



**WORKSHOP ON ENVIRONMENT STATISTICS IN SUPPORT
OF THE IMPLEMENTATION OF THE FRAMEWORK FOR THE
DEVELOPMENT OF ENVIRONMENT STATISTICS 2013**

**CALODYNE, MAURITIUS
26-29 JANUARY 2015**

Final Report

**United Nations Statistics Division
in collaboration with the
Common Market for Eastern and Southern Africa**

Background and objectives of the Workshop

1. The United Nations Statistics Division (UNSD), in collaboration with the Common Market for Eastern and Southern Africa (COMESA), organised a Workshop on Environment Statistics in support of the implementation of the Framework for the Development of Environment Statistics (FDES 2013). The Workshop was held in Calodyne, Mauritius from 26 to 29 January 2015, with hosting and on-ground support provided by UNDP and Statistics Mauritius. The background to organizing this Workshop on the implementation of the FDES 2013 was that the United Nations Statistical Commission, at its forty-fourth session in 2013, endorsed the revised FDES 2013 as the framework for strengthening environment statistics programmes in countries. The Commission also recognized the FDES 2013 as a useful tool in the context of sustainable development goals and the post-2015 development agenda. The Workshop also discussed a draft set of environmental indicators for the COMESA region and the development of a regional programme on environment statistics and implementation of the FDES 2013 in the COMESA member states. The key objectives of the Workshop were to:

- a. build national capacities for the implementation of the FDES 2013; and
- b. to provide statisticians and experts from ministries of environment (or equivalent institutions) with detailed knowledge and understanding of contemporary approaches to environment statistics, thus allowing them to identify gaps and deficiencies in environmental data, and contribute to the production of regular, accurate and reliable environment statistics.

2. The Workshop was attended by some 45 participants from National Statistical Offices (NSOs) and Ministries of Environment (or equivalents) of Comoros, Djibouti, Egypt, Eritrea, Ethiopia, Madagascar, Malawi, Mauritius, Seychelles, Sudan, Swaziland, Zambia and Zimbabwe. In the case of the host country, Mauritius, the NSO as well as several national level ministries/departments were all represented. Also in attendance were the following regional/international organizations: the United Nations Development Programme (UNDP), the Indian Ocean Commission (IOC).

3. The list of participants is attached as Annex 1.

Opening session

4. In her opening address, Ms. Li Fa Cheung Kai Suet, Director, Statistics Mauritius welcomed all participants to the Workshop. She noted that environment statistics are newer and less developed than other statistics and that there is an increased demand for environment statistics, in part due to continued degradation of the environment. In light of the Earth Summit, the Kyoto Protocol, the Millennium Development Goals and the Rio+20 United Nations Conference on Sustainable Development, she pointed out the need to build capacity for the sustained production of accurate and reliable environment statistics which are deeply needed by policy makers.

5. Ms. Li Fa Cheung Kai Suet thanked UNSD and COMESA for choosing Mauritius as a venue and for bringing together the NSOs and Ministries of Environment from the countries. She further mentioned Mauritius' awareness of the importance of the environment, and that Mauritius is a small country with limited resources. Statistics Mauritius started compiling environment statistics in 1994, and first implemented the FDES 1984 in 2000, and as such, is most interested in implementing the FDES 2013.

6. In her opening address, Ms. Reena Shah, Chief, Environment Statistics Section, UNSD thanked COMESA for their collaboration as well the supporting institutions, Statistics Mauritius and UNDP Mauritius. Ms. Shah noted that monitoring and measurement of progress towards environmental sustainability is weak due to the insufficient production of environmental

statistics and indicators. She explained that the implementation of the FDES 2013 will help countries address the increasing demand for environmental information in support of integrated policies in the follow-up to Rio+20, as outlined in the outcome document “The Future We Want”, and to the post-2015 development agenda through the strengthening of environmental statistics and indicators.

7. Ms. Shah commented that since the FDES 2013 is flexible so as to accommodate all countries, regardless of their level of statistical development, COMESA member states were viewed as being very suitable recipients to this Workshop. Ms. Shah also noted that strengthening national statistical systems is a crucial component of environment statistics, where the data come from a variety of different sources, and that to improve monitoring, it is imperative to bring together the various sectors in a unified and coordinated statistical system. Countries should be encouraged to establish robust and coherent national strategies for their data needs on environment statistics.

8. In his opening address, Mr. Themba Munalula, Head – Statistics Unit, COMESA, welcomed everyone and thanked UNSD for conducting the Workshop and Statistics Mauritius for hosting the Workshop. He remarked on the recommendation of the COMESA Committee on Statistical Matters in which the 2014 COMESA Council of Ministers approved a decision for its member states to adopt a Roadmap for the Implementation of the FDES 2013.

9. Mr. Munalula emphasized that the success of this project lies with the work to be done at the member state level. He made it clear that the success in the compilation of environment statistics is dependent on how stakeholders are organized as well as the articulated leadership of the NSOs and Ministries of Environment which are all critical to the success of this project.

