment/overview.

Sustainable Development Goals (SDGs) and other policy monitoring frameworks
Eurostat has a dedicated website for SDG indicators. The latest Eurostat SDG communication package was published on 24 May 2023. There is also a brochure with key findings as well as the digital publication 'SDGs & me'. The 2023 report includes a special chapter about Covid and another one about spillovers and footprints.

Eurostat supports the methodological development of several tier III indicators in the UN list of SDG indicators for global monitoring, closely cooperating with the relevant custodian agencies. Eurostat participates in the working groups of the Inter-agency and Expert Group on SDG indicators (IAEG-SDGs) on "Geo-spatial Information" and on "SDMX", and follows the work of the IAEG-SDGs as an observer.

Environmental statistics
The main entry points for Eurostat environmental statistics are the dedicated sections in its website for environment, waste statistics and climate change-related statistics. Eurostat also maintains the European Commission monitoring framework for the circular economy in this dedicated website.

The Eurostat waste statistics data are available here. The results of the 2022 data collection on waste statistics according to Regulation (EC) 2150/2002 are published (new data for 2020) and there are online articles here and here. The results of the OECD/Eurostat Joint Questionnaire on municipal waste are published in this online article. The data collections on waste streams (packaging waste, waste electric and electronic equipment, end of life vehicles and batteries) were completed in September-October 2022. The online articles on waste packaging, electrical and electronic equipment and batteries have been recently updated.

On inland waters, there is enhanced methodological coordination with OECD, FAO and UNSD to better serve the information needs of SDG 6 – Ensure availability and sustainable management of water and sanitation for all. The results of forestry statistics are available in this article.

SEEA environmental accounts

An overview of SEEA environmental accounts is available here. Eurostat runs several data collections on air emissions, including greenhouse gases and pollutants, material flow accounts, environmental taxes, environmental sector, expenditure on environmental protection and energy flows. All these data collections are annual and mandatory for EU Member States. Eurostat also publishes quarterly estimates of greenhouse gases 4½ months after the reference quarter. Eurostat publishes all those data results in the Eurostat online database, as well as articles (see Statistics Explained pages) and other material. Eurostat also publishes air emission footprints and two datasets with material footprints (aggregate and detailed). Eurostat proposes three more European environmental accounts on forests, ecosystems and environmental subsidies. This proposal is being discussed in the European Parliament and the Council.

Eurostat co-ordinates an experimental project on an integrated system of national capital and ecosystem series accounting (INCA) in collaboration with other EU partners. The final report of the project is available here and data results are available here. Several other methodological reports are available in the methodology section under 'Ecosystem accounts'.

Eurostat facilitated training courses on environmental statistics and SEEA for European compilers on the following subjects: physical environmental accounts, water statistics and accounts, monetary environmental accounts, indicator systems (SDGs etc.), and ecosystem accounting. Material from past courses is available here. A full catalogue of courses is available here.

Climate Change Statistics in the Pacific

(Contributed by Alison Culpin, Pacific Community SPC)

The Pacific Community (SPC) designed a Survey Module comprising 30 questions for its Member States to collect data to address natural disasters and climate change. The Sourcebook design was founded on the reporting modalities established and agreed upon under the Paris Agreement Work Programme. In addition, the 2030 Agenda, the Global Set of Climate Change Statistics and Indicators, the Framework for the Development of Environment Statistics, the Sendai Framework, and the Disaster-related Statistics Framework shaped the Survey Module design. The survey aims to provide data at a disaggregated level, and can be applied to other Member States with similar characteristics (often small island states).

The SPC Climate Change Sourcebook was endorsed for publication by the Pacific Statistics Methods Board at their October meeting. The Sourcebook can be accessed here https://purl.org/spc/digilib/doc/ydmzw

The Cook Islands Statistics Office (CISO) is currently in the field with a combined Climate Change and Labour Force Survey 2023. https://stats.gov.ck/climate-change-and-labour-force-survey-begins/. This will be the first implementation of the full SPC Climate Change Sourcebook questionnaire, with data expected to be

available for analysis in Quarter 2, 2024. The Cook Islands decided to use a five-year recall period for 'events' rather than the 12 month recall period, based on discussions with other ministries in the country.

The Pacific Community, in collaboration with UNSIAP (Statistical Institute for Asia and Pacific), is planning two training workshops on Environmental Statistics in March 2024, one for the Northern Pacific Island countries and territories, and one for Southern Pacific. More details, including the course content, will be available early 2024.

ESCAP News

(Contributed by Statistics Division, ESCAP)

Disaster-related Statistics in Nepal

On 11-12 October 2023, ESCAP in collaboration with the National Statistical Office (NSO), the Government of Nepal organized a technical workshop on enhancing disaster-related statistics in Nepal, as a part of a project titled "Navigating policy in Asia-Pacific with data to leave no one behind". The workshop focused on making use of available disaster-related data from the NSO, the National Disaster Risk Reduction and Management Authority (NDRRMA) as well as relevant sector ministries to implement hazard exposure mapping and to review existing estimation of material impacts from disasters in monetary terms. Flood and landslide hazard exposure mapping and material impacts in housing (dwelling) and agricultural sectors were identified as priorities by national stakeholders.

Participated by the NSO, Ministry for Forest and Environment, Ministry of Urban Development, NDRRMA, Ministry of Home Affairs, Department of Hydrology and Meteorology, the workshop provided opportunities for participants to discuss existing data sources, disaster type, data disaggregation, and to increase the understanding of methodologies as guided by the Sendai Framework Monitoring Guidance and the Disaster-related Statistics Framework (DRSF). Work on hazard exposure mapping and the monetary estimation of material impacts is led by an inter-agency task force chaired by the NSO. It is expected that the technical report on disaster-related statistics of Nepal will be finalized in 2024Q1.

