

**Second Meeting of the Expert Group on
Environment Statistics
New York, 25-27 March 2015**

Final Report

1. The Second Meeting of the Expert Group on Environment Statistics (EGES), organized by the United Nations Statistics Division (UNSD), was held in New York from 25 to 27 March 2015.
2. The meeting was attended by 20 experts from Belize, Botswana, Brazil, Chile, Colombia, Czech Republic, Hungary, India, Italy, Jamaica, Mauritius, Mexico, Nigeria, Philippines, United Arab Emirates, the United States of America, the United Nations Economic Commission for Europe, the European Environment Agency, and the Statistical Centre for the Cooperation Council for the Arab Countries of the Gulf.
3. Ms. Iva Ritschelova, Chair of the EGES, opened the meeting. Ms. Eszter Horvath spoke about the background and objective of the meeting and reported on the status of the ongoing methodological work in support of the implementation of the Framework for the Development of Environment Statistics (FDES 2013). She thanked all experts who contributed to the work and emphasized the continued need for these contributions to implement the work programme and produce the expected output of the EGES.
4. The meeting was organized in three sessions as follows:
 - Session 1: Manual on the Core Set of Environment Statistics
 - Draft methodology sheets on water resources; waste; minerals; energy; environmental expenditure; land cover/land use; biodiversity; and natural extreme events and disasters
 - Session 2: Environment Statistics Self-Assessment Tool (ESSAT)
 - Session 3: Work Programme of the EGES
5. The discussions were based on documents and the corresponding presentations prepared by EGES members and UNSD.
6. The main conclusions of the meeting are summarized in the following paragraphs 8-72. A table detailing agreed responsibilities and timeline is attached as Annex A. The agenda of the meeting is attached as Annex B, and the list of participants is attached as Annex C.
7. The Expert Group expressed its appreciation to UNSD and to all experts who contributed to the work done since the first Meeting of the EGES in March 2014 with respect to both compilation of methodology sheets and the ESSAT. Appreciation was expressed toward the UN Economic Commission for Latin America and the Caribbean (UN-ECLAC), the Inter-American Development Bank, and the Instituto Nacional de

Estadística y Geografía, Mexico (INEGI) for sharing their experience in using their version of the ESSAT in Latin America and the Caribbean.

I. Conclusions with regard to the Methodological Manual for the Basic and Core Sets of Environment Statistics (BCSES)

A. General conclusions

8. The main target audience of the Manual are environmental statisticians and environmental specialists who work in data analysis and reporting. The methodology sheets therefore should focus on the statistical methods to be used in the collection and compilation of environment statistics and should facilitate the promotion of the use of these methods by all providers of environmental data. Methodologies used for producing the data by a primary source that is non-statistical (e.g., hydrometeorological or other monitoring and modelling, laboratory analyses, interpretation of satellite images, etc.) should not be described in detail. The methodology sheets should motivate and facilitate a dialogue between environmental statisticians and other producers of environmental data (e.g., scientists).

9. The level of detail in each methodology sheet should be determined based on the availability of international recommendations or guidelines. In cases where no background resources already exist, it may be fitting for the methodology sheet to expand into more details and refer to good practices. However, if background resources are readily available elsewhere, it is sufficient for reference and short description to be provided to an appropriate source, and as such, for the given methodology sheet to be relatively brief. Special attention needs to be paid to proper referencing of relevant sources.

10. The title of each methodology sheet should precisely reflect its contents and coverage as well as it should contain precise reference to the location of the statistics in the FDES.

11. The section on “Coverage” should be moved up to the beginning of the methodology sheets. This section should contain clear information about the scope of the sheet, what is included, what is excluded and why.

12. In case of multiple definitions, classifications etc., clear indication of the single recommended methodology is necessary. However, the methodology sheets should also give guidance on the necessary metadata to be provided when the application of the recommended methodology is not possible by a country and national definitions and classifications are used.