Adoption of the agenda

10. The following agenda items were adopted:

- a. Session 1: Need for and use of environmental statistics and indicators;
- b. Session 2: Overview of environment statistics;
- c. Session 3: The FDES and the Basic/Core Sets of Environment Statistics (FDES Chapters 2 and 4);
- d. Session 4: National presentations on experience with the FDES;
- e. Session 5: FDES, Component 1: Environmental Conditions and Quality;
- f. Session 6: FDES, Component 2: Environmental Resources and their Use;
- g. Session 7: FDES, Component 3: Residuals;
- h. Session 8: FDES, Component 4: Extreme Events and Disasters;
- i. Session 9: FDES, Component 5: Human Settlements and Environmental Health;
- j. Session 10: FDES Component 6: Environment Protection, Management and Engagement;
- k. Session 11: Institutional aspects of environment statistics; and
- l. Session 12: Toward a Regional Programme of Environment Statistics.

11. The discussions were organised in both plenary and working group sessions. The agenda is attached as Annex 2.

12. The Workshop’s discussions were based on presentations prepared by various participants. Furthermore, participants were divided into four groups. When applying the Environment Statistics Self-Assessment Tool (ESSAT) to each FDES component, groups had opportunity to present their experience and feedback to plenary. The four groups are shown in Annex 3.

13. All documentation and presentations used in the Workshop are available and can be downloaded at: http://unstats.un.org/unsd/environment/unsd_MauritiusWorkshop.htm

OUTCOME OF DELIBERATIONS

Session 1: Need for and use of environmental statistics and indicators

14. In this session, six presentations were made on: National needs for environment statistics and indicators (Mauritius); Selected application of statistics to support policy planning for resilience in the Indian Ocean region (IOC); Regional activities in environment statistics (COMESA); International requirements for environmental statistics and indicators (UNSD); Using statistics to make the case for a Green Economy Transition (UNDP); and A coherent framework of indicators for environmental monitoring and evaluation in Mauritius (UNDP).

15. Ms. Nisha Devi Manic (Mauritius) made a presentation on the National needs for environmental statistics and indicators – The Case of Mauritius. Her presentation focussed on major environment data producers, the need for environment statistics and indicators in Mauritius, and gaps and challenges.

16. Ms. Devika Balgobin and Mr. Nourudeen Jaffar (Statistics Mauritius), on behalf of the IOC, presented on Selected application of statistics to support policy planning for resilience in the Indian Ocean region. Their presentation included information regarding indicators on vulnerability and resilience, and the application of the Ecosystems Natural Capital Account in Mauritius.

17. Mr. Themba Munalula (COMESA) presented on Regional activities in environment statistics. His presentation included content on COMESA treaty provisions and the COMESA statistics strategy.

18. Ms. Reena Shah (UNSD) presented on International requirements for environmental statistics and indicators. Her presentation included information regarding follow up to global conferences, reporting on international conventions, as well as support of thematic/topical international data collections, including the biennial UNSD/UNEP Questionnaire on Environment Statistics.

19. Ms. Asha Poonyth-Seeworam of the United Nations Resident Coordinator's Office of Mauritius (UNRCO) made a presentation on Using statistics to make the case for a Green Economy Transition – the Partnership for Action on Green Economy's (PAGE – by UNEP) work in Mauritius. Her presentation included Green Economy indicators and targets for Mauritius, and challenges in gathering data on environmental statistics.

20. Ms. Asha Poonyth-Seeworam (UNRCO) on behalf of Mr. Satyajeet Ramchurn (UNDP) presented on A coherent framework of indicators for environmental monitoring and evaluation in Mauritius. This presentation contained information on the UNDP Reporting Structure and UNDP Mauritius' Country Programme 2013-2016.

Discussion:

21. Remark was made on the need for collaboration across different organisations such as a NSO, a Ministry of Environment and other national level line ministries as well as government bodies at state and municipal level. It was also recognised that in order to collect comprehensive environment statistics, there is invariably much data scattered across government and the private sector. As such, there is a need for regular communication between governmental ministries and institutions. Adding to the complication of the collection

process is the need to often collect primary data from a ministry or department, and in other cases, secondary aggregated data from another ministry or department.

22. The need for a solid legal framework as well as penalties or sanctions in order to compel private sector organisations to collaborate in the provision of environment statistics to government was also raised. Statistics Mauritius made the point that it operates within a legal act giving it the mandate for collection of data from stakeholders.

23. It was observed that monitoring, evaluation and measurement of progress in the environmental field is relatively weak, especially when compared to economic development and social development, the two other pillars of sustainable development.

24. The need for clear communication among international bodies such as UNSD, the Food and Agriculture Organization of the United Nations (FAO), the IOC, etc. was emphasized so as to avoid duplication in data collections. It was also noted that this Workshop was the first in this region for some time, and as such, it should help to identify which organisations are mandated to do what, and then help organisations identify ways to best collaborate. Wherever possible, it is much preferred to access data from its primary source in country rather than to compile estimates based on modelling.

