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GRENADA



CARICOM  
CARIBBEAN COMMUNITY

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# Workshop on Environment Statistics and Climate Change Statistics for the CARICOM Region

St. George's, Grenada  
4-8 November 2019

**Final Report**

29 November 2019

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## Background, objectives and overview of the workshop

1. The United Nations Statistics Division (UNSD), in collaboration with the Caribbean Community (CARICOM) Secretariat and the Government of Grenada, organized the Workshop on Environment Statistics and Climate Change Statistics for the CARICOM Region (henceforth ‘the workshop’) in St. Georges, Grenada from 4 to 8 November 2019.
2. Given a United Nations Statistical Commission request for UNSD to actively support developing countries in environment statistics through technical cooperation, the main purpose of the workshop was to help countries to implement the Framework for the Development of Environment Statistics (FDES 2013) and to familiarize them with the global work on climate change statistics and indicators. This was achieved through providing hands-on training on, inter alia, the FDES, the Environment Statistics Self-Assessment Tool (ESSAT), the Manual of the Basic Set of Environment Statistics, and on priority topics such as climate change statistics, water statistics, waste statistics, and the environmentally-related SDGs. Specifically, the workshop aimed at:
  - a) training participants from national statistical offices (NSOs) and ministries of environment (MoEs) or equivalent institutions such as environmental regulatory organisations in the CARICOM region on basic concepts, methods and best practices in environment statistics based on the FDES;
  - b) providing a forum for exchange of information on the status of national environment statistics;
  - c) enhancing participants’ capabilities in selected topics of environment statistics such as water and waste;
  - d) reviewing environmentally-related Sustainable Development Goals (SDGs) indicators in relation to the FDES Basic Set of Environment Statistics; and
  - e) sharing knowledge and experience in climate change statistics and indicators.
3. The workshop gathered 31 participants – being 10 from NSOs and nine from MoEs and other departments from eight CARICOM (member and associate member) countries: Belize, Bermuda, Dominica, Jamaica, Saint Lucia, St. Vincent & the Grenadines, Suriname and Grenada (see Annex 2 for the list of participants). In addition to UNSD and CARICOM, representatives from the Food and Agriculture Organization of the United Nations (FAO), the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations University (UNU), the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), and the Regional Collaboration Centre of the United Nations Framework Convention on Climate Change (UNFCCC-RCC), also participated in the workshop.
4. The workshop consisted of a series of experts’ presentations, sharing of and discussion of lessons learned from country practices, and facilitated group discussions. UNSD presentations covered the conceptual foundation and the structure of the FDES 2013, strategic pillars and steps to implement the FDES 2013, and details of environment statistics particularly relevant for the region (i.e. waste, water, and climate change). FDES 2013 supporting materials, such as the ESSAT, were also presented and discussed. FAO, UNFCCC, UNFCCC-RCC, UNU and ECLAC also provided substantive technical contributions in their respective subject matters.

## Summary agenda

(See Annex 1 for details.)

### Opening of the workshop

1. Framework for the Development of Environment Statistics (FDES 2013)
  - 1.1. Status and needs of environment statistics for sustainable development
  - 1.2. The FDES 2013 and its tools
  - 1.3. Use of the FDES 2013, ESSAT and National Action Plans
  - 1.4. Country use of FDES and ESSAT: success stories
2. Sustainable Development Goals (SDG) Indicators
  - 2.1. Review of the environmentally-related SDG Indicators
  - 2.2. Production of national data for the environmentally-related SDG Indicators and the CARICOM Core Set of SDG Indicators: Environmental Indicators
3. Water Statistics
  - 3.1. Methodology on water statistics
  - 3.2. Data on water
  - 3.3. Ocean statistics/marine water quality
  - 3.4. Assessment of the state of water statistics in the region
4. Waste Statistics
  - 4.1. Methodology on waste statistics
  - 4.2. Data on waste
5. Agriculture, land use/land cover and geospatial information for environment statistics
6. Climate Change Statistics
  - 6.1. Current work in climate change statistics and indicators
  - 6.2. Group work on climate change statistics and indicators
  - 6.3. Disaster statistics
7. Supporting regional and national programmes of environment statistics

### Closing of workshop

- Recommendations on the way forward to advance data and indicators work

## Opening

5. Mr Halim Brizan (Director, Central Statistical Office (CSO), Grenada) welcomed the participants and was chair of the opening ceremony. Mr Brizan, Ms Roxy Hutchinson (Permanent Secretary in the Ministry of Agriculture, Forestry and Fisheries, Ms Reena Shah (UNSD), Ms Faustina Wiggins (CARICOM), opened the workshop. They welcomed the participants and stressed the importance of environment statistics and climate change statistics in the region, taking into account regional particularities such as small size of the CARICOM member states, limited resources, vulnerability to external (economic) shocks and to natural disasters, water insecurity, contentious land management practices, loss of biodiversity, etc. The participants were reminded of the, UNSD/CARICOM Project in Strengthening Environment Statistics (1999-2003) that resulted in, inter alia, the first regional publication on environment statistics, The CARICOM Environment in Figures 2003. It was also noted that the project led to the establishment of the CARICOM Regional Programme in Environment Statistics, in which Interagency collaboration is a key aspect, and which has sustained the publication of three subsequent regional publications of The CARICOM Environment in Figures. The importance of accurate, timely and reliable environment statistics in national and international programmes, including on climate change was emphasised.
6. Following the introduction of participants, Mr Brizan presented the objectives and the agenda of the workshop. Participants agreed on the proposed agenda. Countries were asked to nominate persons for chair and rapporteur for the meetings. Ms Anjali De Abreu-Kisoensingh (Suriname) and Ms Janet Geoghagen-Martin (Jamaica) were nominated as chair and rapporteur respectively.

## Session 1. Framework for the Development of Environment Statistics (FDES 2013)

### Session 1.1: Status and needs of environment statistics for sustainable development

7. Ms Tamika George (Grenada) presented an overview of the status and needs for environment statistics in Grenada. National and international needs were explained, e.g. to support a 'Blue growth strategy', SDG reporting, environmental management issues, such as salt-water intrusion. She emphasised key challenges such as lack of human resources for environmental statistics both at the CSO and line ministries. She also noted that data sharing agreements and tools are needed (e.g. templates for data collection and exchange).
8. An overview of the regional situation was presented by Ms Wiggins (CARICOM), who updated the participants on the nearly two decades of environment statistics development in the region. She explained that certain challenges, such as data gaps persist in all themes (besides disasters) and require continuous capacity building in the region. The need for harmonized tools was emphasized (since most institutions currently have to apply 'own tools' which obstructs data sharing). Advanced technology, including geographic information system (GIS) and Earth Observation technologies needed for land use statistics remains a large data gap.
9. Ms Shah (UNSD) presented the international requirements for environment statistics, including for reporting on various multilateral environment agreements (MEAs), pointing that the United Nations Convention on Law of Sea, among others, is of high relevance to the region. She explained that the SDGs frequently require multiple underlying statistics to compile just one indicator emphasizing the importance of developing and collecting basic environment statistics. She also introduced the UNSD/UNEP Questionnaire 2018 on Environment Statistics (water and waste are the only two areas where no other international organizations collect data from developing countries); and also pointed

to the UNSD website as a repository of nationally-produced environmental surveys and censuses, and FDES-supported environment statistics and related compendia.

