STATISTICS DIVISION
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GRENADA

National Workshop on Environment Statistics and Climate Change Statistics

St. George's, Grenada

12-14 November 2019

Final Report

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Background, objectives and overview of the workshop

1. A three-day national workshop on Environment Statistics and Climate Change Statistics was conducted in St. George's, Grenada from 12 to 14 November 2019. It was organized by the Central Statistical Office (CSO) of Grenada with support from the European Union and the United Nations Statistics Division (UNSD).

2. The workshop was attended by 33 participants from various national institutions including the CSO, Ministry of Agriculture, Forestry and Fisheries, Ministry of Health, National Water and Sewerage Authority, Meteorological office, Grenada Solid Waste Management Authority (GSWMA), Fisheries Division, National Disaster Management Agency (NADMA), Economic and Technical Co-operation, Ministry of Agriculture and Lands, Customs and Excise Division, Energy Division/ Environment, Infrastructure, Inland Revenue Division, Forestry Division, Grenada Port Authority, Land Use Division, CFOAG, Min of Climate Resilience & Environment. In addition, the UNFCCC-Regional Collaboration Centre (RCC) located at St. George's University in Grenada, also participated. A List of Participants is provided in Annex I of this report.

3. The main goal of the national workshop was to increase visibility of environment statistics through the Framework for the Development of Environment Statistics (FDES 2013) and build technical capacity in this subject area in the country, by bringing the stakeholders together to assess work undertaken by Grenada in recent years and to provide hands-on training on priority topics such as climate change, hazardous events and disasters, water, waste, land, environmental health, biodiversity and forest statistics. These topics were discussed in the context of reporting obligations under the corresponding Multilateral Environmental Agreements (MEAs), the environmentally-related Sustainable Development Goals (SDGs) and national policies including 'Blue Growth' for which there is a strong need to develop marine/ocean statistics.

4. The workshop included introductory sessions on the FDES 2013, SDGs, coastal and ocean statistics, climate change statistics, as well in-depth training sessions on selected priority topics, including land, water, waste, climate change, forests and biodiversity statistics. As a result of the training sessions and discussions, the workshop participants adopted a set of recommendations, including: setting up an Inter-agency Committee and a Technical Sub-committee on Environment and Climate Change Statistics; the Government of Grenada becoming a signatory to and ratify the various MEAs that they have not signed on to or ratified as yet; development of a National Action Plan (NAP) for Environment Statistics; implementation of the FDES 2013 and the Environment Statistics Self-Assessment Tool (ESSAT); and participation in the Global Consultation on Climate Change Statistics and Indicators.

Opening of the workshop

5. In his opening address, Mr. Halim Brizan, Director of Statistics (CSO), welcomed all participants and acknowledged the support for this event provided by the European Development Fund and UNSD. He also mentioned the importance of the Regional Workshop on Environment Statistics and Climate Change Statistics organized by UNSD and CARICOM that was held in St. George's, Grenada from 4 to 8 November 2019, in which several stakeholders from Grenada also participated. Mr. Titus Antoine, Economic Division, Ministry of Finance, emphasised the importance of structuring and organising environment statistics, explained key priorities and expressed appreciation to the organizers of the workshop. He also stressed the growing demand for monitoring environmental resources and impacts of climate change which results in the need for increased timely and reliable statistics, and in this regard noted the importance and timelines of this national workshop. Ms. Shah (UNSD) commended the CSO of Grenada for taking this initiative and organizing such an important workshop to bring together national stakeholders with a view to establishing an environment statistics programme in Grenada. She thanked the

participants for attending the workshop and wished for the workshop to be a success in strengthening environment and climate change statistics in Grenada.

Summary agenda

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Session 4.4: Environmental Resources (FDES Component 2, SDG 6): Water Resources (cont.)

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Session 5: Climate Change and Disasters Statistics

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A full and more detailed agenda is provided in Annex II of this report.