Implementation of ocean accounts for sustainable development in Asia and the Pacific

ESCAP in collaboration with the Global Ocean Accounts Partnership (GOAP) has continued to assist Asia-Pacific countries in the production and use of ocean statistics and accounts to inform integrated policy decisions. The priority support was extended to Small Island Developing States (SIDs) including the Maldives, Palau, Samoa.

In *the Maldives*, work was initiated to strengthen the understanding of the integrated role of nature-based solutions (NBS) in addressing climate change through the assessment of coastal and marine ecosystem services. This NBS work is an integrated aspect of the GEF-funded project on "Enhancing National Development through Environmentally Resilient Islands" (ENDhERI) led by the Ministry of Environment, Climate Change and Technology (MECCT) to ensure coherent and coordinated international support to the country. A scoping mission was conducted in October 2023 resulted in the priority focus of carbon, fisheries, and tourism in Laamu Atoll, the project's pilot site. The initial assessment of ecosystem services is expected to be completed in 2024Q1.

Sustainable ocean management is at the centre of *Palau*'s national policies. In July 2023, ocean accounts were implemented to provide integrated evidence in support of ocean management and spatial planning in connection to food security, sustainable tourism and climate change action. This included the monitoring of seagrass beds in Airai state as an important fish habitat, the establishment of key condition measures for coral ecosystems in Koror state for sustainable tourism income, as well as the first national pilot on mangrove accounts to support the country's conservation effort to improve carbon sequestration capability.

Key national stakeholders including the Office of Planning and Statistics (OPS), Palau Automated Land and Resources Information System (PALARIS), and Palau International Coral Reef Center (PICRC) were engaged. A work plan for the continued improvement of ocean accounts was also produced.

Support to *Samoa* was in the context of the United Nations joint programme for ecosystem services with the Ministry of Natural Resources and Environment (MNRE) to demonstrate and lay the statistical foundation for the regular and cost-effective monitoring of ecosystem assets, using mangroves as an example, through the utilization of remote sensing technologies. Provisional asset accounts for mangroves both at the national level and in a smaller geographical area of Vaiusu bay were produced. The accounts were accompanied by a technical GIS report and a step-by-step guide to support future updating and replication of the work. The joint programme was concluded in December 2023.

Forest accounting in Fiji

In response to policy demand to improve the understanding the full benefits of country's forests and support sustainable harvesting practices, ESCAP in September 2023 supported Fiji Bureau of Statistics (FBoS) and the Ministry of Forestry (MoF) to initiate the implementation of forest accounts. Through training and work planning discussions, the priority set of accounts included:

I. Forest satellite accounts to understand the contribution of forests – both timber and non-timber forest products – to the country's Gross Domestic Product (GDP),
II. Forest asset accounts and land cover accounts to monitor changes in forest cover and species overtime; and,
III. Forest ecosystem service accounts to capture the broader benefits of forests.

Technical work to advance the three workstreams is underway. FBoS and MoF also developed a joint work plan and timeline towards the production of forest accounts of the country.

COUNTRY NEWS

Environment and Climate Change Statistics in Belize

(Contributed by Lesley Cruz, Statistical Institute of Belize)

Over the past several years, environment statistics have been one of the key areas of interest and development within Belize's national data ecosystem. The Statistical Institute of Belize (SIB) is the only national agency legally authorized to designate statistics as official national statistics, with its mandate to collect, compile, extract, analyze and publish official statistics pertaining to the demographic, social, ***environmental***, economic and general conditions of Belize. The SIB has played a critical role in the production of environment statistics through its role as coordinator of the country's National Statistical System. The Institute has worked in close collaboration with the Department of the Environment, which is currently tasked with collecting, compiling and reporting on these types of statistics.

In 2018, following several years of gradual progress within this sector, the SIB was approached by the Department of Environment to conduct the country's very first Environmental Statistics Self-Assessment Tool (ESSAT). This was the steppingstone to reviving the development of environmental statistics in Belize. Since the SIB had also been actively working on strengthening the National Statistical System, the conduct of the ESSAT aligned naturally with its efforts in this regard. The implementation of the ESSAT, supported by consultation with nineteen environment statistics data producers, was an important milestone in assessing

the current state of environment statistics in Belize. The resulting report provided valuable insights, allowing for a better understanding of the sector's strengths as well as areas that require further improvement and has served as a catalyst for the continued development of environmental statistics in Belize. The country is now able to benefit from various national, regional, and international initiatives, which can support the advancement of data collection and analysis for informed decision-making in environmental management.

Nationally, there has been increased collaboration and data sharing among producers of environment statistics. In recent years, the sector has seen the implementation of data sharing agreements and Memorandums of Understanding (MOUs) to increase the effectiveness and efficiency with which environment data is produced and shared within the country. The reactivation of the Environmental Statistics Advisory Committee (ESAC) by the Department of Environment is another recent positive step, enhancing coordination and consultation in the development and dissemination of environmental statistics. The ESAC can also play a crucial role in providing guidance and expertise to data producers, to ensure high-quality and relevant environmental statistics. Additionally, the completion of the Geo-Belize Report by the Department of Environment, made possible as a result of this improved coordination within the sector, is another significant milestone.

Regionally, Belize's participation in the DA12 Project titled "Caribbean SIDS relevant climate change and disaster indicators for evidence-based Policies" couldn't have come at a better time, with the country benefiting considerably from the sharing of experiences by its regional counterparts. One component of this Project was an in-country workshop on a key area of interest. Belize's national workshop, held in late 2022, was titled "Generating climate change and disaster indicators for policy decision-making in Belize".[1] Participants in this workshop were trained in the calculation of specific indicators along with the relevant metadata sheets and identified fifteen priority indicators which the Department of Environment intends to report on in the near future.