25. As pertains to the collection of environment statistics by UNSD at the international level, the point was made that UNSD increasingly receives data directly from the NSO of a country, but that the NSO commonly works closely with the Ministry of Environment or equivalent institution. UNSD also noted that so far as concerns environmental statistics and indicators, it only publishes data on its website which has been agreed upon between UNSD and a country through an extensive validation process. Estimations, projections or anything similar are not compiled.

26. Questions were raised regarding how to disseminate environmental data. Discussion was had on using an NSO's website as a dissemination tool. Furthermore, Statistics Mauritius commented on their positive experience of linking publications on its website to other ministries' webpages such as those of the Ministry of Environment.

27. Comment was made on the variety of users of environment statistics and how it is a challenge to be able to provide macro-level indicators for some users (such as politicians), but detailed, well defined long-term time series for other users (such as academics).

Session 2: Overview of environment statistics

28. In this session, two presentations were made on: an overview of environment statistics – characteristics and challenges (UNSD); and the use of geospatial information systems (GIS) and remote sensing for environment statistics (Resource person).

29. Mr. Marcus Newbury (UNSD) delivered a presentation entitled overview of environment statistics – characteristics and challenges which corresponds to chapter 1 of the FDES 2013. He presented, inter alia, on the objective and scope of environment statistics as well as main uses and user groups of environment statistics.

30. Mr. Anand Sookun (Resource person) made a presentation on the use of GIS and remote sensing for environment statistics. Among other topics, his presentation included information on temporal and spatial considerations, GIS data and GIS tools.

Discussion:

31. It was noted that environmental indicators were used by policy makers as they were considered to be precise and simple, and provided summary information. It was also mentioned that the development and use of specialized environmental surveys was very important, as well as adding environmentally-related questions to existing censuses or surveys.

32. Comment was made on the need to consider the expensive costs associated with high-spatial and spectral resolution satellite data when using GIS to generate environment statistics. This is especially the case for Small Island Developing States (SIDS). The difference between active rather than passive sensors should also be taken into consideration during times of disaster as the optical sensors cannot penetrate cloud cover. The use of ground-truthing to complement GIS was also mentioned. The possibility of digitizing Google earth images, especially for small islands like Mauritius was also discussed, however several issues were raised against the idea. The potential use of GIS as a data source for land use and land cover analysis in liaison with a Ministry of Housing and Lands was also mentioned. The results obtained from remote sensing data have the following issues:

- a) under and overestimation of areas (the better the spatial resolution the better)
- b) the classification of habitats can only reach up to a percentage level of accuracy (normally 80%), thus hindering the results
- c) more and more, high resolution imageries are becoming more accessible and available for commercial use. However, if one wants to use satellite imageries to see trends, from the past, the types of imageries then were of lesser quality and resolution, and can affect the statistics
- d) free Landsat images cannot be used for smaller countries like Seychelles and Mauritius to generate statistics. With a pixel size of 15m to 30m there would be a lot of under and overestimations of areas.

33. Bearing the above points in mind, remote sensing and GIS should not be counted out as a means of getting environment statistics. If no in-situ measurements are available, remote sensing is the next best thing as it will provide close to a true result and give an idea of the status of the environment. It is ideal for far and inaccessible regions and countries with limited resources for displacement.

Session 3: The FDES and the Basic/Core Sets of Environment Statistics (FDES Chapters 2 and 4)

34. In this session, three presentations were made on: the conceptual foundation and the structure of the FDES (UNSD); The Basic and Core Sets of Environment Statistics (UNSD); and The Environment Statistics Self-Assessment Tool (ESSAT) (UNSD).

35. Ms. Reena Shah (UNSD) presented on the conceptual foundation and the structure of the FDES which corresponds to chapter 2 of the FDES. Her presentation included content on why a framework for environment statistics is needed, a description of the main concepts underlying the FDES, an overview of the overall structure of the FDES and its linkages to other frameworks and systems, as well as the revision and development process of the FDES.

36. Mr. Marcus Newbury (UNSD) presented on the basic and core sets of environment statistics which corresponds to chapter 4 of the FDES. His presentation included information on the description of the three tiers of the Basic Set of Environment Statistics, and an explanation of the Core Set of Environment Statistics.

37. Mr. Marcus Newbury (UNSD) presented on parts I and II of the Environment Statistics Self-Assessment Tool (ESSAT). His presentation included information on the Topic and Statistics Level Assessment of the ESSAT.

Session 4: National Presentations on experience with the FDES

38. In this session, two presentations were delivered on: FDES implementation in Mauritius (Statistics Mauritius); and on the use and application of the FDES at the national level (UNSD)].