Session 1: Introduction to environment statistics

6. Ms. Shah (UNSD) and Mr. Ivanov (UNSD) both presented on an Overview of the FDES and its implementation tools: Basic Set, Methodology Sheets, ESSAT; data collection methods; geographic information systems (GIS) and earth observation; compilation of statistics; and quality control and validation of environment statistics.

7. Ensuing questions were directed to UNSD to clarify whether there are recommended sources of data and data exchange formats, to which UNSD responded that currently the SDG database is the main source to be consulted, however the FDES structure is the one recommended for the country to organize its environment statistics. Mr. Joseph (Ministry of Environment) provided an extensive commentary on the key environmental issues, impacts and concerns, such as: mercury poisoning from fish consumption; engine oil disposed of in the sea which contains heavy metals that contaminate some food sources (e.g. sea urchins); and the lack of an organized practice of managing waste from electrical and electronic appliances, as well as biomedical waste. He noted that there was a strong need to set a system in place to manage and disseminate information about the above-mentioned issues and that a national compendium on environment statistics will also be beneficial for producing State of the Environment reports in Grenada.

Session 2: Environment statistics in Grenada

8. Ms. Tamika George (CSO) 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 environment 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). Then Ms. George presented an overview of the draft compendium of environment statistics, structured in ten chapters. She described some of the challenges and gaps encountered, as well as presented some best practices, e.g. the involvement of multi-stakeholders in the compilation and dissemination process in Suriname, that she recommended Grenada adopting.

9. Discussion following the presentation of the national situation went into more depth on what is well known and reported in the country e.g. exports and imports, certified activities etc., and emphasised that often locally generated hazardous waste, or localised pollutions are not known. Guidelines for environmental management exist, also standards where applicable, but they are often poorly enforced which results in local issues such as air and water pollution.

10. Ministry of Health disseminates information on issues related to the transmission of disease etc. but even this is not an easily accessible source of information. The Unit of Epidemiology is likely to have data on mercury poisoning etc. It is important to ensure that all relevant national data sources be contacted during the revision of the compendium and further development of the national statistical system. UNSD clarified that the main uses of the compendium were: firstly - to provide a quick reference to what is readily available data and information; and secondly - to help the collaborating partners establish what are the data gaps and what topics that need to be further developed.

Session 3: Sustainable Development Goals and environment statistics

11. Mr. Ivanov (UNSD) presented an overview of data reporting requirements for MEAs and SDGs in the CARICOM region, with examples of data for Grenada. Strong data discrepancies between national and international sources of the same data were shown. 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.

Session 4: Technical training on priority topics

Session 4.1: Environmental Conditions (FDES Component 1): Land Cover

12. Mr. Trevor Thompson (Ministry of Agriculture) introduced the national experience on land use and land cover statistics. He explained that Grenada was the first country to use GIS in the Caribbean region and presented multiple applications, including physical land suitability for different forest species and rain-fed crops, sea level rise impact on coastal areas, detailed land use maps from 1982, 2000 and 2010 among others. Very high-resolution imagery (LIDAR) was acquired and applied for mapping of forest communities, land slide risks, etc. The applications of land cover and land use data are numerous: e.g. in spatial planning (agriculture, forestry, land use, urban developments, and coastal zone management), recovery from disasters, consultancies and research. Services are provided in a customized way following requests by clients. Despite the availability of such detailed data products, certain deficiencies remain for example Grenada does

not yet have a geo referenced national cadastre. Other challenges relate to the high cost of GIS software licencing.

13. Land-use and land-cover statistics in the FDES were introduced by Mr. Ivanov (UNSD). Geospatial information adds value and utility to environment statistics. 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. A Group work session followed the above presentations in which participants completed an exercise on computing land cover validation metrics.

14. Following discussions dwelled further on the use of land statistics for multiple applications. A priority action was identified – the Land Use Division, in collaboration with the CSO, to work on delimiting village/commune's boundaries and names, as this is a basic data input, needed for many statistics, including in the social and economic domains.