Environment statistics in Belize have grown exponentially in recent years. However, there is yet much to do within the field. There is a considerable disjoint between Environment and Climate Change statistics, for example, and efforts have begun to close this gap. There have been expressions of interest in the conduct of the Climate Change Statistics and Indicators Self-Assessment Tool (CISAT) to assess the current situation of climate change statistics within the country. There is also interest in updating the ESSAT, as the base findings are from five years ago, and much progress has been made since. Finally, the inclusion of Environment and Climate Change sector action plans in the country's new National Strategy for the Development of Statistics reflects a growing recognition of the critical importance of this sector. Having up-to-date and accurate environmental information is crucial for effective planning and policy formulation in areas such as climate change and disaster risk management. Belize's ongoing dedication to its environment statistics program is a significant step towards sustainability and informed decision-making in the country.

Benin's activities with UNEP in environment and climate change statistics

(Contributed by Mr. Ibila Djibril, Benin CCCD Project Coordinator)

Introduction

Benin has benefited, for three years from the GEF with the technical support of UNEP, of the project entitled, "Building Core Capacity for Implementation, Monitoring and Reporting of Multilateral Environment Agreements (MEAs) and relevant Sustainable Development Goals (SDGs)".

The general objective of this project is to strengthen national capacity for environmental information and knowledge management for the implementation, monitoring and reporting of multilateral environmental agreements and relevant sustainable development goals. Through this objective two concrete results are expected:

1. A system for the management of environmental information and knowledge is operational for use in decision-making, planning and reporting.
2. Enhanced capacities to develop and implement policies, plans and programmes integrating MEAS and related SDGs.

The first result will constitute the substance of this article.

Background

The setting up of the statistical information system goes back to the initiative of the Minister of Environment and Sustainable Development, Mr. José TONATO, to reform the implementation framework of the MEAs to which Benin is a party.

The Minister's initiative stems from his desire to overcome the difficulties of obtaining factual environmental data to:

1. Have a factual state-of-the-environment report,
2. Facilitate decision-making based on reliable, documented information.

In fact, it has been noticed that in the management of MEAs and the implementation of SDG, the following:

- Isolated management of environmental conventions.
- Lack of synergy between environmental conventions in their implementation.
- Non-capitalization of achievements of actions contributing to convention implementation.
- No information-sharing mechanism.
- Dispersion of means of implementation of environmental conventions.
- Little benefit from the opportunities offered by the environment agreements.
- Low stakeholder involvement.
- More than two-thirds of the 17 SDGs concern the MCVDD[1]'s areas of intervention.
- No information/data available for environmental SDG indicators.
- No operational environmental information system.

It is therefore important to find practical solution to these challenges. Benin CCCD project is in line with this ambition. In this regard, data collection is of the utmost importance, and requires a well-designed and well-executed team effort. Well-prepared data collection guarantees more reliable data, an essential quality for sound decision-making and consequent planning. In a sector as cross-functional as the environment, data collection is an imperative requirement not only for the Ministry in charge of the environment, but also for all sectoral ministries, NGOs, laboratories, research institutes and centres. Once data is collected, it must be processed, disseminated, and stored in accordance with current standards.

Benin approach and activities to overcome environmental data.

1. **Approach**

For the implementation of project work plan, the Ministry in charge of environment, through the Directory of Environment and Climate (DGEC) and the Directory of planning and Prospective (DPP) have undertaken many consultations with the line ministries and environmental NGO to set up an action framework which will allow to have a full picture of environmental data gaps and how to address them. This shall have these main bodies:

1. The Steering Committee of the Project that comprises the policymakers.
2. The consultative platform which comprises the technical officers of various key sectorial ministries whose main mandate is to collect data of their respective sectors and to put them together and analyse them.

To make effective this institutional arrangement an Agreement Protocol is signed on, 16 February 2021, by the permanent Secretary of each sectoral ministry and the national coordinator of the umbrella environmental NGO. This decision to let the permanent secretaries to sign the Agreement Protocol results of the fact that they have permanent position for at least five years even if the ministerial reshuffles and their hierarchic

authorities of the general directors of ministries. Therefore, their instructions have to be respected and implemented. This constitutes the strength of Benin institutional arrangement to collect environmental data.

2. **Activities and results**

In chronological order, the operational activities conducted are following:

- The organization of the stakeholders training workshop on data collection and management methodologies, including the UNEP LIVE platform, from August 19 to 22, 2019 in Cotonou, which has been animated by UNEP.

This workshop aimed to introduce to strengthen Benin's individual and institutional technical capacities for the effective collection and management of environmental data and information for sustainable development so that the participants will be able to acquire critical skills in environmental data management and skills sharing in this field.

- Development and adoption of the strategy for the development of statistics in the environment sector, 2021-2025, in February 2021.
- Development and adoption of the Strategic Plan for the development of environmental statistics in Benin, 2021-2025, in November 2021, which derives from the strategy above.
- The training workshop of the stakeholders on data collection and management methodologies, including the UNEP LIVE platform in August 2029 which allowed Benin to start the work of the consultative platform on a good and perfect way in 2020. This first session is focused on the Benin's Environmental Statistics Self-Evaluation Tool. Through this self-evaluation these aspects are studied: identification of institutions, existence of national environmental policies, mandate and organization of national statistics, mandate and organization of environmental statistics, production of environmental statistics.
- In 2021, sectorial ministries' officers have started by filling in the Framework for the Development of Environment Statistics (FDES 2013) with the assistance of Dany Ghafari of UNEP.
- In 2022, the consolidated this work by completing some missed data.