10. Further national and regional data sharing experiences and tools were briefly discussed at the end of Session 1.1, including previous activities in the framework of the MDGs. A new data sharing system is being set up in the framework of Monitoring, Reporting and Verification (MVR) project aiming to assist the CARICOM countries to set up Greenhouse Gas Inventories systems.

### Session 1.2: The FDES 2013 and its tools

11. Ms Shah and Mr Emil Ivanov (UNSD) explained the conceptual foundation, structure and contents of the FDES 2013, its Basic Set of Environment Statistics, and the Manual on the Basic Set of Environment Statistics. Ms Shah mentioned that the United Nations Statistical Commission has endorsed the FDES 2013 as the framework for strengthening environment statistics programmes in countries and has recognised it as a useful tool in the context of the SDGs. Mr Ivanov presented on the structure and contents of the methodology sheets of the Manual on the Basic Set and for whom they are designed (NSOs, MoEs, other agencies and international agencies). He explained the need for the Manual as the FDES does not have methodological guidance and metadata, methods of compiling data, etc. Also included in the methodology sheets are sources of recommendation and the relationship to the System of Environmental-Economic Accounting (SEEA) and the SDGs. The methodology sheets also make references to internationally available statistics and data as well as classifications. He showed the topics covered by the methodology sheets completed and uploaded to the UNSD website.

### Session 1.3: Use of the FDES 2013, ESSAT and National Action Plans

12. Ms Shah and Mr Ivanov (UNSD) explained the implementation of the FDES 2013 and its implementation-support tools. Ms Shah pointed out the advantages of using the FDES – conceptual and methodological knowledge; the structure to organise statistics; and its menu of statistics can be used to identify what is needed and available. The Blueprint for Action shows the strategic pillars to develop environment statistics, e.g.: applying the methodological tools; participation in technical assistance programmes; creation of legal mandates and financial support for environment statistics programmes; developing national capacities and communication methods for different audiences and promoting the use of environment statistics. Countries are urged to develop programmes of national environment statistics by: identifying the lead agency; assessing the data needed and the gaps; creating a National Action Plan and linking to the National Strategy for the Development of Statistics (NSDS); publishing compendia; identifying the data gaps. All these activities lead to the establishment of an environment statistics programme. The reporting template (draft) will be adjusted after results from new ESSAT applications are reviewed and evaluated.
13. Mr Ivanov (UNSD) explained the structure, contents and uses of the Environment Statistics Self-Assessment Tool (ESSAT). Part 1 focuses on institutional dimension of environment statistics: identifying the institutions and policies relevant to the country; who has the mandate for national statistics and environment statistics; production of environment statistics and use of environment statistics; inter-institutional collaboration; existing and required resources; international and regional network; and technical assistance and networking. Part 2 addresses statistics level assessment and looks at: the institutions involved; what data is available; the data gaps; data producers and statistics users; statistics produced (can include stats not in list but of relevance to the country); data needs by

reviewing policy documents, national environment plans and policies. The ESSAT can help to encourage further collaboration.

14. Issues related to access to capacity development assistance and NSOs role in exchange of environmental data and statistics were discussed. ESSAT helps to identify gaps and needs, and also to structure the needed background information that is required by donors. Feedback on ongoing work with ESSAT should be shared with UNSD so that UNSD can incorporate suggestions into future revisions. It was also discussed that reporting to UNFCCC faces similar challenges. Developed countries established national GHG inventory systems in response to the Kyoto protocol (for which institutional and legal mechanisms were set up for data reporting at appropriate time, accuracy and disaggregation level). Developing countries will be required to set up similar systems under the Paris Agreement and capacity needs to be developed domestically.

#### Session 1.4: Country use of FDES and ESSAT

15. Ms Geoghagen-Martin (Jamaica) presented on the experience of Jamaica in using the FDES 2013 and the ESSAT. First, she gave a short history on the development of the environment statistics programme at the NSO and the country's involvement in the FDES process, ESSAT and the Expert Group on Environment Statistics (EGES). The first attempt at the ESSAT, in 2012, was with collaboration with the National Environment and Planning Agency (NEPA). Another attempt in 2014, again with NEPA, was undertaken during a project sponsored by the World Bank. She shared the percentages of data available from doing the ESSAT in 2012, 2014 and 2019. She also shared the covers of the publications that the Statistical Institute of Jamaica (STATIN) has produced during the programme. Ms Martin also indicated that STATIN has adapted their compendia to the FDES structure and explained that this change was not very difficult as most of the data collected before were relevant to the FDES.
16. Ms Kisoensingh (Suriname) introduced the experience of Suriname in implementing the FDES and ESSAT and noted the importance of environment statistics. She highlighted work done as part of the CARICOM statistics programme. Suriname has produced eight compendia on environment statistics which are done every two years. In producing the reports, use is made of the CARICOM core set of statistics, the FDES and the SDGs. Ms Kisoensingh gave a chronology of the steps in the preparation of the compendia and the institutional arrangements. Using the components of the FDES as a base, she outlined the gaps in available statistics for Suriname; in total there is available data for 30% of the statistics in the core set of the FDES. The NSO, in collaboration with the ministry with responsibility for the environment filled out Part 1 of ESSAT and was able to complete it in one to two weeks. Part II can take one week to a month to fill out as has to be done by the NSO with the environment stakeholders and environment policy institutes. Ms Kisoensingh emphasized the importance of going through the complete ESSAT even if all the cells could not be completed.
17. Mr Edgar Ek (Belize) introduced the experience of Belize on implementing FDES and ESSAT. Environment statistics started in 1996 in Belize with technical assistance from Statistics Sweden and IDB funding. There were issues with the use of the ESSAT as close to 30 agencies were sent the questionnaire but about 40% was not fulfilled. Of the 458 statistics and indicators, ESSAT showed that there was no information for 22%; 4% was not applicable; and there was no response for 10%. Of data available, 56% are similar and 44% are identical to international standards. Mr Ek explained the legal framework for the development of environment statistics in Belize. It finally lies within the mandate of the ministry with responsibility for environment statistics. Environment statistics is currently being developed under the national statistical system (NSS). An Environment Statistics Advisory Committee

has been established and co-chaired by the Statistical Institute of Belize to provide overall guidance in the development of environment statistics. The first round of new data collection is expected to start in 2020 after the creation of data tables.

18. During the discussion it was mentioned that theme-focused reports provide more in-depth statistical overviews, according to Jamaica's experience. Issues related to consistency of data gathered from various sources persist, especially where no metadata is supplied. CARICOM has a set of metadata for their core set of statistics. CARICOM advised that they were working on the creation of a Centre of Excellence. Belize and Jamaica have assisted other CARICOM countries in production of environment statistics previously.