Session 4.2: Environmental Conditions (FDES Component 1): Ecosystems and Biodiversity

15. National experience on ecosystems and biodiversity was presented by Ms. St. Louis (Environment Division). The experience of this division was presented in several portfolios, including climate change, biodiversity, coastal zones, environmental protection and MEAs. A list of impacts on different ecosystems was explained, with main drivers for biodiversity loss being habitat change, invasive species, climate change, pollution/waste, and direct exploitation. It was emphasized that the impact of climate change is expected to increase for all ecosystems listed. State of Environment Reports are periodically published which should be closely linked to the compendia on environment statistics. Coastal and bathymetric mapping were done using LIDAR (with UK's support). Coasts/beach changes (accretion and erosion) were assessed following a moratorium on sand removal. Biennial reports to UNFCCC have been submitted. In addition, modelling work was completed to assess expected climate changes, which were used to assist planning and management activities, such as drenches/run-off infrastructures. Climate change impacts on human health are one of the most important issues for policy making in the country. A National Ecosystems Assessment is being planned, following UK's example and good practices from other countries.

16. The methodology sheet on ecosystems and biodiversity statistics was presented by Mr. Ivanov (UNSD). These types of statistics which are used for policy purposes relate to the Aichi Biodiversity Targets and the SDGs 6, 14 and 15 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.

17. Discussions following the above presentations clarified that a National list on threatened species (Red List) will be developed building on the figures from IUCN data. Deposition of solid waste on beaches happens because of sea/ocean circulation patterns which are well known, but the exact amounts of litter have not been estimated. The importance of ecosystem services was also reiterated, for example specifying that sand organisms maintain the quality of beaches.

Session 4.3: Environmental Conditions (FDES Component 1 and 2, SDG 15): Forest Statistics

18. National experience on forest data and forestry management was presented by Mr. Anthony Jeremiah, Forestry and National Parks Department (FNPD). Data reporting for FAO's Forest Resources Assessment (FRA) was explained. Currently, official forest figures are only released in the context of FRA, which contains areas of forest types, but the report is not yet complete (it should be completed next year). Data on biomass/carbon monitoring is not yet available, also, the exact forest extents (about 39%) cannot be readily verified since much of the forests are in private

properties. Forest changes related to developments have not been assessed and quantified yet. Much of the on-going work on forest data is dependent on external resources. Furthermore, it was emphasised that the workshop sets opportunities to strengthen the work on forest statistics and that a platform to share data and information should be established.

19. Forest statistics in the FDES were presented by Mr. Ivanov (UNSD). The presentation covered key messages and figures emphasising the importance of forests, polices and SDGs that require forest data and statistical guidance contained in the Manual on the Basic Set of Environment Statistics - methodology sheet on forests. International sources of forest data have limited applicability in Grenada because of spatial resolution and other issues, however the global deforestation maps of Hansen et al. (2013) might be applicable and were briefly discussed.

20. Discussions following the presentations on forest considered the importance of ecosystem services (e.g. forest products, carbon sequestration, firewood, water regulation) since Grenada does not practice commercial forest harvesting for timber (only selective harvesting, most of the forests are protected). Data on the above 'alternative' forest uses has not been generated yet and was underlined as very needed. Grenada recently obtained funding from UNEP-WCMC to quantify ecosystem services (including their economic values), for which examples from other countries will be reviewed and followed (e.g. Costa Rica). Further work will be done on forest inventories, for which ground data needs to be collected.

Session 4.4: Environmental Resources (FDES Component 2, SDG 6): Water Resources

21. A presentation on Grenada's water resources was delivered by Mr. Thompson (Ministry of Agriculture). While there is generally no shortage of water (because of abundant precipitation), its storage is an issue because of limited capacity (defined by small spaces, permeable bedrock, mountain slopes). With climate change more aggravating issues are expected, e.g. more variation of precipitation, localised floods, changes in dry season duration, etc. Land management impacts, including expansion of impervious surfaces, affects water retention and its quality. The National Water and Sewerage Authority (NAWASA) is the island's lone water utility provider. A new water supply treatment plant was built recently. Surface water is the major source of fresh water for human consumption and agriculture, and almost the entire population has access to domestic water supply.