Based on this work, the process to establish this platform has been undertaken by recruiting a national firm of consultants to design and develop Benin's Environmental Statistical Information System. The work done by this national firm benefits from the expertise of UNEP during the three-day technical workshop on data collection and coding as part of the implementation of the information system on environmental statistics in conjunction with the United Nations Environment Programme's statistical platform, from October 25 to 27, 2022. This workshop conducted by Dany Ghafari of UNEP is based on SDMX (Statistical Data and Metadata eXchange) and had an important add-value in the development of this national system. The IT experts and Statistical experts have been put together to harmonize their understanding and respective works in order to establish an effective operational system. Even remotely, UNEP continues to work with the national consultants with the view to perfect this system.

On 13 and 14 December 2022, the technical validation workshop has been organized to adopt Benin's environmental statistics management platform. It aims, among other things, to:

- provide statistical information to enable knowledge and regular monitoring of the state of Benin's environment.
- create, collect, store, process and modify environmental information in various formats.
- share environmental information to those who need it at the right time, in appropriate formats.
- ensure the visibility of Benin's environmental actions.
- report on progress made in implementing environmental policies, programs, and projects.

The https://siseb.cadredevie.gouv.bj/ platform is hosted on the Beninese government website and authorized by it.

It includes information on the Framework for the Development of Environment Statistics (FDES 2013), the Multilateral Environmental Agreements, and the SDGs.

For its functioning, each sectoral ministry has appointed a focal point and deputy focal point mandated to type environmental data of his ministry, and a validator who is the Director of Planning, Administration and Finance or his deputy. The national validator of data is the Director of Planning, Administration and Finance of Ministry of Environment and Transports, in charge of Sustainable Development or his deputy.

The platform has been presented during the UNEP GEF Cross- Cutting Capacity Development (CCCD) Knowledge Exchange Session, held in Naivasha, Kenya, from 17 to 19 January 2023. This session brought together the participants of Benin, Botswana, Iraq, Mauritania and South Sudan. It received positive comments and appreciation.

Environment and Climate Change Statistics in the Cabo Verde NSDS to 2022-2026

(Contributed by Ulisses da Cruz, National Institute of Statistics - Cabo Verde)

A National Statistics Development Strategy (NSDS) provides a solid framework and action plan to strengthen statistical capabilities to meet current and future data needs. Statistics can be improved thanks to an NSDS integrated into the national political process. Such a strategic approach can help provide statistics that support the formulation of national development policies and contribute to harmonizing the resources necessary to improve statistical capacity with priority needs. The NSDS builds on the work already done and provides a coherent framework for government decision-making on financing, as well as for coordinating contributions from external donors.

In 2021, Cabo Verde began preparing its fourth NSDS for the 2022 to 2026 horizon. To this end, a Technical Committee was created, coordinated by the Cabo Verde's National Institute of Statistics (NIS), comprising representatives from all National Statistical System (NSS) bodies.

As part of preparing the Action Plan that is part of the NSDS, the Technical Committee sent each NSS body a form to fill in with the statistical activities planned by them for 2022 to 2026. At the NIS, this form was shared with each Directorate. The Directorate of Demographic and Social Statistics, which encompasses the Division of Demographic, Social and Environmental Statistics, filled out the form with its planned activities.

Activities directly related to environmental and climate change statistics were included taking into account the National Strategic Plan for Sustainable Development 2022-2026, the SDG indicators, the FDES 2013, the Global Set of Climate Change Statistics and Indicators, the System of Environmental-Economic Accounting (SEEA) and the recommendations made by the UNSD and the Organization for Economic Co-operation and Development (OECD).

The activities included are: implement an integrated system of environmental and climate change statistics; carry out a survey on the environment and climate change among the population; carry out an environmental and climate change survey with municipal councils; prepare a new general publication of environmental statistics; produce a publication of environmental and climate change statistics with companies; and carry out a diagnosis for the preparation of an Environmental Satellite Account.

One of the most anticipated benefits of inclusion of those activities in the NSDS is the availability of more human, financial, and technical resources to carry out the planned activities. Greater commitment is also expected from political decision-makers and even better cooperation and collaboration between the NIS and

the main institutions that produce and use these types of statistics. So, those activities in the NSDS will make it possible to improve the coverage, quality, and frequency of the production of environmental and climate change statistics, to respond to national and international requests between 2022 to 2026.

Cabo Verde´s NSDS to 2022-2026 (Portuguese version only) can be consulted at: https://ine.cv/wp-content/uploads/2023/10/ende-2022-2026-corrigido.pdf

Environmental Statistics in Cameroon

(Contributed by Marie Antoinette Fomo, National Institute of Statistics)

Since 2009, the Government of Cameroon, through the National Institute of Statistics (NIS, https://ins-cameroun.cm/en/), has undertaken the production of environmental statistics by establishing a unit in charge of these statistics in its organizational chart. Among other actions, the NIS made an analysis of the situation of statistics in the country, addressing the challenges they face. In 2011, the NIS hosted the first sub-regional workshop on environment statistics organized by the United Nations Statistics Division (UNSD), in collaboration with the United Nations Economic Commission for Africa, and in 2014 produced the Atlas on Environmental Indicators in Cameroon. In 2017, the government took stock of these advances and established a separate unit entitled the Division of Cartography, Environment and Climate Change Statistics in the NIS. As a result, a number of other projects were carried out, as well as capacity-building workshops for the staff of the Division on the new Framework for the Development of Environment Statistics (FDES), the Global Set of Climate Change Statistics and Indicators and the Sendai Framework. In 2022, taking into account the financial means available, the reports on environmental indicators relating to components 2, 4, and 5 of the FDES were produced and can be found on the institute's website. Those for components 1, 2 and 3 are being developed during this year 2023.