## **Session 2. Sustainable Development Goals (SDG) Indicators**

### **Session 2.1: Review of the environmentally-related SDG Indicators**

19. Mr Ivanov (UNSD) presented an overview of data reporting requirements for MEAs and SDGs in the CARICOM region. He demonstrated the link between the FDES 2013 and the environmentally-related SDG indicators. He explained that the FDES can help to address the issue of a single SDG indicator requiring multiple statistics to be calculated. He presented the matrix with the correspondence between the Basic Set of Environment Statistics and environmentally-related SDG indicators. He also made participants aware that some indicator definitions are complex and not straightforward; for that reason, the matrix also brings additional sources of information that might help in cases where SDG indicators are tier 2 or 3. A question about the use of indicators developed within UNEP's Latin American and Caribbean Initiative for Sustainable Development (known by its Spanish acronym ILAC) was raised, as well as the participation of CARICOM countries in this initiative. Some countries participated with primarily the involvement of the environment agency, and in Jamaica's case, the NSO was involved.
20. Ms Wiggins (CARICOM) presented reflections on the regional work on the CARICOM Core Set of SDGs beginning with an introduction to the SDG indicator development and an overview of the pre-2016 work on SDG indicators by the CARICOM Regional Statistics Programme (RSP) including national development plans, the Community Strategic Plan and the Samoa Pathway. In a regional workshop, the participants agreed on the number and type of indicators to be used by CARICOM states. In further work through e-meetings, the recommendations were refined and agreed on. In a meeting in Dominica at the end of 2017, a decision was made on the criteria for the core set of SDG indicators for CARICOM countries. After a meeting in 2018, 109 indicators were agreed on. Member states were asked to provide feedback on the availability of the Core SDG Indicators (125 unique indicators). The CARICOM RSP produced a report which is available on the CARICOM website. She advised the meeting that CARICOM will continue to assess the availability of the CARICOM Core SDG Indicators and commence a baseline assessment of the core indicators through a review of its database.
21. Ms Kisoensingh (Suriname) introduced the experience of Suriname on implementing SDGs and its links with FDES. Of the 11 goals related to the environment, the General Bureau of Statistics (GBS) collected 55%. Ms Kisoensingh outlined the advantages of data collection for the environmental indicators. Some of the indicators are included in the annual publication of the GBS. Challenges include: there is no SDG committee established; most of the available data is for social and economic data; Suriname does not have an NSDS; as NSO it relies a lot on administrative data, and most of new indicators are not collected by Ministries, Departments and Agencies (MDAs) or the NSO; lack of human and financial resources. Ms Kisoensingh mentioned that the way forward should address the



establishment of an SDG committee and that by law there must be a planning and statistics unit in each ministry.

22. Mr Donovan Bogor (Suriname) presented on a platform called 'Surinamese Environment Information Network' (Suriname Milieu Informatie Netwerk, SMIN) which was formed to create a body with the objectives to produce national environmental information, needed for policy support. Mr Bogor presented on types of arrangements that can be made between and among institutions providing data on the environment (centralized and decentralized). Consequent discussion dwelled on the advantages of more- or less-centralized data sharing systems, the use of GIS tools and the relevance of the Inter-governmental Panel on Climate Change (IPCC) methods.

### Session 2.2: Production of national data for the environmentally-related SDG Indicators and the CARICOM Core Set of SDG Indicators: Environmental Indicators (Part I)

23. Mr Ivanov (UNSD) introduced the session, notifying that statistics for one SDG indicator may come from different sources and different agencies. UNSD referred again to the matrix showing the correspondence between the Basic Set of Environment Statistics and environmentally-related SDG indicators. Examples of the SDG indicators and their relation to the FDES were presented to the meeting.

#### Group Work

24. One hour was allocated for the first part of an exercise which addressed MEA reporting requirements, with corresponding SDGs and FDES statistics. List of MEAs applicable in the CARICOM region and countries' ratification dates were distributed. The following questions were considered:

1. Are you aware/in communication with the focal points of the MEAs in your country (see slide with CARICOM countries ratification dates)?
2. Are you able to obtain data and compile statistics addressing these international reporting requirements?
3. Have you included the statistics in national compendia/yearbooks on environment statistics?
4. What issues of data quality have you faced? Have you found discrepancies between national and international sources of these data?
5. What options are you considering to resolve issues of quality and discrepancies?
6. What is the first option for the National Statistical Office (NSO) to deal with cases where compilation of a statistic goes beyond the expertise of statisticians inside the NSO, and may require specialist expertise from another ministry/agency?
7. Does your country have a mechanism whereby the NSO can meet on a regular basis to discuss compilation and dissemination of environment statistics (e.g. an inter-institutional working group)?

25. Four groups reported on the outcomes of the working group sessions. Most country NSOs are aware about the MEAs reporting requirements. Issues of data quality, including discrepancies with estimates produced by different organizations were reported. Specialized, including academic institutions are engaged in some countries. Formal mechanisms for interagency collaborations are not in place in

most of the participating CARICOM countries. Consequent discussions addressed some data discrepancies issues. FAO reported that assessments are often made because national data is not presented in required format. Ms Shah informed the workshop that countries were encouraged to review and validate the data that international agencies report on. Mr Ek inquired about the processes through which the international agencies, in particular, FAO sends data requests. Response was that the questionnaires were usually sent to the agencies/focal points that have responsibility for the particular statistics. More recently, they are sending these data requests also to the NSOs. Jamaica and Suriname responded that they get the requests for data and also the reminders.

## **Session 2.2: Production of national data for the environmentally-related SDG Indicators and the CARICOM Core Set of SDG Indicators: Environmental Indicators (Part II)**

26. The second part of the exercise addressed SDG indicators which require environment statistics. The ESSAT part 2 was used for identifying the needed statistics (from the 458 FDES statistics). The following questions were addressed:

1. How useful is ESSAT in order identify environment statistics to compile SDG indicators?
2. What are some of the main challenges in producing, disseminating and sharing the indicators under the various environmentally-related Goals?
3. If your country produces the data for the indicators which differs from the internationally available data produced/ or modelled by the custodian agencies; how can this be reconciled to avoid reporting multiple values of the same indicator from the same country?
4. If your country does not have capacity to produce the indicators and there are internationally available data produced or modelled by the custodian agencies how can this be better aligned?
5. What are the capacity building needs of the countries to assist them to produce the indicators?

27. Four groups reported on the outcomes of the working group sessions. All participants assessed the ESSAT part 2 as very useful to identify the environment statistics needed to produce SDG indicators. The need to follow up ongoing work on SDG metadata, verify estimations performed by international (custodian) agencies, promote the use of official statistics, and build and encourage the use of data quality frameworks were concluded as most important. Regarding capacity building the following needs were outlined: training in environment expertise; training on methodologies and information management; training in dissemination and outreach tools; sharing good practices from other countries and South-South cooperation.

## **Session 3: Water Statistics**

### **Session 3.1: Methodology on water statistics**

28. Application of the FDES to water statistics was presented by Ms Shah (UNSD). She gave an overview of the relation between water in the FDES components, sub-components and topics. She described the main issues related to water and the environment, including the quality and access to potable water, pressures on water supply, water-borne diseases, waterlogging and salinization of soils, etc. She pointed out that water quality was important for ecosystems, drinking water, food production and recreational water use. Ms Shah also described the relationship between water abstraction,

distribution, use and returns. The topics that relate to water under Components 1 to 6 in the FDES and their relationships was explained.

29. Mr Ivanov (UNSD) introduced the basic structure of the methodology sheet on water resources statistics. He outlined some difficulties in modelling evapotranspiration and pointed out that while abstraction from soil is not included, abstraction from sea (amount of desalinated water) is included. Also included in the methodology sheet are international sources and recommendations (Chapter 4). The International Recommendations for Water Statistics (IRWS), the FDES and the UNSD/UNEP Questionnaire on Environment Statistics (water section) are among the sources.
30. Ms Kristen Douglas (Bermuda) gave an overview of the island of Bermuda. An environment statistics compendium is prepared and is usually submitted every year and is in 13 sections. She gave her presentation on water resources in Bermuda. Freshwater is mainly from rainwater (the primary source) as there are no freshwater springs, rivers, etc. Water is, however, available from groundwater resources. There is some use of brackish water by reverse osmosis. Some challenges she highlighted were the collection of data from different sources, administrative issues, the protection of water resources and consumption.