13. The methodology sheets, when applicable, should use definitions and classifications consistent with those used in international environment statistics questionnaires. If there is a reason to use different concepts, it should be clearly indicated.

14. The methodology sheets, when applicable, should also use definitions and classifications consistent with the SEEA Central Framework. If there is a reason to use different concepts, it should be clearly indicated. If any of the statistics contained in a methodology sheet feed into the SEEA CF tables, it should also be indicated.
15. Distinction should be made between “definition” and “description of term”, the former being strict and agreed upon, the latter more explanatory than prescribing.
16. In the case of methodological guidance that is the same for more than one methodology sheet, cross-referencing should be used instead of repeating multipurpose methodological elements.
17. The sections devoted to the statistical population, statistical unit, reporting unit and unit of measurement should be revisited with the objective to make them consistent and based on the same concepts and interpretation.
18. The methodology sheets should use, as far as possible, flow charts and other graphic presentations, as well as reference to mathematical formulae to illustrate the relationships among the variables included in their scope. Where necessary, examples should be given to facilitate better understanding.
19. The methodology sheets should give guidance on data validation by using examples from good practices.
20. UNSD was asked to have a look at the numbering of the statistics contained in the BCSES with regard to the consistency of the numbering of “of which” categories.
21. Before continuing the work on the methodology sheets, they should be updated to reflect the final version of the BCSES.

B. Specific conclusions

B.1. Water (presented by Michael Nagy)

22. The title of the methodology sheet will be changed from, “Water Resources”, to “Water Resources, Use and Returns”. The term “freshwater” should be replaced by “inland water” where applicable, in accordance with the FDES and the guiding international recommendations. The guidance for the calculation of the volume of precipitation from height measurements should be refined. The data item “water rights” is to be deleted. More guidance on the calculation of groundwater resources is needed. Distinction has to be made between water use and water consumption. More is needed on the use and limitations of administrative records, modelling and estimation. Reference to water balances (vs. water accounts) is needed (similarly to energy balances and accounts).

23. In some countries the consumption of bottled water can represent as much as 5 per cent of total water consumption. The group regarded it as possible to add bottled water as a supplementary statistic to the BCSES and noted that data on the production, trade and sales of bottled water may be available from industry and trade statistics.

24. Michael Nagy (team leader) together with Angela Ferruzza and Khamis Raddad will continue to work on this methodology sheet with a deadline of 31 July 2015 for the revised draft.

B.2. Waste (presented by Eszter Horvath on behalf of Eurostat)

25. Given the absence of internationally agreed recommendations there is a need for the methodology sheet to go into more details and use more flexible approaches.

26. On the different approaches in classifying waste (e.g., by source or by type of waste), it was agreed that the methodology sheet should acknowledge and explain that different classifications understandably overlap since they are looking at waste from different aspects and several umbrella groupings used for practical purposes cut across the categories of classifications.

27. Unless there is full coverage by waste collection services, the amount of “generated” waste is bigger than the amount of “collected” waste. Guidance on methods to estimate the amount of waste generated (incl. “unmanaged” waste) by economic activities and households is necessary as well as the identification of data sources depending on whether one is dealing with “generated” or “collected” waste.

28. Explanation is necessary in the case of municipal waste where the commonality is that it is collected by municipal waste collection services. That is to say, aside from this commonality, municipal waste is invariably a mix of many different kinds of waste (e.g., food waste, hazardous waste, e-waste, etc.) which may originate from households as well as from different economic activities.

29. Regarding incineration, additional text is requested explaining the distinction between incineration with and without energy recovery.

30. Methodologies to provide data on selected important waste categories such as e-waste and food waste need to be included.

31. A classification or list of categories of different waste treatment processes have to be included in the methodology sheet.

32. Considering the difficulties of waste statistics, guidance to data validation methods is of outstanding importance in this area.

33. The methodology sheet was developed by Eurostat. Eurostat will continue leading the revision. Iva Ritschelova, Edgar Ek and Pal Boday offered support to this work. The deadline to finalize the revision is 31 July 2015.