22. The 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. 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 presented. The structure of the methodology sheet on water resources statistics was also explained including references to SDGs, and the water section of the UNSD/UNEP Questionnaire on Environment Statistics.

23. A group work session followed the above presentations. It focused on the water-related sections of the ESSAT Part 2. Discussions following the presentations and the group work considered the following points: salt-water intrusion into ground-water sources is of concern. Major water quality issues arise because of the two wastewater collection systems which discharge untreated wastewater into the sea. Regular monitoring is taking place to ensure that good public health conditions are maintained in bathing waters, but nevertheless there are major concerns of unknown effects. There are plans for building wastewater treatment plants at the two discharge locations in the near future. Certain discrepancies on figures of water consumption were identified and discussed, which was stressed as a key objective of official environment statistics. Strong concerns were also voiced about the presence of 'dead zones' in rivers because of massive

pollution loads. In this regard, it was suggested to organize a platform where citizens would be able to report evidence of such events in the future.

24. Participants found the ESSAT to be a very effective tool in assessing, inter alia, the relevance, priority and availability of the statistics, in this case water statistics. It was also noted that the ESSAT will be applied to other topics of the FDES to provide a more complete overview of the situation in the country. Some practical suggestions for improving the applicability of the ESSAT were also presented.

Session 4.5: Residuals (FDES Component 3, SDG 11 and 12) Waste statistics

25. National experience on waste data and waste management was presented by Mr. Gilbert (Grenada Solid Waste Management Authority, GSWMA). A National Act was passed to establish a solid waste management system in Grenada which formed the management authority and its operation. Detailed data and statistics on waste were explained, including some discrepancy issues within the domestic figures, and larger discrepancies with figures from international organizations (World Bank). The latter issue needs to be followed up and corrected because it depicts Grenada as one of the highest waste generation-per-person countries in the world. GSWMA will be progressing its work into 'Integrated solid waste management' and the notion of the circular economy, with an emphasis to reduce, reuse, recycle, convert waste to energy and lastly landfill. The plans are to increase recycling rates of plastics, etc. to at least 30%. Currently issues related to illegal waste dumping were reported (because of early landfill closure, among other reasons). Waste from ships is accounted as commercial waste, when deposited on the landfill.

26. The UNSD training module on waste statistics was presented by Ms. Shah (UNSD). She described Component 3 of the FDES that 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 on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. She also noted that the 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. It was mentioned that release of chemical substances refers to chemical fertilisers and pesticides as well as the environmental effects. Ms. Shah also touched on the 'circular economy' concept which several countries are trying to implement as a move away from the 'cradle to grave' principle. Finally, the presentation briefly described the methodology sheet on waste and the waste section of the UNSD/UNEP Environment Questionnaire on Environment Statistics.

27. Discussions following the presentations further clarified that waste composition is determined by sampling on tracks and on the landfill. Further policy and waste management issues were outlined, in relation to the fact the Grenada is not a signatory to the Basel Convention, which is needed to trigger the establishment of hazardous waste management and resolve concerns of poisoning with heavy metals.

Session 5: Climate Change and Disasters Statistics

28. 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. UNSD plans to conduct a Pilot Survey and the Global Consultation of the climate change statistics and indicators in 2020.

29. Regional work on Climate Change Statistics was briefly explained by Mr. Redhead (UNFCCC-RCC). This work is taking place in the context of setting up Monitoring Verification and Reporting (MVR) mechanisms in the CARICOM countries. Funding and technical support are provided by UNDP, UNEP and GIZ. The work started with establishment of institutional arrangements, for which MoUs were signed. Scoping visits were carried out to assess the initial situation on preparedness for reporting to UNFCCC. Training was provided, including guidance on the IPCC GHG inventory methods. The need to collaborate with appropriate institutions was emphasised.

Statistics on disasters (FDES Component 4)

30. 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). Ms. Shah also gave an overview of Component 4 and Sub-component 6.3, Topics 6.3.1 and 6.3.2 of the FDES as they relate to disaster statistics. Ms. Shah informed the workshop of other activities in UNSD in the form of the Strategic Framework on Geospatial information and Services for Disasters organised under the UN-GGIM, as well as work undertaken in the area of disaster statistics by several of the United Nations regional commissions.