### Session 3.2: Data on water

31. UNSD/UNEP Environment Questionnaire on Environment Statistics (water section) was presented by Ms Shah (UNSD). She informed the meeting that pre-filled questionnaires are sent to NSOs and Ministries of Environment every two years. UNSD does not do any estimation or imputation for missing values and they only consider the data to be accurate if it is confirmed by countries. The questionnaire addresses the water resources; the abstraction and use; the water supply industry; wastewater collection and treatment. SDG-water related indicators, part of Goal 6, indicators 6.3.1, 6.4.2 and 6.4.3 are indicators from which data from the questionnaire can be used. Variables which would be useful in compiling SDG 6 indicators from the questionnaire were shown.
32. Ms Giulia Conchedda (FAO) gave a presentation on water statistics in AQUASTAT and provided a short history of the programme under FAO. Two programmes within AQUASTAT collect water data and disseminate water statistics. They are a global source of water statistics from countries, useful to create country factsheets and regional overviews. There are data challenges as response rate is low, which is expected to increase after the second year of data collection. A new methodology was presented to the group. A calculation tool for SDG 6.4.2 is on the AQUASTAT website along with a guideline from FAO.

### Session 3.3: Ocean statistics/marine water quality

33. On-going work on ocean statistics and a draft methodology sheet on Marine Water Quality were introduced by Mr Ivanov (UNSD). The draft Marine Water Quality methodology sheet was prepared by UNEP and reviewed by UNSD and the EGES. The participants were informed of the Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) which gives guidelines for monitoring and assessment of plastic litter and micro plastics in the ocean and the Regional Seas Programmes which has 22 indicators for oceans. Mr Ivanov gave an overview of the definitions included in the methodology sheet as well as classifications and groupings for international sources and recommendations. SDG indicators also incorporate the statistics included in the methodology sheet. UNEP recently produced a final draft of a global manual on the indicators part of SDG14. An

FDES matrix on ocean statistics needed to produce ocean accounts has been developed and includes fisheries and other resources, uses of oceans and coasts, impacts, etc. It also includes the relationship to the relevant SDG indicators and the FDES statistics, as well as indicators of the Regional Seas Programme.

34. A national example of work on ocean statistics/marine water quality statistics was provided by Mrs Vernice Eunice Taylor (Dominica). It included an overview of the national environment statistics report by the Central Statistical Office of Dominica which is published biennially and a list of key stakeholders from whom data may be obtained. Measurements of nutrients and chlorophyll were difficult to obtain and limited. This also stands the same for water quality data. Reports of coral bleaching were available for two periods only and were in an article written from surveys in 2005 and 2010. Two marine reserves in Dominica (2,659.28 km<sup>2</sup> in area) were established in 1986 and 1998. Lobster, turtle and conch are protected species. Dominica is party to several regional and international agreements that relate to oceans. Challenges to data collection include: no central database or location where data is located; data is not readily available; after passage of a hurricane, data was lost; testing of water quality is limited due to lack of equipment and lack of human resources; any existing policies are not clear and not enforced; data is not "open". The way forward includes the formation of a committee; sensitisation of stakeholders and top officials; highlighting the importance of such data for decision making and a negotiating tool, among others.
35. Another national example was introduced by Mr Brizan (Grenada) who introduced the country background, including issues and risks for small island developing states (SIDS) as it relates to the Blue Economy; policy response to environmental issues; national statistics needed to support environmental and Blue growth policy, etc. Grenada's Blue Growth Coastal Master Plan is a plan for integrated ocean governance and shared prosperity (2016) through technical support from the World Bank. Among other initiatives, Grenada hopes to conserve 25% of its marine protected area coverage by 2020. Grenada is also a part of the Commonwealth Marine Economies (CME) Programme Enabling Safe and Sustainable Marine Economies across Commonwealth SIDS. National statistics are needed to support the above programmes, but the current data is inadequate. Grenada's national accounts are underdeveloped, so there is little capacity to undertake the SEEA at present. Work is ongoing to improve collection and dissemination of timely statistics on fish production. Grenada produces some relevant data that are included in the CARICOM Core List of Environment Indicators, including tourism and water statistics. Data collection and production in other areas of statistics was also outlined related to the SDGs.
36. Discussions following the above presentations addressed issues of NSO's involvement in and role in providing evidence when drawing development strategies, such as Grenada's Blue Growth. Grenada's CSO had to make investment in statistics in order to monitor various developments related to its Blue Economy master plan, while the CSO is not taking part in the committee on the master plan. ECLAC Trinidad is reviewing the statistics acts of Caribbean countries and most countries do not have environment statistics in their acts. Grenada is including environment and multi-domain statistics in a schedule. Jamaica remarked that a revision of their act included environment statistics.

### Session 3.4: Assessment of the state of water statistics in the region

37. Group work on the use of the ESSAT for Subcomponents on water statistics provided the following feedback:

- Component 1: The group assessed that the tool was very useful but the form is complex and takes time to get familiarized with. It was helpful to have someone with experience within the group. Suggestions were made to: include definitions in the document; include a column to distinguish the tier rankings; make a smaller list of information tailored for each institution and forward this to them so that they could fill in the data relevant to that organisation.
- Component 2: Within the drop-down menu, there should be an option to select multiple categories, e.g., data could be available from surveys, administrative data, as well as others. An additional column could be present to explain why certain options were chosen, e.g., why availability of statistics at national level is similar instead of being identical. Also, it would be useful to specify whether or not expert judgement was used in the process.
- Components 3 and 4: Doing such an exercise could contribute to other areas of statistics such as the SDGs and the SEEA. It is a good exercise to identify potential sources of information. The tier systems help in identifying most needed data. It would be useful to add a Yes/No column to check for existing national arrangements for data collection/analysis/dissemination. Other suggestions include: add column on availability of time series (intervals); multiples choices for some types of data (annual/seasonal); add to the tool explicit linkages to the SDGs and the SEEA; the tool can be tailored for regional specificities (CARICOM/SIDS); add extra columns for data sources (web links/contacts); type of data sources can include disaggregation (age/sex); Primary institutions (which are in Part 1): additional information to be specified on actual department/division/contact.
- Components 5 and 6: the exercise was assessed as very useful because it helped to share experiences from several countries. A less condensed form with more descriptions would be helpful. Method of dissemination should be multiple selection as there may be several forms for dissemination.

38. Following the groupwork reports, Ms Shah (UNSD) reflected that at the next year's EGES, the above suggestions (as well as from other meetings and users) will be taken into account for improvements and updates of the tool. Ms Pauline Leonard (ECLAC) further explained that the tool (ESSAT) is used quite often in countries in the region, and in many cases only the relevant sections are filled. Mr Ek (Belize) praised the efforts and leadership of UNSD in creating the ESSAT and giving the assistance to the region. It was concluded that the ESSAT can also assist NSOs to obtain donor funding as it organizes all the needed information in detailed form including overview of gaps, needs and available data.