B.3. Minerals; and

B.4. Energy (presented by Rayen Quiroga)

34. Regarding the minerals methodology sheet, it is very important to make it clear that a distinction is made between non-energy and energy minerals (the latter discussed in the Energy resources methodology sheet). However, as far as statistics on their resources are concerned, the same methodologies refer to both, therefore, if the current structure pertains, the common methodologies should not be repeated in both sheets. UNSD may revisit this issue in order to find the optimal solution.

35. It was agreed that the scope of the methodology sheets on minerals and energy (in accordance with the FDES) will not cover issues related to the valuation of mineral resources.

36. Clear distinction is to be made among the classifications used for classifying mineral/energy resources, products and the relevant economic activities. For environment statistics purposes, the classifications should be used at a more detailed (individual) minerals level, as aggregated categories are not very useful.

37. The inconsistency between the title and the contents of the methodology sheet (*resources and their use*) has to be handled as for non-energy minerals the FDES and the BSES do not go beyond their extraction into their use in the economy.

38. As to the methodology sheet on energy resources and their use it was agreed that it needs to be reduced, focusing at the level that is relevant for the environmental statistician instead of covering the full depth of the large, specialised, stand-alone field of energy statistics. Explanation needs to be included on the interpretation of the term “stock” that has a different meaning in energy statistics and environment statistics.

39. The methodology sheets will be revised by UNSD, with help by Janet Martin, Khamis Raddad and Abdelaziz Bourahla (all for the energy part). The deadline for the revision is 31 July 2015.

B.5. Environmental expenditure (by government) (presented by Francisco Jimenez)

40. The scope of the methodology sheet has to be extended to cover private expenditure in addition to government expenditure. The Classification of Environment Protection Activities has to be introduced and described. Explicit mention and description of the environmental goods and services sector (EGSS) should to be added and consistency with the SEEA CF needs to be ensured.

41. It was agreed that a clear definition of green jobs does not yet exist, and that measuring salaries of persons employed in green jobs should not be considered environment protection expenditure *per se*.

42. Regarding discussion surrounding climate change, it was made clear among experts that climate change related expenditure is within the scope of environment protection expenditure (EPE). On the other hand, per definition, expenditure related to the protection against disasters and extreme events is not part of EPE.

43. The methodology sheet has to be complemented by the description of methods and challenges identifying the expenditure linked to environment protection and resource management part in the case of integrated investments and running costs.

44. The statistical concepts described have to be applied to the subject area (environmental expenditure statistics).

45. Francisco Jimenez will continue leading the revision supported by Iva Ritschelova and Pal Boday. The deadline is 31 July 2015.

B.6. Land cover and land use (presented by Anand Sookun)

46. The methodology sheet as presented addressed only land cover. While land cover and land use are closely related, it is important to draw a clear conceptual distinction between them, regarding land cover as more related to natural and biophysical features, and land use to economic activities and functions of land. However, they should be handled in one methodology sheet because: (i) the two concepts are better understood in relation to one another; and (ii) the methodologies to compile statistics on land cover and land use are to a great extent similar.

47. In the methodology sheet the standard template has not been followed, so the sheet has to be fully matched with the template. The text on definitions, description of terms, classifications, statistical population, units, etc. needs to be improved. The definitions include a mixture of land area, land cover, land use related definitions that need to be cleaned and complemented with additional ones.

48. More is needed about the sources of data, the use of different types of sources in combination and how to transform them into environment statistics; how to link/aggregate/disaggregate the classifications used in remote sensing with the (interim) classifications recommended by the FDES (based on FAO and SEEA). The use of field surveys and land registers/cadasters to complement remote sensing data should be mentioned. The sheet should focus more on the level of compilation of the relevant environment statistics from remote sensing and the possibilities remote sensing offer than the remote sensing techniques themselves.