Challenges remain despite the above advances, especially in the domains of climate change and disaster-related statistics. From 7 to 9 November 2023, the United Nations Environment Programme (UNEP), UNSD and the United Nations Office for Disaster Risk Reduction (UNDRR) provided technical support as part of the capacity building on United Nations frameworks to guide the development of statistics on environment, climate change and disaster risk management in Cameroon. This workshop was organized in response to an official request from the NIS for technical assistance to improve the national statistical system through the development of statistics on climate change and disasters. The workshop was co-organized by the Directorate of Civil Protection (DPC) at the Ministry of Territorial Administration (MINAT). The main objective was to increase the technical capacity of national experts of sectoral ministries in the production of climate change and disaster statistics which will lead to improved data collection processes and data quality, building on the experiences initiated by the Division of Cartography, Environment and Climate Change Statistics since 2009. It was attended by the focal points of the sectoral administrations involved in the process of producing statistical data at the national level.

Opening speeches by the representative of the Resident Coordinator of the United Nations System in Cameroon, the Director of Civil Protection and the Director General of the NIS acknowledged the initiative of the UNDRR, UNEP, UNSD and UNDP, as well as the European Union for its support in the organization of this workshop through the "Risk Governance and Recovery Capacity Building" programme jointly implemented by UNDRR and UNDP. They also stressed that this activity is aligned with the implementation of the National Development Strategy (SND30) and its statistical monitoring and evaluation system (SNDS30), other sectoral strategies on climate change as well as strategic priority number 4 of the Cooperation Framework 2022-2026 between the United Nations System and the Government of Cameroon on "environmental sustainability, climate risk management and natural disasters". Following sessions focused on frameworks related to environment, climate change and disaster statistics and policies, with a focus on the United Nations Framework Convention on Climate Change as well as the Sendai Framework.

The Global Set of Climate Change Statistics and Indicators and its self-assessment tool, CISAT, were applied and the workshop participants requested to set up a mechanism for collaboration and data sharing since the completion of the CISAT requires a thorough collaboration between the different sectoral administrations. The session on disaster-related statistics provided an opportunity to familiarize the participants with the Sendai Framework and links to the SDGs. In addition, Cameroon's experience in setting up institutional arrangements was reviewed as well as the use of national platforms for monitoring and reporting. The workshop participants requested to strengthen the coordination of the Disaster Risk Reduction Platform and to publish internal reports on disaster-related economic losses.

To conclude the workshop, the Director General of the NIS reassured that Cameroon would ensure that the implementation of the workshop recommendations is carried to the highest level. With that, he invited the representatives of the sectoral administrations to carry the advocacy within their respective administrations.

As a perspective, the implementation of the above-mentioned recommendations could be done within the framework of the project for the harmonization and improvement of statistics in West and Central Africa (HISWACA-SOP 2), which is supported by the World Bank and will commence in the beginning of 2024. The project implementation in Cameroon will be managed by the NIS, in addition to the environmental aspect, the main focus will be on climate change statistics applying the CISAT.

Use of Water Administrative Microdata in Ireland

(Contributed by Gerry Brady, Central Statistics Office Ireland)

The CSO uses a broad range of administrative microdata to compile environment and climate statistics. The data sources used include:

- Metered electricity and gas consumption
- Metered electricity generation
- Building energy ratings audits
- Metered water consumption

The CSO obtains the data under the Statistics Act, 1993. The CSO agrees a memorandum of understanding with each data holder. The MoU sets out the legal basis on which the CSO is entitled to obtain access to the microdata. Annexes to the MoU specify exactly which data items are being requested, why, and the purpose. An Information for Data Providers note is available here - this is an important part of the MoU:
https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/informationfordataproviders/

Having microdata at meter level has many advantages. It allows calculation of consumption per household and per capita if the data file can be linked with the Census of Population or household register microdata. Time series analyses can be examined and seasonal trends can show how consumption varies with temperature or by geographical area e.g. leafy suburbs! The domestic metered public water consumption statistical release is available here:
https://www.cso.ie/en/statistics/waterandwastewater/domesticmeteredpublicwaterconsumption/

The CSO is working towards NACE coding the non-domestic customers with the highest levels of metered water consumption. Unfortunately, the water microdata file does not contain a unique business identifier that could be matched with the CSO business register.

The CSO also obtains microdata on the number of domestic wastewater treatment systems. Septic tanks are inspected as a precaution against pollution.

The five-yearly Census of Population collects data from each household on their type of water supply and sewerage system. The water authority receives data from the CSO on the population in each water catchment area so that they can match future supply with future demand.
The Environmental Protection Agency maintains a register of all abstraction greater than 25,000 litres per day: The register includes abstraction by public authorities.
https://www.epa.ie/our-services/licensing/freshwater--marine/water-abstraction/

The administrative microdata received by the CSO are used to reduce the statistical reporting bulletin and are consistent with the CSO *administrative data first* policy.

Environmental Statistics in Lesotho

(Contributed by Tsepiso Thabane, Lesotho Bureau of Statistics)

Lesotho Bureau of Statistics (LBOS) established Environment and Energy Statistics Division in 2009 after realization of the high demand of environment statistics from different users. The first publication on Environment Statistics was in 2013. It was after contributing to the revision of the Framework for the Development of Environment Statistics (FDES 2013) that the next issue of the report had some improvements. The report is published annually and is available at www.bos.gov.ls.

As a response to the problems relating to data management (storage, exchange, standards etc), the Committee on Environmental Data Management (CEDAMA) was established in February, 1999. The main objective of this committee is to coordinate environmental data management activities in the country. LBOS has greatly benefited in this committee in matters relating to data collection and other data related issues.

Partnering with CEDAMA members, LBOS conducted both the Household and Sector Energy Consumption Surveys in 2017 and 2019 respectively. The objective of carrying out the two surveys was to obtain the energy consumption patterns of the households and sectors. The Lesotho Electrification Master plan (2017-2038) was developed using data from Household Energy Consumption. Through both technical and financial support from the International Renewable Energy Agency (IRENA), LBOS undertook a pilot exercise on the collection of Bio energy data and the report is available on the website.