31. National work on disaster-related statistics and disaster-responses management was presented by Ms. Bonaparte (NADMA). First, some definitions were introduced, e.g. a disaster has to be declared officially to be defined as such, emergencies are declared separately, as well as other events, such as floods. The impacts of hurricane Ivan in 2004 were presented in detail as well as the following damage assessments. The total damage is estimated to be 2.4 billion EC$, that is more than twice the current value of GDP. Direct damage accounts for 89% while indirect damage

accounts for 11%. Indirect damages refer to damages that are a result of the interruption to the flows of goods and services and income.

32. The following discussion and comments pointed that an 'emergency' is declared when the country has capacity to respond and recover on its own, while disasters are declared when external assistance is required. Some figures presenting the impacts, for example on forests, were seen as unrealistic by specialist participants. The way these impacts were assessed need to be clarified.

33. Further discussions on climate change indicators and statistics took place in work groups addressing the list of preliminary indicators prepared by UNSD. Feedback was provided by the groups which included some specific recommendations to further detail the definitions of the proposed indicators, for example – green areas to be assessed as percent from total area, to include additional indicators on food security – e.g. access and affordability of food, stability of the food supply processes. Ecosystem services from forests were also singled as an important indicator for the country. In addition, global concentrations of GHGs were mentioned as not applicable at national level (but still relevant in the global set as background indicators).

Session 6: Other cross-cutting topics

34. Coastal and ocean statistics were presented by Mr. Brizan (CSO). 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. The CSO is currently developing supply and use tables (SUTs) with the assistance of Statistics Canada but realizes that these SUTs can take a year to develop. Once detailed SUTs are developed and when environment statistics has been firmly grounded, the CSO plans to develop satellite accounts on ocean's contribution to GDP.

35. Discussion following the presentation raised issues about waste from tourism/yachts and uncontrolled developments which result in figures (mostly from external sources) which differ from some of the afore-mentioned. The need for metadata examination was reiterated, since sometimes these differences result from differing definitions. The gaps in legislation were also discussed, since Grenada has not ratified all the relevant MEAs. It was also recommended that the CSO, together with the Ministry of Environment, deliver a presentation to the Senior Management Board on the importance of production and coordination of environment and climate change statistics.

Session 7: Revision of National compendium

Review of datasets and topics for national compendium

36. The statistics currently included in the draft compendium were briefly shown and explained. The participants were invited to review them, verify and correct the sections corresponding to their field of expertise and supply additional inputs where gaps are identified.

Work plan for completing the draft national compendium

37. A work plan for completing the compendium was presented by Mr. Brizan (CSO). The following actions were suggested:

Activities	Dates/ Time line
Establishment of technical Sub-committee	November 14, 2019
Email to relevant stakeholders on data needed to update and expand the compendium and ESSAT	November 19, 2019
Stakeholders submit their available data set and Completed ESSAT	November 30, 2019
Prepare and present Cabinet Submission to establish National interagency committee for Environment and Climate change Statistics to establish a Cabinet appointed committee. TOR to be attached and approved by Cabinet	November 30, 2019
1st Meeting with Technical Sub-committee to review data submitted and discuss completion of the ESSAT.	By December 15, 2019
Compendium to be updated	December 31, 2019
1st Meeting of National Committee	January 2020
Completed ESSAT by all relevant stakeholders	January 30, 2020
Finalise draft report	February 15, 2020
Publish Compendium	February 28, 2020
Meeting of technical Sub-committee	Monthly meetings
Meeting of National Committee	Bi-annual meetings