## Session 4. Waste Statistics

### Session 4.1: Methodology on waste statistics

39. FDES 2013 Subcomponents 3.3: Generation and Management of Waste and 3.4: Release of Chemical Substances was presented by Ms Shah (UNSD). Component 3 covers residuals and contains statistics on the amount and characteristics of residuals generated by human production and consumption processes, their management and their final release to the environment. She introduced a definition of residuals and described the main sources of waste generation. Hazardous waste is a special group because of the toxicity of such waste and the reporting needs for the Basel Convention. Management of waste covers the amount of waste collected and transported, treated and disposed of by type of treatment and disposal; the number and capacity of treatment and disposal plants, among other info relevant to waste management. Release of chemical substances refers to chemical fertilisers and

pesticides as well as the environmental effects. This covers also related MEAs such as the Stockholm Convention on Persistent Organic Pollutants (POPs).

40. The Manual on the Basic Set of Environment Statistics: Generation and Management of Waste presented by Mr Ivanov (UNSD). This methodology sheet included a new section on the Concepts of Waste Statistics. Management of waste includes statistics on municipal and hazardous waste collection, treatment and disposal. He introduced the reasons for increased waste generation and its impacts on human health and biodiversity. The presentation also covered concepts in waste statistics and included a definition of waste which excludes material that are recycled and reused. Data should not include illegal or uncontrolled collection, treatment or disposal. Waste management data is usually collected from administration data while waste generation is often estimated, and waste composition is collected periodically using special surveys.
41. Electronic waste statistics were presented by Ms Michelle Wagner (UNU). She introduced a harmonised framework to measure e-waste. She explained the types of waste that are regarded as e-waste, including minerals such as gold, aluminium, copper and lead, among others. These minerals are usually disposed in waste if not collected for re-use. Some are exported but the volumes of both are not known. She presented statistics on how much e-waste is generated in countries and how much is re-used or recycled. A harmonised framework to measure e-waste was developed based on internationally-defined indicators, which covers: imports and exports of electronic and electrical equipment (EEE) as well as volumes in households; production of EEE are necessary information for estimating e-waste. SDGs that are related to e-waste were explained. Ms Wagner demonstrated the tool used to estimate e-waste; the country data needed to input in the tool (imports, exports) and the processes that the tool will go through to generate the output.
42. Ms Kisoensingh (GBS) gave a presentation and results of applying the e-waste tool in Suriname. Her presentation introduced a definition of e-waste, imports, the Basel Convention, the use of the tool, and the e-waste that was generated. Only imports were used as there are no exports of e-waste. She showed the steps that were taken to generate the e-waste statistics. Questions were asked on how the tool worked and whether or not exports should be included. The tool has the depreciation and lifetime of electronic and electrical appliances and is particular to different regions.

#### Session 4.2: Data on waste

43. The UNSD/UNEP Questionnaire on Environment Statistics (waste section) was presented by Ms Shah (UNSD). She introduced the waste section of the UNSD/UNEP Questionnaire on Environment Statistics. She explained the structure of the questionnaire and showed the results from the previous questionnaire round for the countries in the region. She demonstrated how this data relates to SDG indicators (including indicators which are currently estimated). Ms Shah showed the types of data collected by some countries and presented to UNSD. There is no universal methodology for conversion between volumes of waste and mass, and countries give different measurements. Hazardous waste, municipal waste and composition of waste for some countries was also shown. For the first time, in 2018, e-waste generated and collected tables were included but the response was limited. SDG indicators 11.6.1, 12.4.2 on hazardous waste and 12.5.1 on the national recycling rate can be estimated using the inputs from the questionnaire.
44. A national example was presented by Ms Jonelle Volney and Ms Uranda Xavier (Saint Lucia). Saint Lucia does not produce hazardous waste but has restrictions on the import of hazardous waste. There are, however, regulations on waste oil and batteries. The presentation referred to the Stockholm Convention and how it applies to St Lucia. Waste categories which go to the waste management

facilities were listed. Waste collection on the island was 100% for households (daily collection by private contractors). The solid waste management authority is not responsible for private waste collection. All waste going to the landfill is weighed, recorded and categorised. However, e-waste is combined with other waste.

## Session 5: Agriculture, land use/land cover and geospatial information for environment statistics

45. Agriculture, land use/land cover and geospatial information for environment statistics were presented by Ms Conchedda (FAO). She delivered a presentation on geospatial information and Earth observations as data sources for climate change statistics. She explained how FAOSTAT agri-environmental statistics can be applied to land cover and land cover change (e.g. area burned, emissions from biomass fires, area of degraded peatlands/emissions), and to temperature changes. Information from these statistics is needed for key reporting processes. She demonstrated the large use of geospatial-derived statistics to address relevant issues in agri-environment and climate change. FAO produces and disseminates analytical estimates in support of national, regional and global evidence-based decision-making. The aim is to support, through methodological work as well as data, international reporting by member countries. She explained how the focus on education/communication of results to non-specialised users is an important driver of this work. Agri-environment FAOSTAT questionnaires are sent out to national focal points. FAO has been trying to reduce the burden on countries and are aware that there are challenges in the collection of data. Statistics to support climate change and the SDGs are collected by FAO. Questionnaires are applied for Land use and irrigation data. The importance of geospatial data to access information on remote and inaccessible areas was highlighted.
46. GIS in FDES, Land, Ecosystems and biodiversity statistics were introduced by Mr Ivanov (UNSD). Geospatial information adds value and utility to environment statistics. Global Geospatial Information Management (UN-GGIM) provides guidance on national spatial data developments. He outlined the main concepts and definitions on Earth Observation including GIS, vector and raster levels, data frames, geodatabase and an ESRI website for explanations of other terms. While referring to the methodology sheet on land cover, the necessity for land statistics was explained. The relevance of land cover statistics was emphasized due to the large number of SDG indicators that need land statistics in their compilation. The methodology sheet on ecosystems and biodiversity statistics was also presented. These types of statistics are used for policy purposes which include Aichi Biodiversity Targets and the SDGs. Goals 6, 14 and 15 are the goals where data is needed on ecosystems and biodiversity. For the FDES, spatial data is useful in counting species, population size and distribution. An explanation of how the International Union for Conservation of Nature (IUCN) calculates its Red List Index (an indicator in trends in species' extinction risk) was shared with the participants.
47. Following the above presentations, Mr Bogor (Suriname) shared his experience on GIS with globally-available data such as those from NASA, emphasizing certain limitations and the need for 'ground truthing'. Mr Ivanov informed the workshop that the European Space Agency (ESA) is working to produce better resolution maps, from remote sensing for many places, including for Grenada. Belize enquired if there are any capacity building activities on remote sensing that could help to strengthen activities in the region. Ms Conchedda informed that the FAO datasets are also freely available for use by the countries. She proposed to write a concept note to give assistance to countries in the region as has been done in other regions.