Recently, a concept titled **Integration of Natural Capital Accounting into Lesotho's Policy and Decision Making for Sustainable Development** was developed by LBOS and Department of Environment, working closely with other relevant stakeholders and it has been approved by Global Environment Facility (GEF). Lesotho, also known as the Mountain Kingdom, is identified as one of the Southern African countries with an abundance of water. It is in this view, and also taking into account Outcome 2.1 of the project, which suggests 'Natural capital mainstreamed into integrated watershed management through application of NCA', that the Water and Land accounts will be piloted.

The mountain Kingdom of Lesotho like many countries is no stranger to disasters. The landlocked country continually experiences multiple shocks, primarily drought but also flooding, frost, hail and storms. It is against this background that LBOS requested technical assistance in developing Climate Change and Disaster-related statistics from the United Nations Environment Programme (UNEP). A National Workshop on Climate Change and Disaster-related Statistics was held in Maseru, Lesotho in October/November 2023. This workshop was organized by UNEP, the UNDRR Regional Office for Africa and the United Nations Statistics Division (UNSD) in collaboration with the Bureau of Statistics and Disaster Management Authority of Lesotho. The main aim of the workshop was to capacitate LBOS on climate change and disaster-related statistics and also to increase technical capacity for stakeholders already collecting such information through hands-on training on priority topics.

The workshop recommendations included establishment of collaboration structures and pursuing of high-level buy-in from Ministers, Principal Secretaries and Directors. It was also highlighted that a list of climate change and disaster-related indicators can be identified using the Climate Change Statistics and Indicators Self-Assessment Tool (CISAT), and also identifying data providers at the national level during the process, while also considering national needs and international reporting obligations (Sendai Framework, Paris Agreement, and others). All the above could be achieved if data is shared between the Bureau of Statistics and other relevant organizations. Resources permitting and collaborating with relevant stakeholders, LBOS is ready to collect indicators pertaining to disasters in the next financial year.

Environment and energy annual reports are available in LBOS website www.bos.gov.ls.

Biennial data collection for UNSD/UNEP Questionnaire on Environment Statistics by Statistics Mauritius

(Contributed by Ms D. Mewa Hurdowar, Statistics Mauritius)

Since its establishment in 1999, the Environment Statistics and Climate Change unit of Statistics Mauritius has been compiling and disseminating environment statistics according to the Framework for the Development of Environment Statistics (FDES) 1984. In 2015, following a regional workshop organised jointly by the United Nations Statistics Division (UNSD) and the Common Market for Eastern and Southern Africa (COMESA), environmental statistics and indicators to monitor trends and impacts were computed on a regular basis based on FDES 2013.

Each year, Statistics Mauritius releases the Economic and Social Indicator on Environment Statistics and the Digest of Environment Statistics in the months of July and November respectively. Moreover, data related to greenhouse gas (GHG) emissions is compiled annually to generate the national GHG inventory using the methodology, guidelines and software recommended by the Intergovernmental Panel on Climate Change (IPCC).

In addition to assisting the Ministry of Environment, Solid Waste Management and Climate Change in multiple projects and evidence-base policymaking, Statistics Mauritius also engages in the ongoing endeavours of international communities such as the United Nations Environment Programme (UNEP) and the UNSD. For instance, the Environment Statistics and Climate Change unit of Statistics Mauritius participates actively in technical meetings such as the Expert Group on Environment Statistics and is also the designated focal point for the biennial data collection of the UNSD/UNEP Questionnaire which contributes to the development of the UNSD International Environment Statistics Database.

For the conduct of this exercise, an initial stakeholder's mapping is carried out whereby local organisations are identified with respect to the components of the questionnaire, namely, Water and Waste. Worksheets of the questionnaire are separated into batches according to the mentioned topics and transferred to corresponding stakeholders through mail. An effective institutional network mechanism has been set up to coordinate the data collection process which undergoes several steps of verification before the data is finally validated by UNSD. During past recent years, Statistics Mauritius has collaborated successfully with UNSD and UNEP and the Questionnaires on Water and Waste statistics for the Republic of Mauritius have been duly submitted.

Further information on Environment Statistics for the Republic of Mauritius is available on the link below:
statsmauritius.govmu.org/Pages/Statistics/By_Subject/Environment/SB_Environment.aspx

The primary users of the Economic and Social Indicator on Environment Statistics and the Digest of Environment Statistics are policy makers from the Ministry of Environment, Solid Waste Management and

Climate Change who need to develop mitigation and adaptation strategies for the implementation of National Determined Contributions for the Republic of Mauritius. Furthermore, these environment statistics are also used internally by the Sustainable Development Goals unit of Statistics Mauritius for its annual reporting. Other users include academics, researchers and the general public at large.

Towards the development of the National Set of Indicators on Climate Change in Mexico

(Jesarela López, National Institute of Statistics and Geography)[12]

In Mexico, within the framework of the National System of Statistical and Geographic Information (SNIEG)[13], the Specialized Technical Committee on Climate Change Information was created in 2009 (updated in 2021), which consists of the main government institutions representing the various sectors, is permanent and meets periodically. In 2023, as part of this Technical Committee, a Working Group on Climate Change Indicators was formed, with experts from the Ministry of the Environment and Natural Resources, the National Institute of Ecology and Climate Change and the National Institute of Statistics and Geography.

The development of statistical and geographic information on climate change has undergone significant progress. To mention just a few key points, the General Law on Climate Change (LGCC-2012)[14], establishes the creation of the Inter-Ministerial Commission on Climate Change, a National Information System on Climate Change (SICC)[15], as well as thematic axes for the design of indicators. Likewise, the foundations of the legal framework allowed the consolidation of the periodic production of some policy instruments, such as the National Inventory of Gas Emissions, following international standards that allow the documentation of a National Inventory of Greenhouse Gases and Compound Emissions (INEGYCEI), and there is a good approximation of the state of vulnerability of the national territory as part of the National Atlas of Vulnerability to Climate Change[16].