49. Anand Sookun will continue to lead the revision and the development of the new part on land use. Francisco Jimenez, Angela Ferruzza and Edgar Ek offered to work with Anand on the revision. The deadline is 30 June 2015 for the part on land cover and 31 August 2015 for the part on land use.

B.7. Biodiversity (presented by Monica Arroyo)

50. The experts congratulated the team on the remarkable work done on this methodology sheet. It was agreed that the charts representing the steps to take when designing a biodiversity survey can be deleted as (i) they illustrate steps that are general and not specific to biodiversity; and (ii) these surveys will not be carried out by statisticians, rather statisticians will take over the results from the primary data source and use them in environment statistics. Instead, it would be useful to present here the type of information on the characteristics of the survey that the environmental statistician needs before using the data for producing environment statistics.

51. Some definitions (e.g., those on “known species” or “protected species” need to be revisited as they seem incorrect. Definitions related to the variables that are identical for plant and animal species could be merged instead of repeating them separately for plants and animals. The IUCN and WCMC classifications (regarding protected area categories and species status categories) should be added. The links to the references should be grouped by subject area.

52. As ecosystem diversity is part of biodiversity and as biodiversity is also one of the qualitative indications of the health of ecosystems, it was agreed that the methodology sheet would incorporate the methodologies used for the production of statistics on ecosystems. It was also suggested that the same merging might be useful in the FDES and in the BCSES.

53. Monica Arroyo and Denise Kronemberger will continue working on the methodology sheet. Philip Bankole offered contributions. The deadline is 30 September 2015.

B.8. Disasters and extreme events (presented by Reena Shah on behalf of Kristina Taboulchanas)

54. For the natural extreme events and disasters methodological sheet, it was agreed that more citation should be given to the Centre for Research on the Epidemiology of Disasters Emergency Events Database (CRED-EMDAT), and that care should be taken to ensure mutual exclusivity in the classification of disasters.

55. Clarification is needed with regard to the difference between “hazard” and “disaster”. The use of the word “sudden” in the definition of natural disaster was felt incorrect because some natural disasters (e.g., drought) do not happen suddenly. The

section on data compilation and transformation into environment statistics series needs improvement.

56. The author of the methodology sheet, Kristina Taboulchanas, will continue working on the revision and about the possibility to extend the scope on technological disasters. UNSD received additional written comments from Ekkehard Petri from the Statistical Office of the European Union (Eurostat) which will be forwarded to Kristina.

57. It was agreed that because of ongoing methodological work in this field at UN ECE (presented by Michael Nagy) and UN ESCAP, the revised methodological sheet should be considered interim, and revisited in accordance with the progress of work by these organizations.

II. Conclusions with regard to the Environment Statistics Self-Assessment Tool

58. Francisco Javier Jiménez Nava and Janet Martin delivered a presentation on the use of the ESSAT in the Project for the Development and Strengthening of Official Environment Statistics by Creating a Regional Framework in Latin American and the Caribbean. Reena Shah presented on the ESSAT, Part I: Institutional dimension of Environment Statistics. Marcus Newbury presented on the ESSAT, Part II: Statistics Level Assessment.

59. The experts welcomed the ESSAT and considered it a very valuable tool to undertake an assessment of the level of development in environment statistics, to foster inter-institutional collaboration and to develop a strategy for strengthening environment statistics in a country. It was proposed that the NSO take the leading role in the completion of the ESSAT. The experts unanimously agreed that it is imperative that implementation be done collaboratively, as receiving responses from an NSO rather than a Ministry of Environment, or vice-versa, or from another individual source could lead to very different responses. However, experts also expressed that it is not necessarily the case that countries should complete the ESSAT in one instance, but that instead the use of the ESSAT may be focused on limited parts, and that it has a long-run purpose. It can be used at national and regional levels and is very helpful for cross-country comparisons.

60. Some experts also saw it as a considerable undertaking in order for the ESSAT to be completed at the national level. The issue of non-response to the ESSAT Questionnaire was mentioned as a major difficulty. The need for a strategy aimed at promoting the ESSAT and encouraging stakeholders to apply this tool was recognized, as sometimes the importance/need was not evident to get the buy-in from institutions. A detailed implementation guide for the application of the ESSAT for different purposes was considered necessary.