## Session 6. Climate Change Statistics

### Session 6.1: Current work in climate change statistics and indicators

48. On-going work on a global set of climate change statistics and indicators was presented by Ms Shah (UNSD). Short history of work on climate change statistics and its cross-cutting link to the FDES were introduced. The sequence of climate change indicators is based on the IPCC guidelines. At the 47th session of the Statistics Commission, UNSD in collaboration with UN-ECE, prepared a joint report. The UN-ECE set of indicators was endorsed by the Conference of European Statisticians in June 2017 as an initial list. It was agreed that the FDES should be used to guide countries commence work on climate change statistics. UNSD was asked to review additional indicators following the pilot-testing of the UN-ECE set within selected countries taking part in the EGES. The pilot survey found that there were methodological issues or lack of clear definitions; also, there was lack of technical capacity and human/financial resources especially in developing countries. New/additional indicators were identified as needed for developing countries as well as inter-institutional mechanisms at the national level. At the 49th session of the Statistical Commission, UNFCCC was invited to contribute to the report, the resolution from that meeting was that countries should participate in a pilot survey and there is a need to link statistics and policy. At the 6th EGES meeting in May 2019, there were presentations and working group discussions on climate change statistics. The ongoing work on a global set of climate change indicators was also explained. There are about 7,500 country-sourced indicators related to drivers, impacts, mitigation, adaptation and vulnerability, many of them repeated. These indicators come from publications from various national bodies. The final number of indicators has not been decided yet but should be comprehensive and applicable to all countries. A core set was suggested that would be simple to measure along with additional indicators that are region or nation specific. Further work may include a metadata sheet, further engagement and collaboration with UNFCCC and other partners. The close collaboration between UNSD and UNFCCC to promote the link between statistics and policy was illustrated through, inter alia, joint reports to the Statistical Commission, joint Side Events, and capacity development activities. UNSD plans to conduct a Pilot Survey and the Global Consultation of the climate change statistics and indicators in 2020.
49. Climate change statistics and relation to policies were presented by Mr Vlad Trusca (UNFCCC). He presented a background to the UNFCCC Secretariat, and explained how his organisation deals with data submitted by countries. He explained the data processes of collection, analysis, management and dissemination in the context of the measurement, reporting and verification (MRV) requirements for all Parties under the Convention, Kyoto Protocol and Paris Agreement. He explained that parties to the UNFCCC submit a vast amount of data about all national activities (mitigation, adaptation, technology transfer, financial support, capacity building, etc.), and this becomes publicly available on the UNFCCC website. He advocated for enhanced cooperation between NSOs and authorities responsible for reporting climate change data; he also told country representatives to expect an increase of data reporting requirements under the Paris Agreement, given that the modalities, procedures and guidelines (MPGs) for the Enhanced Transparency Framework of the Paris Agreement (art. 13) have been agreed by Parties last year at the 24th session of the Conference of Parties (COP24) in Katowice, Poland. A global stocktake is a periodic evaluation of the implementation of the Paris Agreement in order to assess the progress towards achieving long-term goals and the first such process will be in 2023 based on the reports submitted officially by Parties. The adaptation process is linked to the SDGs, disaster risk reduction (DRR), climate change adaptation, etc. Biennial Transparency Reports, along with national GHG inventory reports should now replace all other reports contributed by the parties. All countries shall report on their: 1. national entity with overall



responsibility of the national GHG inventory; 2. GHG inventory preparation process; 3. Archiving of information for entire time series, including QA/QC; 4 process for official consideration/approval. All countries should use the 2006 IPCC Guidelines as well as the same methods and consistent approach; to estimate missing values using surrogate data, extra- / interpolation or other IPCC techniques; discuss any uncertainties in the data; report on CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub> and NF<sub>3</sub>. However, developing countries are given flexibility to report on at least first three gases and any others if possible and if already included in their nationally determined contributions (NDCs). The collection of data is a fundamental part of the inventory preparation. The IPCC 2006 guidelines gives guidance on a data collection programme. The importance of inter-institutional arrangements was emphasized and UNFCCC outlined the next steps. These include the current negotiations for the establishment of common reporting tables for National GHG inventories and tables for tracking progress towards NDCs and for reporting financial support provided and received. A training programme for technical experts used for reviewing the information provided by parties is also under negotiations. Data from the countries are available on the UNFCCC website. A project (4 years) is being implemented to strengthen the capacity of developing countries to prepare and manage national GHG inventories for implementing the Enhanced Transparency Framework. This is mostly financed by the Swedish International Development Agency, along with other donors.

50. FAOSTAT statistics for climate change in agriculture, forestry and other land use, geospatial information and Earth observations was delivered by Ms Conchedda (FAO). She introduced the FAOSTAT Analytical Environmental Statistics, which includes the climate change-relevant statistics at FAO (i.e. statistics in agriculture, forestry and other land use). She explained how agriculture is both a significant cause of climate change and a sector greatly vulnerable through negative impacts. She explained FAO's support to member countries in order to enable national analysis and regional comparisons. They also contribute to the work of the UNSD and UN-ECE Task Force on climate change -related statistics and complement SDG 13. Datasets from FAO include GHGs from agriculture, forestry and other land use; agriculture and food-related land use emissions; and emission intensities for agricultural commodities. She showed information available on emissions for CARICOM, Caribbean and Central American countries. Climate change statistics available in FAOSTAT include applications of geospatial data. While there are linkages to the SDGs and SEEA, there is no global statistical data collection on emissions from degraded peatland and fires. Other geospatial datasets looked at emissions from biomass fires. A dataset of temperature changes at a national level are available on a monthly, seasonal and annual basis, and are obtained through a collaboration with NASA Goddard Institute of Social Studies (GISS).
51. Regional climate change reporting work was presented by Mr Vintura Silva (Regional Collaboration Centre/Caribbean Corporate MRV Hub). The CCRHVH (MRV Hub) is a regional institution designed to support member countries to improve reporting systems and build reporting capabilities for the Paris Agreement, enhance domestic evidence-based policymaking and improve data availability for climate finance projects. They are a part of the International Climate Initiative (IKI) funded by the German Bundestag. The grant does not cover funding for Haiti and Suriname but those countries can be included in training activities. The CCMRVH MRV process is led by a steering committee. The process looks at desk analysis and country reviews. A capacity building report is prepared and then a work plan. NCIs that are produced by Caribbean countries were shown along with timelines for publication. Collection and calculation of data for the reports as well as legal arrangements within the countries need to be strengthened. The role of NSOs were outlined although that did not necessarily mean that the consultants who gathered the data asked the NSOs for data inputs or validations. There was work on the development of templates to collect data as well as data management tools including archiving and storage of data, outcomes from the 2019 MRV Hub Meeting Planning and Workplan

Overview. There were two training sessions: in Jamaica and Grenada. There are other international sources of support for MRV systems but funding is limited.

52. Regional work on climate change statistics was presented by Ms Wiggins (CARICOM). Because of the economic losses and damages from adverse climate change in the region and need for more evidence-based data, CARICOM has taken the decision to produce a climate change statistics report. Data for the report was more available for consumption of energy and few national sources for emissions. There are no data available for mitigation. The indicators being used in the report are linked to the SDGs.
53. Climate change and disasters indicators were also presented by Ms Leonard (ECLAC). She informed the meeting that ECLAC is the regional arm of the United Nations Secretariat and as such do not collect data but present statistical yearbooks. While the region is not adding many emissions to the atmosphere, it is greatly affected by disasters. At present the LAC region accounts for 5-8% share of global CO<sub>2</sub> emissions.
54. A national example of climate change statistics was presented by Ms Janet Geoghagen-Martin (Jamaica). She introduced the development of a climate change statistics report in Jamaica. She outlined the difference between weather and climate and how SIDS can be affected by changes in the climate of a country. The topics in the climate change report were structured according to the FDES cross-cutting issue. She showed data that was included in the report and the other activities related to climate change that were undertaken by Jamaica.