However, very few indicators have been published in Mexico to monitor and evaluate climate change policy. Some of the existing indicators are part of the follow-up of national policies on climate change established in the sectoral or special programs of the Federal Public Administration. The partial nature of the sets of indicators is a consequence of the problems that have arisen, not only in Mexico, but also in the world, regarding the methodological development for specific topics, as in the case of indicators of adaptation, vulnerability, or the social and economic impacts of the phenomenon.

INEGI's international participation in environment and climate change issues made it possible to identify and integrate a list of 223 indicators proposed by various global initiatives, mainly the Global Set of Climate Change Statistics and Indicators developed by UNSD in collaboration with the Expert Group on Environment Statistics (EGES), and the Conference of European Statisticians' Core Set of Climate Change-related Indicators developed by the UNECE Task Force on a set of key Climate Change-Related Statistics.

Therefore, the objective of the Working Group is to review and analyze each of the indicators in the aforementioned list, to identify those that are feasible to be developed or adopted, and to consolidate the Mexican National Set of Climate Change Indicators. These will be added to those already included in the National Catalog of Indicators (SNIEG), the SDG indicators, and those in the information systems of the

[12] Jesarela López – Director of Technical Coordination of INEGI
[13] https://www.snieg.mx/
[14] All acronyms are in Spanish.
[15] http://gaia.inegi.org.mx/sicc/ (in process of updating).
[16] https://atlasvulnerabilidad.inecc.gob.mx/

environmental and agricultural sectors. The first version is expected to be ready in the summer of 2024.

Environment Statistics at Statistics Sweden

(Contributed by Jonas Bergström, Statistics Sweden)

Sweden has a decentralised national statistical system in which official statistics are produced by 29 agencies. Regarding environment statistics, Statistics Sweden primarily produces statistics on environmental accounts, emissions to air and water, and waste statistics.

In the field of environmental accounts, Statistics Sweden produces and publishes official statistics in the areas of environmental goods and services, environmental protection expenditures, environmental taxes, environmental subsidies, air emissions and energy accounts, and economy-wide material flow accounts. These statistics are also reported to Eurostat following the European regulation on environmental accounts. In addition, Statistics Sweden is one of a few NSIs that publishes quarterly air emissions accounts for the Swedish economy and consumption-based air emissions statistics.

Concerning statistics on emissions to air and water, and waste, Sweden has a rather unique setup where four different agencies have formed a consortium with the long-term aim of improving environmental statistics in Sweden. The consortium, Swedish Environmental Emissions Data (SMED), was formed in 2001, and the current agreement lasts until 2030. SMED consists of Statistics Sweden, the Swedish Meteorological and Hydrological Institute, the Swedish University of Agricultural Sciences, and the Swedish Environmental Research Institute.

Within SMED, Statistics Sweden produces statistics for international reporting, such as emissions of greenhouse gases and air pollution, emissions of pollutants and nutrients to the Baltic Sea and the North Sea, emissions of hazardous substances for the Swedish pollutant release and transfer register, as well as statistics on generated and treated waste. Environmental statistics are also generated to follow up on the Swedish environmental objectives.

In addition to producing national statistics, Statistics Sweden has been engaged in international development cooperation for around 40 years and in around 40 countries. At present, Statistics Sweden has long-term advisors residing and working in eight different countries (Kenya, Kosovo, Mali, North Macedonia, Somalia, Tanzania, Tunisia, and Zambia). The projects cover a wide range of statistics, but regarding environment statistics, Statistics Sweden is supporting the Kenya National Bureau of Statistics to update the Compendium of Environment Statistics. In Zambia, support is given to the Zambia Statistics Agency to form a technical working group for Environmental Statistics. In Mali, support is given to the National Institute of Statistics to develop their environmental accounts and waste indicators. In collaboration with Paris21, Statistics Sweden has been involved in the development of the "Framework for Mobilising Climate Change Data Ecosystems". Lastly, Statistics Sweden is part of the Swedish SISC (Strengthened Institutions for a Sustainable Climate) programme. The programme addresses the challenge of climate change for both mitigation and adaptation and supports the development of robust transparency systems. The partner countries are Rwanda, Mozambique, Kenya, and Zimbabwe.

Environment and Climate Change Statistics in Uganda

(Contributed by Keith Ahumuza, Uganda Bureau of Statistics)

Uganda highly depends on the environment and natural resources for survival with 80% of the population engaged in agriculture making it the backbone of the economy and 94% of households using biomass (charcoal and firewood) for cooking. Tourism, dominated by the rich natural biodiversity, is among the top major foreign exchange earners for Uganda. However, several environmental issues like degradation, biodiversity loss and climate change continue to plague the economy. Uganda has among the highest annual

population growth rates (3%) in the world and this rapid population growth has increased pressure on the existing environment and natural resources. This has accelerated the high rates of deforestation, poor waste management, encroachment on fragile ecosystems like wetlands for agriculture, cultivation along steep hilly and mountainous slopes, cultivation along water bodies and acts of bush burning have been observed to have increased in current years than before. All these environmental issues have manifested through impacts such as increased occurrences of erratic rains, droughts, flooding, landslides, biodiversity loss, and silting of water bodies.