39. Ms. Devika Balgobin (Statistics Mauritius) presented on FDES Implementation in Mauritius. She illustrated how Statistics Mauritius' experience had found starting with the Core Set of Environment Statistics (approximately 101 statistics) had been more manageable as a starting point rather than the entire Basic Set of Environment Statistics (approximately 456 statistics). She also described their future work which includes a workshop with all relevant stakeholders and the plans for their next digest of environment statistics.

40. Mr. Marcus Newbury (UNSD) presented on the use and application of the FDES at the national level with emphasis on the experiences of Australia, Botswana, Colombia, Ecuador, the Philippines, Qatar and Vietnam. He described the different approaches countries had taken in using the FDES and what they found the most useful in its application.

Discussion:

41. Praise was given to Statistics Mauritius for a wonderful presentation with data that provides a good picture of Mauritius. Discussion was had pertaining to energy sources, shifts toward use of renewables, land cover and protected areas in Mauritius. Some delegates observed similarities between their own countries' challenges in environment statistics and Mauritius'.

42. A point was also raised regarding the definitions used whereby the conditions are suitable for continental countries and not applicable for SIDS. This is commonly noticed when dealing with forestry and vegetation issues where area plays an important role.

Session 5: FDES, Component 1: Environmental Conditions and Quality

43. In this session, initially two presentations were delivered on: component 1, its sub-components and statistical topics (UNSD); and on land cover and land use in environment statistics (Resource person)]. Participants were then divided into four groups, and then two more presentations were delivered by two of the groups.

44. Ms. Reena Shah (UNSD) presented on component 1: Environmental Conditions and Quality, its sub-components and statistical topics. This presentation included the sub-components, 1.1: Physical Conditions; 1.2: Land Cover, Ecosystems and Biodiversity; and 1.3: Environmental Quality.

45. Mr. Anand Sookun (Resource person) presented on Land Cover and Land Use Statistics. Content of his presentation included land cover classifications, methodological guidance for countries, tools and software products.

46. Mr. Kundishora Mpandaguta (Zimbabwe) presented on group 3's experience applying the ESSAT to sub-components 1.1: Physical Conditions; and 1.2: Land Cover, Ecosystems and Biodiversity.

47. Ms. Zahra Abdillahi Ainan (Djibouti) presented on group 1's experience applying the ESSAT to sub-components 1.1: Physical Conditions; and 1.2: Land Cover, Ecosystems and Biodiversity.

Discussion:

48. Upon applying the ESSAT to component 1, comment was made that the ESSAT seems useful. Comment was expressed regarding the need for clear cross-reference between component 1 and component 2 for the case of some water-related statistics. Response to such comment was made that it is not necessarily the ESSAT where such cross-referencing may appear, but more appropriately, in the FDES text itself and in the Basic Set of Environment Statistics.

49. A compendium of definition of terms was requested, and colleagues expressed preference to apply the ESSAT at the individual statistic level, rather than at the topic level. Colleagues were referred to the *Selected Terms Used in the FDES* which appears toward the end of the FDES.

50. In applying the ESSAT with their home countries in mind, several colleagues acknowledged that, like Mauritius had found when it implemented the FDES, naturally there are some statistics which cannot be applied to their country (e.g. certain hydrographical characteristics for land-locked countries, occurrence of El Niño, La Niña, area affected by desertification, etc.).

51. For most countries, almost all statistics in component 1 were regarded as being of high priority for national data collection, and as being available within their country.

Session 6: FDES, Component 2: Environmental Resources and Their Use

52. In this session, initially one presentation was delivered on component 2, its sub-components and statistical topics (UNSD)]. Participants were then again divided into groups, and then two more presentations were delivered by two of the groups.

53. Ms. Reena Shah (UNSD) presented on component 2: Environmental Resources and Their Use, its sub-components and statistical topics. This presentation included the sub-components, 2.1: Mineral Resources; 2.2: Energy Resources; 2.3: Land; 2.4: Soil Resources; 2.5: Biological Resources; and 2.6: Water Resources.

54. Mr. Mehreteab Michael Yemane (Eritrea) presented on group 2's experience applying the ESSAT to sub-components 2.1: Mineral Resources; 2.2: Energy Resources; and 2.3: Land.

55. Ms. Belusile Mhlanga (Swaziland) presented on group 4's experience applying the ESSAT to sub-components 2.5: Biological Resources; and 2.6: Water Resources.

Discussion:

56. For most countries, most statistics in component 2 were regarded as being of high priority for national data collection, and as being available within their country. However, regarding some statistics in sub-component 2.1: Mineral Resources, and sub-component 2.2: Energy Resources, comment was made that there may be issues regarding confidentiality of data. Some countries regarded some statistics as being of low priority, however these were tier 3 statistics in the Basic Set of Environment Statistics (e.g., amount of pellets, hormones, colourants, etc. used in aquatic resources).

57. Similarly to component 1, some countries observed that some statistics cannot be applied to their country (e.g., statistics related to aquaculture).