### Session 6.2: Group work on climate change statistics and indicators

55. National experiences related to climate change statistics in terms of institutional arrangements and indicators/data issues were discussed in groups. The data availability considered the preliminary list of the global climate change indicators prepared by UNSD which includes indicators that have already been addressed by countries and are consistent with international requirements. The institutional arrangements were addressed considering the following questions:

- What is the current situation in your country in terms of cooperation between the NSO and the institution reporting climate change information to UNFCCC?
- Is the NSO in your country involved in supporting the implementation of climate action at the national level (with data, methods, analyses, etc.)?
- How is the NSO addressing the multiple international reporting requirements under UNFCCC, SDGs, Sendai and others (e.g., UNCCD, FAO, UNSD), considering similar underlying statistics are often required?
- How can international and regional organizations (incl. UNFCCC RCC in the region) assist your country in organizing the reporting process and strengthening collaboration between national institutions involved in climate change action and reporting?
- Would it be helpful for UNSD and UNFCCC to develop a set of guidelines/ guidance for promoting cooperation between NSOs and institutions reporting climate change information at the national level?

56. The groups reported limited cooperation between NSOs and institutions reporting to UNFCCC and mostly on an informal basis. International organisations should increase efforts to work with national

focal points/national 'champions' so that resources can be channelled adequately and ensure that involved institutions are accountable. Regional level institutions could also play an important role in the process. Guidance and training in related to climate change areas should be strengthened and provided so that the NSO should be able to complete estimation of GHG emissions within their own capacities.

57. Regarding the global list of indicators and data needs it was suggested that specific metadata should be provided as concepts and understanding on the needed data differs among the participating countries. The list was assessed as very comprehensive. Countries notified that some indicators have not been considered in their respective work previously, but the worksheet provides new ideas. Countries expressed interest in participating in the Pilot Survey and the Global Consultation on climate change statistics to be conducted by UNSD.

### Session 6.3: Disaster statistics

58. Disaster-related statistics were presented by Ms Shah (UNSD). At the 49th session of the Statistics Commission in 2018 disaster-related statistics were introduced. At the 50th meeting (March 2019) UNSD, UNESCAP, UNECE, UNECLAC and UNISDR prepared a joint report which elaborated on growing demand and needs for those statistics. They looked at current situation regarding activities around the world; summarised work of main international and regional organisations. She outlined the statistical work on disasters in the UNSD - the methodology sheet on Extreme Events and Disasters which is currently being finalized. The methodology sheet will elaborate the most current terminology being used internationally as disasters should be categorised using the same criteria as the CRED Emergency Events Database (EMDAT). She gave an overview of Component 4 and Sub-component 6.3, Topics 6.3.1 and 6.3.2 of the FDES as they related to disaster statistics. Ms Shah informed the group of other work in the form of the Strategic Framework on Geospatial information and Services for Disasters organised under the UN-GGIM. ESCAP has also developed a disaster-related framework from the Expert Group on Disaster-related Statistics in Asia and the Pacific. Other work being done is the UNECE Recommendations on the Role of Official Statistics in Measuring Hazardous Events and Disasters. The presentation continued with an overview from ECLAC - the Statistical Conference of the Americas with a Working Group on Measuring and Recording Indicators related to Disaster Risk Reduction. It was noted that the ten member countries of this working group do not include any CARICOM countries.
59. A national presentation was delivered by Mr Jamal Karlon Daron Byron and Ms Maxine Bridget Glasgow-Cottle (St. Vincent & the Grenadines) which provided details of natural disaster statistics and discrepancies with international data reported for the same country. They emphasized the need to conduct training with stakeholders on the importance of, inter alia, proper data collection methods, data quality and data sharing, and the need to liaise with relevant international organizations to share disaster-related data. Ms Shah (UNSD) commented on the discrepancies between local and international data sources, emphasizing that this is one of the issues the workshop is addressing. She suggested that the reasons for these discrepancies should be investigated by contacting the local focal points, identifying the national reporting entities, and assessing the source of/reason for the discrepancies. She provided the countries present at the workshop with a list of the focal points for the Sendai Framework in each country.

## Session 7: Supporting Regional and National Programmes of Environment Statistics

### Regional programme and Regional Action Plan

60. Mr Brizan (Grenada) gave a brief presentation on the CARICOM Action Plan for Statistics which was endorsed in 2016 by all CARICOM heads of government, which underlined: the need for development of statistics and necessary funding; to strengthen the NSOs and NSS (education and training; update of legislation; autonomy of NSO; support to NSDS to transform the NSS; financial and related support; support for surveys and access to admin stats, among other recommendations.

### Development of National Action Plans

61. Ms Shah (UNSD) mentioned that consideration is being given at UNSD for a NAP template to be developed in the next period and reviewed at the EGES meeting next year. When completed, it will be uploaded on UNSD website.

62. A round of discussions took place where countries reflected on the status of environment statistics programmes in their respective countries. Most countries noted that they did not have NAPs at present but based on the training and discussions at the workshop, several countries reacted that work on NAPs will commence following this workshop. Countries also expressed the usefulness of the workshop and that they would share and implement what was learnt, including the application of the ESSAT.

63. Mr Ek (Belize) gave a short presentation on the NAP in Belize, which was developed under the Regional Public Goods (RPG)/IDB/INEGI/ECLAC project. This same process was undertaken in Jamaica, Suriname and the Bahamas. The outcomes of the project can be accessed at [http://geoweb2.inegi.org.mx/cajaherramientasbid/eng/proceso\\_produccion.html](http://geoweb2.inegi.org.mx/cajaherramientasbid/eng/proceso_produccion.html). Suriname commented that further work will be directed to collecting data for MEAs and the SDGs. Validation of data from international agencies will be a priority as recommended earlier.

### Regional Project: Caribbean SIDS relevant climate change and disasters indicators for evidence-based policies

64. Ms Leonard (ECLAC) gave an overview of a new project to be initiated by ECLAC using a methodology that has been used in the region over the last 20 years. It is expected to do both sub-regional and national direct technical assistance to selected (pilot) countries. There will be specialised support to identify and produce selected, relevant and prioritised indicators to monitor climate change and disaster occurrences and impacts and capacity-building activities as well as a community of practitioners for sustainability. The project will be implemented by ECLAC and other partners are welcome to participate. MoEs/departments of environment and NSOs will be brought together to collaborate in the project.

## Recommendations

The workshop recommended that:

### Countries:

- i. Countries implement the Framework for the Development of Environment Statistics (FDES 2013) and incorporate this work into their national action plans or national strategies for the development of statistics.
- ii. Countries develop national action plans for the production of environment statistics.
- iii. Countries produce national publications on environment statistics.
- iv. Countries complete the Environment Statistics Self-Assessment Tool (ESSAT) (Parts I and II) at the national level in collaboration with all relevant stakeholders.
- v. Countries establish/strengthen a national working group on environment statistics composed of major environmental institutions such as the Ministry of the Environment, the National Statistical Office, research institutes scientists, technical and financial partners and other stakeholders.
- vi. Countries include environmentally-related questions in censuses/surveys and/or develop specialized environmental surveys and share lessons learnt.
- vii. Countries complete the UNSD/UNEP Questionnaire 2020 on Environment Statistics which will contribute to the waste and water related SDG indicators.
- viii. South-South cooperation be encouraged to share experiences and best practices in environment statistics among similar countries.
- ix. Countries participate in the Pilot Survey and Global Consultation on Climate Change Statistics to be conducted by UNSD in 2020.
- x. National statistical offices improve collaboration with the ministry responsible for climate change reporting to UNFCCC to promote the use of common underlying statistics serving multiple reporting requirements under, inter alia, UNFCCC, SDGs and the Sendai Framework.