In addition, inadequate reliable data and statistics to support evidence-based policy formulation, decision making and monitoring the impacts of environmental policies and interventions from sub- national to national level, have further exacerbated the problem. This is attributed to a currently immature environment statistics system in the country. Environment statistics in Uganda is a new domain of statistics compared to the other domains of statistics namely social and economic statistics. However, their relevance is indispensable with the current environmental challenges the country is facing. Uganda has a Vision 2040 spread through six National Development Plans which has highlighted the relevance to attain sustainable development through a green growth path. It has developed a Uganda Green Growth Development Strategy (2017/18-2030/31) to ensure that development does not compromise the quality of the environment for present and future generations. The country is also a member of various regional and continental blocks, the East African Community, the Common Market for Eastern and Southern Africa (COMESA) and the African Union, with goals and commitments towards attaining sustainable development and is also a signatory to various global frameworks on environment and climate change such as UNFCCC, UNCBD, UNCCD, Rio-Conventions etc. All these agreements require the availability of reliable data and statistics for reporting, policy formulation and decision making.

The Uganda Bureau of Statistics (UBOS) is mandated to collect data, compile statistics and coordinate the National Statistics System to ensure production of high quality statistics. Considering the current high relevance of environment and climate change statistics at all levels, the UBOS is engaged in various initiatives intended to strengthen environment and climate change statistics in Uganda. The initiatives have been developed through desk review of various documents of environment and climate change (UN Framework for the Development of Environment Statistics (FDES) and the Global Set of Climate Change Statistics and Indicators), consultation and capacity building engagements provided by UNSD Environment Statistics Section, COMESA and UNEP among others. As a country, priority has been set on: the development of national frameworks for environment and climate change statistics as a foundation to establish the scope of the statistics and indicators relevant and necessary for production in Uganda, create awareness across stakeholders, enhance coordination and advocacy and support resource mobilization for data collection and statistics production; and administering the Environment Statistics Self-Assessment Tool (ESSAT) and the Climate Change Statistics and Indicators Self-Assessment Tool (CISAT). Currently, a concept note has been developed to enable commencement of the activities of the application of the frameworks in 2024. Also, a compressed Environment and Climate Change Statistics Assessment Tool was developed by UBOS in reference to the UN-FDES and administered electronically to all the Local Governments (Districts) in Uganda to establish the current availability of data and statistics as a baseline.

In order to enhance data collection and fill gaps, the Expert Group on Environment Statistics (EGES) meeting of 2023 where UBOS participated, recommended integration of environment and climate change questions in national censuses and surveys. The UBOS has an upcoming Population and Housing Census in 2024 and some questions on environment and climate change have been added to the questionnaire. A thematic report on environment and climate change shall be produced from the Census data. Also, the institution is generating a list of census and surveys questions on environment and climate change for integration in various household and non-household surveys. With enhanced data from the improvements made, the UBOS shall produce the first Compendium of Environment and Climate Change Statistics in 2025.

Standards for Official Statistics on Climate-Health Interactions

(Contributed by Rosie Maslin, UK Statistics Authority; Megan Green and Vijendra Ingole, UK Office for National Statistics)

Climate change impacts human health across global and local scales, and through often complicated pathways. Accurately measuring these impacts is critical for identifying populations most at risk from climate change. There remains, however, no globally-agreed upon statistical approach for tracking climate-related health indicators. This hinders our ability to identify and help vulnerable populations.

Our 4-year Wellcome Trust funded project aims to address this gap by developing unified standards for reporting official statistics on climate-health interactions across the globe[17]. These standards are developed in collaboration with the African Institute of Mathematical Science (AIMS, Rwanda), the Regional Institute for Population Studies (RIPS) at the University of Ghana, the UK Health Security Agency and the Cochrane Group. In addition to this, we are also developing an online platform to share climate-health indicators and methodologies in collaboration with the United Nations Global Platform.

The project has completed its first year and has hit several milestones. Firstly, our Rwandan and Ghanaian partners have been officially onboarded, with each partner assigned a climate-health topic to develop standards for. These topics are far-reaching, spanning topics such as extreme weather events, chemical contaminants, mental health, and infrastructure. We have also developed our first indicator, which provides a framework, methodology and open-source R package for measuring the impact of heat on health outcomes through time. This indicator has led by the ONS, and has been reviewed and validated by our Expert Advisory Group. A recent publication by the ONS applied this methodology to mortality data from England and Wales[18].

Our knowledge-sharing platform has also been prototyped with the heat indicator. This prototype is forming the basis of the final platform, which is currently being developed by the ONS and the United Nations Global Platform. We aim to begin user-testing in early 2024.

In addition to the core project deliverables, we have also collaborated with DataKind, a data science consultancy, to produce an additional open-source tool. The tool allows for the automated pairing of spatially-indexed health data with climatic variables, and will be integrated into our data platform. Adoption of this tool will increase the comparability and consistency of climate-health indicators by setting a standard for climatic exposures.

Over the next three years we aim to finalise our framework and fully launch our data platform. It is hoped that these unified standards will serve as the basis for future climate-health studies as the impacts of climate change become increasingly apparent and important through the 21st century.

Recent ONS publications:

- Jobs in high emissions industries
- Measuring UK greenhouse gas emissions
- Public opinions and social trends, Great Britain: climate change
- UK Natural Capital Accounts: 2023
- A million fewer people are gaining health benefits from nature since 2020
- Business Insights and Impact on the UK economy: Wave 95, including climate change concern and considerations, and actions and barriers to reducing carbon emissions

[17] https://wellcome.org/news/standardising-health-and-climate-metrics-drive-urgent-action

[18] https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/climaterelatedmortalityandhospitaladmissionsenglandandwales/1988to2022

- Experimental estimates of quarterly greenhouse gas emissions (residence basis), UK: Quarter 2 (Apr to June) 2023
- Greenhouse gas emissions, UK: provisional estimates, 2022
- Climate-related mortality, England and Wales - Office for National Statistics (ons.gov.uk)

FORTHCOMING EVENTS

- 55th session of the United Nations Statistical Commission
  (in person, New York from 27 February to 1 March 2024)
  https://unstats.un.org/UNSDWebsite/statcom/55

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