58. Some colleagues requested clarification on the definition of, “organic farming” to which the FAO Inter-departmental Working Group on Organic Agriculture was suggested as a possible reference. UNSD also mentioned that forthcoming tools supporting the implementation of the FDES such as Manual on the Basic Set of Environment Statistics should be comprehensive in defining relevant terms (please refer to session 11 of this report).

59. In applying the ESSAT, some countries were able to begin to identify where data gaps exist (e.g., for some countries, statistics such as number of animals slaughtered, exports of livestock were regarded as being unavailable).

Session 7: FDES, Component 3: Residuals

60. In this session, initially two presentations were delivered on: component 3, its sub-components and statistical topics (UNSD); and on Climate Change and Greenhouse Gases (Resource person)]. Participants were again divided into groups, and then two more presentations were delivered by two of the groups.

61. Unlike for the preceding two Components, for Components 3 to 6, a modified ESSAT was applied where further questions were provided in the columns which the participants addressed during their group work.

62. Mr. Marcus Newbury (UNSD) presented on component 3: Residuals. This presentation included the sub-components, 3.1: Emissions to Air; 3.2: Generation and Management of Wastewater; 3.3: Generation and Management of Waste; and 3.4: Release of Chemical Substances.

63. Mr. Anand Sookun (Resource person) presented on Climate Change and Greenhouse Gases. Content of his presentation included understanding climate change, greenhouse gas inventories, scope of climate change-related statistics, and linkages to the FDES.

64. Mr. Houssama Athoumani (Comoros) presented on group 1’s experience applying the ESSAT to sub-components 3.1: Emissions to Air, and 3.2: Generation and Management of Wastewater.

65. Ms. Belusile Mhlanga (Swaziland) presented on group 4’s experience applying the ESSAT to sub-components 3.3: Generation and Management of Waste and 3.4: Release of Chemical Substances.

Discussion:

66. Praise was given to the modified ESSAT which served as an improved needs assessment tool. Colleagues expressed appreciation for the addition of columns at the individual statistic level. A request was made for one more additional column where comments could be added.

67. Regarding the design of the modified ESSAT, comment was made requesting clarity of some particular wording. Where the ESSAT uses the wording, “Primary/Secondary institution(s) responsible for collecting *statistic*”, it was recommended that the wording be modified so as to read, “Primary/Secondary institution(s) responsible for collecting *data*”.

68. Colleagues requested additional space or an additional column for comments on reliability of data in the modified ESSAT.

69. Expression was made of the similarity and potential for overlap between sub-components 2.5: Biological Resources, and 3.4: Application of Biochemicals. One suggestion was made that text be added so as to more easily distinguish between the two sub-components, or that some statistics from within sub-component 2.5 be omitted.

70. In the case of statistics within the topics 3.1.1: Emissions of greenhouse gases; and 3.1.2: Consumption of ozone depleting substances, colleagues commented that although statistics were of high relevance and priority, data were often unavailable due to insufficient data quality or a lack of accessibility.

71. It was also noted that in the case of topic 3.2.2: Collection and treatment of wastewater, the primary institution responsible for data collection was the wastewater authority, but that resource constraints existed in data availability for some countries.

72. Regarding sub-component 3.3: Generation and Management of Waste, colleagues observed that often local level authorities are the primary institution responsible for collecting the data. This was common to both waste generation and waste management. In cases where data collection from various institutions is necessary, some colleagues made the point that an in-person meeting between a NSO and primary institution responsible for collecting the data may yield better quality data. Furthermore, the organisation of stakeholder meetings to overcome issues where there are multiple data sources was also cited as being of great use. Mauritius observed that a Memorandum of Understanding (MoU) between institutions has been useful in this regard. Further comment was made of the use and importance of legal frameworks whereby institutions are encouraged to comply with NSO requests and provide data. During the discussion, the need for the NSO to inform stakeholders of the respect for data confidentiality was highlighted.

73. The importance of legal frameworks and the need for raised awareness among government ministries was further stressed. Some colleagues expressed that often an NSO can encounter issues when sourcing data from line ministries.

Session 8: FDES, Component 4: Extreme Events and Disasters

74. In this session, initially one presentation was delivered on component 4, its sub-components and statistical topics (UNSD). Participants were again divided into groups, and then one more presentation was delivered by one group.

75. Ms. Reena Shah (UNSD) presented on component 4: Extreme Events and Disasters. This presentation included the sub-components, 4.1: Natural Extreme Events and Disasters, and 4.2: Technological Disasters.

76. Mr. Mehreteab Michael Yemane (Eritrea) presented on group 2's experience applying the ESSAT to sub-component 4.2: Technological Disasters.

Discussion:

77. It was observed by colleagues that for sub-component 4.2: Technological disasters, most statistics are of a high priority and that there is availability of similar but not identical statistics. It was also observed that primary and secondary institutions responsible for collecting these statistics varied, and were not necessarily the NSO or Ministry of Environment. As per discussions with delegates from Egypt, an institution specialising in disaster response management and coordination of financial assistance can be of great use in compiling statistics in this component.