Session 8: Way forward

Recommendations from the Workshop

1. Establish an Inter-agency Committee and a Technical Sub-committee on Environment and Climate Change Statistics.
2. Develop a National Action Plan for environment statistics.
3. Include environmental questions in the 2020 round of Population and Housing Census / other household surveys and/or conduct specialised Environment Surveys.
4. Encourage stakeholders to supply or validate information for the draft compendium, in particular:
    a. The Ministry of Agriculture and Lands to look at collecting fertilizer and pesticide use data.
    b. Environment division to supply information on biodiversity
    c. Ministry of Health to provide health statistics including Environmental health and epidemiology.
    d. NADMA to provide and update disaster-related statistics and information
    e. NAWASA to provide water supply and use data and Land use division of the Ministry of Agriculture to provide data on water resources
    f. GSWMA to provide data on Waste generation and management.
5. Central Statistical Office to produce and publish future compendium in line with FDES every two years.
6. Central Statistical Office to complete the Environment Statistics Self-Assessment Tool (ESSAT) with the cooperation of all relevant stakeholders.
7. Central Statistical Office to complete the UNSD/UNEP Questionnaire on Environment Statistics in collaboration with the relevant stakeholders.

8. All stakeholders, on completion of the ESSAT, to conduct a needs and capacity assessment in collaboration with the Central Statistical Office, given that several key institutions lack resources to carry out primary data collection. Major concerns are in the Ministry of Climate Resilience, the Environment, Forestry, Fisheries and Disaster Management:
    - The Environment Division has no one dedicated for the compilation of environmental data
    - Forestry Division lacks human resource to complete forest inventories.
9. Central Statistical Office, in collaboration with the Technical Committee, to develop of a system for stakeholders to collect and share data that can inform policy geared towards greater protection of the environment and to adapt to the impact of climate change.
10. Institutions and individuals engaged in conducting research or studies that produce environmental data for Grenada to communicate this information to the Central Statistical Office and the Inter-agency Committee.
11. Institutions are encouraged to use the latest official statistics from the Central Statistical Office e.g. Population Data, Employment data, GDP, etc., in conducting research and analysis, to avoid misreporting.
12. NAWASA partner with Windref lab, SGU, Ministry of Health to establish base line data as it relates to all aspects of water quality and to take an active part in testing the chemical quality of marine water.
13. Ministry of Environment, in collaboration with the Central Statistical Office, to look at best practices (Costa Rica) to calculate ecosystems services contribution to the economy.
14. GSWMA to look at extending the operating hours at the land fill to avoid dumping outside of the land fill, which will result in total waste not being accounted for.
15. Various data producers, such as Met. Office, Land use division and NAWASA to coordinate and share precipitation data to ensure harmonization of the data.
16. The Inter-agency Committee and Sub-committee to strengthen the centralization and dissemination of environmental information and statistics.
17. Data producers are encouraged to provide metadata along with the data to any users of the data.
18. Central Statistical Office to participate in UNSD pilot survey and global consultation on Climate Change Statistics, in collaboration with all relevant stakeholders.
19. Central Statistical Office should become a member of both the National Committee on Climate Change and the SDG Committee as well as the Committee for the National Sustainable Development Plan.
20. The Government of Grenada is encouraged to become a signatory to and ratify the various Multilateral Environmental Agreements (MEAs) that they have not signed on to or ratified as yet, e.g. Basel, Rotterdam and Stockholm Conventions, and to complete MARPOL, to ensure the timely compilation of related statistics.
21. Ministry of Environment, in collaboration with the Central Statistical Office, to make a presentation to the Cabinet and the Senior Management Board on the importance of production and coordination of environment and climate change statistics and the need to establish and support the Inter-agency Committee.
22. Central Statistical Office, in collaboration with the Inland Revenue Division, to support Forestry Division in data collection.