### International/regional organizations:

- xi. Custodian agencies use official national data in the Global SDG Indicators Database and when estimated to get back to the countries for validation as the data for many of the environmentally-related SDG indicators reviewed by participating countries in the workshop were not consistent with the national data.
- xii. International and regional organizations continue support to countries on areas of work in environment statistics, climate change statistics and geospatial data for SDG and environmental indicators.
- xiii. International and regional organizations coordinate their environment data collection exercises from countries to minimize duplication and reporting burden.
- xiv. UNSD, CARICOM and development partners to continue to collaborate on strengthening, training and capacity building on environment statistics in the region.
- xv. UNSD to develop further the ESSAT by including references to SDG links, MEAs, links to data sources (if accessible on-line) and tiers of the statistics.

## Closing Remarks

65. Greatest appreciation was expressed for UNSD's initiative and engagement in the CARICOM region, for the countries that came to share experiences, and the international partners active in the region.

## Annex 1

### Final Agenda

**Monday, 4 November 2019**

#### Opening of the Workshop

**8:00-8:30**      **Registration of participants**

**8:30-10:00**    **Opening and Objectives of the workshop**

- United Nations Statistics Division (UNSD)
- Caribbean Community Secretariat (CARICOM)
- Government of Grenada
- Introduction of participants
- Presentation and adoption of agenda
- Presentation of the objectives

*10:00-10:30*    *Coffee break - Group Photo*

#### Session 1: Framework for the Development of Environment Statistics (FDES 2013)

**10:30-11:30**    **Session 1.1: Status and needs of environment statistics for sustainable development**

- National situation (Grenada)
- Regional situation (CARICOM)
- International situation (UNSD)
- Discussion

**11:30-12:30**    **Session 1.2: The FDES 2013 and its tools**

- Conceptual foundation and structure of the FDES (UNSD)
- Basic Set of Environment Statistics (UNSD)
- Manual on the Basic Set of Environment Statistics (UNSD)
- Discussion

*12:30-13:30*    *Lunch break*

**13:30-14:30**    **Session 1.3: Use of the FDES 2013, ESSAT and National Action Plans**

- Implementation of the FDES 2013 (UNSD)
- Environment Statistics Self-Assessment Tool (ESSAT) (UNSD)
- Discussion

*Coffee break*

**14:30-16:30**    **Session 1.4: Country use of FDES and ESSAT: success stories**

- Jamaica
- Suriname
- Belize
- Discussion

## Session 2: Sustainable Development Goals (SDG) Indicators

### 8:30-10:00 Session 2.1: Review of the environmentally-related SDG Indicators

- From the FDES 2013 to the SDG Indicators (UNSD)
- Regional work on the CARICOM Core Set of SDG Indicators: Environmental Indicators (CARICOM)
- Country presentation: Suriname
- Discussion

*10:00-10:30 Coffee break*

### 10:30-12:30 Session 2.2: Production of national data for the environmentally-related SDG Indicators and the CARICOM Core Set of SDG Indicators: Environmental Indicators

- Group work

*12:30-13:30 Lunch break*

### 13:30-14:30 Session 2.2: Production of national data for the environmentally-related SDG Indicators and the CARICOM Core Set of SDG Indicators: Environmental Indicators (cont.)

- Group work
- Discussion (plenary)

*Coffee break*

## Session 3: Water Statistics

### 14:30-15:30 Session 3.1: Methodology on water statistics

- Application of the FDES to water statistics (UNSD)
- Manual on the Basic Set of Environment Statistics: Water Resources (UNSD)
- Country presentation: Bermuda
- Discussion

### 15:30-16:30 Session 3.2: Data on water

- UNSD/UN Environment Questionnaire on Environment Statistics (water section) (UNSD)
- FAO Aquastat
- Discussion

### Session 3: Water Statistics (cont.)

- 8:30-10:00    **Session 3.3: Ocean statistics/marine water quality**
- Manual on the Basic Set of Environment Statistics: Ocean Resources (UNSD)
  - Country examples: Dominica  
Grenada
  - Discussion

*10:00-10:30    Coffee break*

- 10:30-12:30    **Session 3.4: Assessment of the state of water statistics in the region**
- Group work: Use of the ESSAT for Subcomponents on water statistics

*12:30-13:30    Lunch break*

- 13:30-14:30    **Session 3.4: Assessment of the state of water statistics in the region (cont.)**
- Group work: Use of the ESSAT for Subcomponents on water statistics
  - Discussion (plenary)

*Coffee break*

### Session 4: Waste Statistics

- 14:30-16:30    **Session 4.1: Methodology on waste statistics**
- FDES 2013 Subcomponents 3.3: Generation and Management of Waste and 3.4: Release of Chemical Substances (UNSD)
  - Manual on the Basic Set of Environment Statistics: Generation and Management of Waste (UNSD)
  - Electronic waste statistics (UNU)
  - Country example: Suriname
  - Discussion



## Session 4: Waste Statistics

### 8:30-10:00 Session 4.2: Data on waste

- UNSD/UN Environment Questionnaire on Environment Statistics (waste section) (UNSD)
- Country example: Saint Lucia
- Discussion

*10:00-10:30 Coffee break*

## Session 5: Agriculture, land use/land cover and geospatial information for environment statistics

### 10:30-11:30 Session 5: Agriculture, land use/land cover and geospatial information for environment statistics

- Agriculture, land use/land cover and geospatial information for environment statistics (FAO)
- Ecosystems and biodiversity (UNSD)
- Discussion

## Session 6: Climate Change Statistics

### 11:30-12:30 Session 6.1: Current work in climate change statistics and indicators

- Global set of climate change statistics and indicators (UNSD)
- Climate change statistics and relation to policies (UNFCCC)
- FAOSTAT statistics for climate change in agriculture, forestry and other land use or Geospatial information and Earth observations: data sources for climate change statistics (FAO)
- Discussion

*12:30-13:30 Lunch break*

## Session 6: Climate Change Statistics

### 13:30-15:00 Session 6.1: Current work in climate change statistics and indicators (cont.)

- UNFCCC-RCC/CCMRVH (Regional Collaboration Centre/Caribbean Corporative MRV Hub)
- Regional work on climate change statistics (CARICOM)
- Climate change and disasters (ECLAC)
- Country example: Jamaica
- Discussion

*Coffee break*

### 15:00-16:30 Session 6.2: Group work on climate change statistics and indicators

## Friday, 8 November 2019

8:30-10:00 Session 6.2: Group work on climate change statistics and indicators (cont.)

10:00-10:30 *Coffee break*

10:30-11:30 Session 6.2: Group work on climate change statistics and indicators

- Discussion (plenary)

11:30-12:30 Session 6.3: Disaster statistics

- Disaster-related statistics (UNSD)
- Country presentation: St. Vincent and the Grenadines
- Discussion

12:30-13:30 *Lunch break*

### Session 7: Supporting Regional and National Programmes of Environment Statistics

13:30-15:30 Session 7: Support regional and national programmes of environment statistics

- Development of National Action Plans (UNSD)
- Development of National Action Plan (countries)
- Regional programme and Regional Action Plan (CARICOM)
- Regional project (ECLAC)
- Way forward
- Discussion

*Coffee break*

### Closing of the Workshop

15:30-16:00 Closing Remarks

- UNSD
- CARICOM
- Government of Grenada

16:00-16:30 Evaluation

## Annex 2

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