Session 9: FDES, Component 5: Human Settlements and Environmental Health

78. In this session, initially one presentation was delivered on component 5, its sub-components and statistical topics (UNSD). Participants were again divided into groups, and then one more presentation was delivered by one group.

79. Mr. Marcus Newbury (UNSD) presented on component 5: Human Settlements and Environmental Health. This presentation included the sub-components, 5.1: Human Settlements, and 5.2: Environmental Health.

80. Mr. Kundishora Mpandaguta (Zimbabwe) presented on group 3's experience applying the ESSAT to sub-component 5.1: Human Settlements.

Discussion:

81. Regarding sub-component 5.1: Human settlements, it was observed that statistics are of high relevance and priority, and are often collected by local authorities.

82. Suggestion was made that the statistic, Population served by municipal waste collection (which lies within topic 5.1.2: Access to selected basic services) be moved to tier 1 due to its extremely high relevance and importance.

83. It was requested that the category of measurement for statistics such as, Price of water, and Price of electricity be more clearly defined. For instance, "Value per cubic metre", and "Value per unit" were respectively suggested as alternatives to the currently used, "Value/currency".

84. The statistic, Population exposed to noise pollution in main cities, was regarded as being of low priority. This agrees with its allocation into tier 3 of the Basic Set of Environment Statistics.

85. Clarity of definitions for terms such as, "slum" and "informal settlement" were requested by some colleagues. UNSD referred colleagues to the Basic Set of Environment Statistics' Methodological Guidance column, and in particular to MDG indicators metadata for indicator 7.10.¹ Better clarity as to a definition of "informal settlement" was sought. More generally on the question of definitions, colleagues were referred to the *Selected Terms Used in the FDES* which appears toward the end of the FDES.

Session 10: FDES, Component 6: Environment Protection, Management and Engagement

86. In this session, initially one presentation was delivered on component 6, its sub-components and statistical topics (UNSD). Participants were then divided into four groups, and then four more presentations were delivered by all four groups.

87. Mr. Marcus Newbury (UNSD) presented on component 6: Environment Protection, Management and Engagement. This presentation included the sub-components, 6.1: Environment Protection and Resource Management Expenditure; 6.2: Environmental Governance and Regulation; 6.3: Extreme Event Preparedness and Disaster Management; and 6.4: Environmental Information and Awareness.

¹ United Nations (2008), Official List of MDG Indicators. Available at: <http://mdgs.un.org/unsd/mdg/Host.aspx?Content=indicators/officiallist.htm> (accessed 4 February 2015).

88. Mr. Houssama Athoumani (Comoros) presented on group 1's experience applying the ESSAT to sub-component 6.1: Environment Protection and Resource Management Expenditure.

89. Mr. Mehreteab Michael Yemane (Eritrea) presented on group 2's experience applying the ESSAT to sub-component 6.2: Environmental Governance and Regulation.

90. Mr. Kundishora Mpandaguta (Zimbabwe) presented on group 3's experience applying the ESSAT to sub-component 6.3: Extreme Event Preparedness and Disaster Management, and 6.4: Environmental Information and Awareness.

91. Ms. Belusile Mhlanga (Swaziland) presented on group 4's experience applying the ESSAT to sub-component 6.4: Environmental Information and Awareness.

Discussion:

92. It was noted that few countries conducted specialized surveys on environment statistics.

93. Clearer definitions were sought for "activities" and "programmes", in topic 6.4.4: Environmental engagement (a) 2. Number of people participating in pro-environmental activities; and 3. Number of pro-environmental programmes.

Session 11: Institutional Aspects of Environment Statistics

94. In this session, six presentations were delivered on: Putting the FDES to work: a blueprint for action (UNSD); Manual on the basic set of environment statistics (UNSD); Handbook for setting up/strengthening an environment statistics programme (UNSD); the Environment Statistics Self-Assessment Tool (ESSAT) Part III – institutional dimension (UNSD); and UNSD ESSAT and COMESA environmental statistics assessment 2014 (COMESA and Resource person)].

95. Mr. Marcus Newbury (UNSD) presented on Putting the FDES to work: a blueprint for action. His presentation outlined a strategy and the fundamental pillars required to put the FDES into action.

96. Ms. Reena Shah (UNSD) presented on the Manual on the basic set of environment statistics in which she referred to the methodological guidance, the inclusion of variable definitions and classifications, as well as discussed the manual's intended audience.

97. Ms. Reena Shah (UNSD) presented on the Handbook for setting up/strengthening an environment statistics programme. This presentation outlined the handbook's background, concept and draft outline as well as the need for inter-institutional collaboration to produce national environment statistics.

98. Mr. Marcus Newbury (UNSD) presented on the ESSAT part III - institutional dimension. This presentation introduced participants to the structure, design and intended purpose of the ESSAT part III.