Annex I: List of Participants

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Annex II: Agenda

Tuesday, 12 November 2019

08:00-08:30 **Registration of participants**

08:30-09:30 **Opening of the workshop**

- Central Statistical Office
- Ministry of Climate Resilience, the Environment, Forestry, Fisheries, Disaster Management & Information
- United Nations Statistics Division

09:30-10:15 **Objectives and organization of the workshop**

- Introduction of participants/institutions (40 min)
- Presentation and adoption of agenda

10:15-10:30 *Coffee break*

10:30-12:00 **Session 1: Introduction to environment statistics**

- Overview of FDES and Implementation tools: Basic Set, Methodology sheets, ESSAT, National Action Plan (UNSD, 20 min)
- Data collection methods (UNSD, 10 min)
- GIS and Earth observation (UNSD, 10 min)
- Compilation of statistics (UNSD, 10 min)
- Quality control and validation of environment statistics (UNSD, 10 min)
- Discussion (30 min)

12:00-13:00 *Lunch*

13:00-14:30 **Session 2: Environment statistics in Grenada**

- Overview of previous activities on environment statistics (CSO, 20 min)
- Overview of draft on Environment Statistics Compendium (CSO, 20 min)
- Discussion on compendium data validation with the relevant institutions (30 min)

14:30-14:45 *Coffee break*

14:45-15:45 **Session 3: Sustainable Development Goals and environment statistics**

- Environment Statistics for monitoring the Sustainable Development Goals (SDGs) (UNSD, 15 min)
- Examples of Environment and SDG statistics from global sources (UNSD, 10 min)
- Discussion (15 min)

Session 4: Technical training on priority topics

15:45-16:30 **Session 4.1: Environmental Conditions (FDES Component 1): Land Cover**

- National experience (Grenada, 20 min)
- Land cover Land use statistics training module (UNSD, 20 min)
- Group work (45 min)
- Discussion (20 min)

Wednesday, 13 November 2019

08:30-09:30 **Session 4.2: Environmental Conditions (FDES Component 1): Ecosystems and Biodiversity**

- National experience (Grenada, 20 min)
- Ecosystems and biodiversity statistics training module (UNSD, 20 min)
- Discussion (20 min)

9:30-10:15 **Session 4.3: Environmental Conditions (FDES Component 1 and 2, SDG 15): Forest Statistics**

- National experience (Grenada, 20 min)
- Forest statistics training module (UNSD, 20 min)
- Discussion (20 min)

10:15-10:30 Coffee break

10:30-12:30 **Session 4.4: Environmental Resources (FDES Component 2, SDG 6): Water Resources**

- National experience (Grenada, 20 min)
- Water statistics training module (UNSD, 20 min)
- Group work (60 min)

12:30-13:30 Lunch

13:30-14:30 **Session 4.4: Environmental Resources (FDES Component 2, SDG 6): Water Resources (cont.)**

- Group work (cont.) (30 min)
- Discussion (30 min)

14:30-14:45 Coffee break

14:45-16:30 **Session 4.5: Residuals (FDES Component 3, SDG 11 and 12) Waste statistics**

- National experience (Grenada, 20 min)
- Waste statistics training module (UNSD, 20 min)
- Group work (45 min)
- Discussion (20 min)

Thursday, 14 November 2019

08:30-09:30 **Session 5: Climate Change and Disasters Statistics**

- Climate Change Statistics and the FDES (UNSD, 15 mins)
- Measurement, Reporting and Verification (MRV) (Caribbean Cooperative MRV Hub, 15 min)
- Statistics on disasters (FDES Component 4) (UNSD, 15 min)
- Discussion (15 min)

09:30-11:15 **Technical training on climate change statistics (cross-cutting FDES theme, SDG 13):**

- National experience (Grenada, 20 min)
- Exercise on Climate Change Statistics (UNSD, 20 min)
- Group work (45 min)
- Discussion (20 min)

11:15-11:30 Coffee break

11:30-12:30 **Session 6: Other cross-cutting topics**

- Coastal and ocean statistics (CSO, 30 min)

12:30-13:30 Lunch

13:30-14:30 **Session 7: Revision of national compendium**

- Review of datasets and topics for national compendium (CSO and participants, 30 min)
- Work plan for completing the draft national compendium (CSO and participants, 30 min)

14:30-14:45 Coffee break

14:45-16:15 **Session 8: Way forward**

- Implementation of ESSAT
- Development of National Action Plan (NAP)
- Establishment of Inter-agency Committee on Environment Statistics

16:15-16:30 Evaluation
Closing remarks