99. Mr. Themba Munalula (COMESA) and Mr. Anand Sookun (Resource person) presented on UNSD ESSAT and COMESA environmental statistics assessment 2014. This presentation included the ESSAT and COMESA assessments mapping, a roadmap, and recommendations and conclusions.

Session 12: Toward a Regional Programme of Environment Statistics (COMESA)

100. In this session, one presentation was delivered on a Roadmap for the FDES 2013 (COMESA). A spreadsheet outlining a 2015-2017 time plan was also shown to participants.

101. Mr. Themba Munalula (COMESA) elaborated on the Roadmap for the FDES 2013. His presentation contained information on the availability of environment statistics in COMESA states as well as a detailed outline of the COMESA Environment Statistics Roadmap. He noted that the directors of the NSOs of COMESA had agreed to this Roadmap at their regional directors' meeting in Lusaka in November 2014.

102. The spreadsheet shown to participants outlined a 2015-2017 time plan for the production of environment statistics in the member states based upon the FDES.

Discussion:

103. The need and demand for environment statistics, as well as their wide regional appeal throughout Africa was noted. Further, the need for a cohesive national structure to compile environment statistics was discussed by participants, and it was pointed out that time and effort is best invested at the national level rather than the regional level.

Main Conclusions and the Way Forward from the Workshop

104. The Workshop was very well received by the participants who found it extremely useful in providing them with guidance towards the implementation of the FDES 2013 in their countries. Although some countries are at different stages in the area of environment statistics, and where basic issues such as data availability, data accessibility, adequate time series, as well as coordination of data collection and production exist at the national level, all participants expressed great interest in this field, and commended the opportunity to be brought together at the regional level to discuss and share a common platform in the implementation of the FDES 2013.

105. UNSD noted that this was the first sub-regional workshop in the southern and eastern African region in recent years. It was also mentioned that a workshop of a similar nature shall be organized by mid-2015 where COMESA member states that are part of the East African Community (EAC) will be invited as part of UNSD's Development Account project in strengthening environment statistics in the EAC member states. UNSD and COMESA will coordinate their respective activities to promote a harmonized approach and implementation of the FDES in the COMESA region.

106. The participants look forward to using the Environment Statistics Self-Assessment Tool (ESSAT) and to receiving further methodological guidance to establish or strengthen their work programmes in environment statistics. They also noted that the implementation of the FDES 2013 will help countries address the increasing demand for integrated information in support of integrated policies in the follow-up to Rio+20 and the Post-2015 Development Agenda through the strengthening of environmental statistics and indicators.

107. It is intended that within each country, as part of the first phase to a holistic process, the NSO and Ministry of Environment will identify all relevant stakeholders within their country pertinent to applying the FDES to the compilation of environment statistics. To this end, it is most appreciated if national NSOs and Ministries of Environment can inform other stakeholders within their country that a process of implementing the FDES with the support of UNSD and COMESA has begun.

108. By mid-April 2015, UNSD will share with all countries the finalized ESSAT which will then be ready for use. Appreciation from member states was expressed for the modified ESSAT version which could be used as a tool to make a self-assessment at the national level of, inter alia, the main environmental concerns, priorities, relevance, data availability, data sources, reporting requirements, etc. UNSD expressed its appreciation for the valuable feedback provided on the ESSAT by participants at this workshop.

109. Thereafter, COMESA plans for a national capacity building workshop to be held for each country in which both the FDES 2013 and the ESSAT will be applied. At each national level workshop, consultation among all relevant stakeholders shall be made and it will be made clear what each stakeholder's responsibility shall be. A key focus of each first national level workshop will be to make all stakeholders understand the process of implementing the FDES and its supporting tools. Stakeholders who have data should clearly understand what is required of them. Content of these national level workshops will in some respects be a repeat of what has been discussed at this regional Workshop, although discussion and presentations will be tailored to the national level.

110. Emphasis was stressed on the need for colleagues present at this regional Workshop to inform stakeholders in their countries so as to forewarn them that the implementation of the FDES in the compilation of environment statistics is coming soon.

111. After a national workshop has been held within a country, a data collection exercise shall commence. The NSO or Ministry of Environment will coordinate for this to take place. Within three to four months of the commencement of the data collection exercise, data validation shall be sought. Following this, procedures for an initial national level publication to be made shall be undertaken.

112. From this point, moving toward the finalisation of the first-phase of the larger process, a national level dissemination workshop is desired, followed by another regional workshop based on data collection, assessment and feedback. At this regional workshop, a full review of work undertaken to this point shall be sought.

113. Preferably during 2016, it is planned for countries to progress to a 2nd phase in the compilation of environment statistics in the application of the FDES and its supporting tools such as the ESSAT. In this 2nd phase, ideally countries will identify data gaps which were realised during phase 1. Very specific capacity building for data collection required during phase 2 can at this point be undertaken.

114. It is planned that by 2017, countries will be in a position to consolidate their data collections and disseminations of environment statistics.

Annex 1

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Annex 2

Workshop on Environment Statistics in support of the implementation of the Framework for the Development of Environment Statistics (FDES 2013)

Calodyne, Mauritius
26-29 January 2015

Final agenda

Monday, 26 January 2015

08:00-09:00 Registration of participants

09:00-9:30 Opening of the workshop

- Statistics Mauritius
- United Nations Statistics Division (UNSD)
- Common Market for Eastern and Southern Africa (COMESA)

9:30-9:45 Objectives and organization of the workshop

- Presentation and adoption of agenda
- Introduction of participants

9:45-12:00 Session 1: Need for and use of environmental statistics and indicators

- National needs for environment statistics and indicators (Statistics Mauritius)
- Regional needs
 - Selected application of statistics to support policy planning for resilience in the Indian Ocean region (Indian Ocean Commission)
 - Regional activities in environment statistics (COMESA)
- International requirements for environmental statistics and indicators (UNSD)
- Using statistics to make the case for a green economy transition - the Partnership for Action on Green Economy's work in Mauritius (UNDP – Mauritius)
- A Coherent Framework of Indicators for Environmental Monitoring and Evaluation in Mauritius (UNDP – Mauritius)

10:00-10:20 Coffee break

12:00-13:00 Lunch

13:00-14:15 Session 2: Overview of environment statistics

- Overview of environment statistics – characteristics and challenges. FDES Chapter 1 (UNSD)
- The use of GIS and remote sensing for environment statistics (Resource person)
- Discussion

14:15-15:45 Session 3: The FDES and the Basic/Core Sets of Environment Statistics (FDES Chapters 2 and 4) (UNSD)

- Conceptual Foundation and Structure of the FDES. FDES Chapter 2 (UNSD)
- The Basic and the Core Sets of Environment Statistics. FDES Chapter 4 (UNSD)
- The Environment Statistics Self-Assessment Tool (ESSAT) (UNSD)

15:00-15:20 Coffee break

15:45-16:30 Session 4: National presentations on experience with the FDES

- FDES implementation in Mauritius (Statistics Mauritius)
- The use and application of the FDES at the national level (UNSD)

Tuesday, 27 January 2015

08:30-9:45 Session 5: FDES, Component 1: Environmental Conditions and Quality

- Component 1 and its sub-components and statistical topics (UNSD)
- Land cover and land use in environment statistics (Resource person)
- Discussion

9:45-11:30 Group work on Component 1 using the ESSAT

10:00-10:20 Coffee break

11:30-12:00 Presentation back to plenary

12:00-13:00 Lunch

13:00-14:15 Session 6: FDES, Component 2: Environmental Resources and their Use

- Component 2 and its sub-components and statistical topics (UNSD)
- Discussion

14:15-15:45 Group work on Component 2 using the ESSAT

15:00-15:20 Coffee break

15:45-16:30 Presentation back to plenary

08:30-9:30 Session 7: FDES Component 3: Residuals

- Component 3 and its sub-components and statistical topics (UNSD)
- Climate change and greenhouse gases (Resource person)
- Discussion

9:30-10:10 Group work on Component 3 using the ESSAT

10:10-10:30 Coffee break

10:30-11:15 Presentation back to plenary

11:15-12:00 Session 8: FDES Component 4: Extreme Events and Disasters

- Component 4 and its sub-components and statistical topics (UNSD)
- Discussion

12:00-13:00 Lunch

13:00-13:45 Group work on Component 4 using the ESSAT

13:45-14:30 Presentation back to plenary

14:30-15:30 Session 9: FDES Component 5: Human Settlements and Environmental Health

- Component 5 and its sub-components and statistical topics (UNSD)
- Discussion

15:00-15:20 Coffee break

15:30-16:30 Group work on Component 5 using the ESSAT

08:30-09:15 Presentation back to plenary

9:15-10:00 Session 10: FDES Component 6: Environment Protection, Management and Engagement

- Component 6 and its sub-components and statistical topics (UNSD)
- Discussion

10:00-10:20 Coffee break

10:20-11:15 Group work on Component 6 using the ESSAT

11:15-12:00 Presentation back to plenary

12:00-13:00 Lunch

13:00-14:00 Session 11: Institutional aspects of environment statistics

- Putting the FDES to work: a Blueprint for Action (UNSD)
- Manual of the Basic Set of Environment Statistics (UNSD)
- ESSAT Part III - Institutional Dimension (UNSD)
- Handbook for setting up/strengthening an environment statistics programme (UNSD)
- UNSD ESSAT and COMESA Environmental Statistics Assessment 2014 (COMESA and Resource person)

14:00-15:10 Session 12: Toward a Regional Programme of Environment Statistics (COMESA)

- Roadmap for the implementation of the FDES in COMESA member states (COMESA)

15:10-15:30 Coffee break

15:30-16:15 Closing remarks

- COMESA
- UNSD

16:15-16:30 Evaluation

Annex 3 Groups

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