61. Successful implementation happened where all relevant stakeholders were contacted, and a forum organised for them to all cooperatively work on the ESSAT in one committee, essentially functioning as one working group with a common purpose.

Another successful experience at the national level was cited where a two-day workshop was organised for top and middle-level managers to utilise a country-level specific ESSAT. In this exercise, the ESSAT in full was not completed, but it allowed for a focus on issues and statistics of greatest priority. Filling out the ESSAT in this way was seen as providing the country with a service in terms of assisting it to assess the status of its environment statistics and for information to be shared cross-institutionally, and far outweighed any time burden to fill in the ESSAT.

62. It was agreed that the relationship between the implementation of the ESSAT for the development of an environment statistics strategy and a national strategy for the development of statistics (NSDS) should be elaborated in the introduction to the ESSAT.

63. It was suggested that after each section in the ESSAT a page for general comments would be included. An explanation of the terms environmental data, statistics and indicators was also requested.

64. For the version of the ESSAT used in the Latin American and Caribbean region, comment was made that countries with previous exposure to the FDES were much better positioned to complete the ESSAT. Countries who responded sourced roughly two-thirds of their data from administrative records and monitoring.

65. Many specific and very detailed comments on the questions/points in Parts I and II were also discussed and these will be incorporated into the revised ESSAT which will be sent out to the experts for further comments/inputs leading to its finalization.

III. Work programme for the EGES for 2015-2016

66. Based upon progress made by experts in the preceding 12-month period, presentations at this meeting, and on opinions expressed by experts throughout the meeting, UNSD presented to the experts the priorities for 2015-2016 and the agreed work assignments for continued compilation of methodology sheets.

67. The discussions at the meeting resulted in some decisions that affect the FDES document and the BCSES. These minor changes will be implemented by UNSD and after that the FDES document will be submitted to official UN editing by 31 May 2015. The final unedited version will be posted at the UNSD website. Possibilities to have the unedited version printed as a “white cover” publication will be explored.

68. UNSD will implement the agreed changes to the ESSAT I and II and will circulate the revised version in the Expert Group for last comments. The final version of the ESSAT I and II will be posted at the UNSD website by 30 June 2015.

69. A detailed implementation guide for the ESSAT I and II will be drafted by UNSD and circulated in the Expert Group for comments before 30 September 2015.

70. Work on the methodological sheets will continue in three work streams: (i) revision of the existing methodology sheets based on the discussions at the meeting (including their extensions to incorporate additional areas, such as land use, ecosystems, corporate, non-profit institutions and household environment protection and resource management expenditure, and technological disasters); (ii) completing pending assignments by drafting of pending methodology sheets (air quality, crops and livestock, GHG emissions, human settlements); and (iii) developing new methodology sheets on forests and timber resources. Responsibilities and deadlines are contained in Annex A.

71. The objective is to finalize the methodology sheets currently in work and have them posted on the UNSD website before the end of 2015. New assignments will be discussed electronically when the current agreed assignments have been completed.

72. The next face-to-face meeting of the EGES will be held in April 2016. Exact dates will be discussed and agreed on electronically.

ANNEX A

Status and responsibility for compilation of methodology sheets

Table 1: Status and responsibility for compilation of methodology sheets

Working group (lead person in bold)	FDES sub-components, topics to be covered	Status as of March 2015 EGES	Date for final draft submission to UNSD
Mr. Anand Sookun, Mauritius; Mr. Francisco Javier Jiménez Nava, Mexico; Ms. Angela Ferruzza, Italy; and Mr. Edgar Ek, Belize	Sub-component 1.2, Topic 1.2.1: Land cover; and Sub-component 2.3, Topic 2.3.1: Land use	Draft received 14 October 2015 from Mr. Anand Sookun.	End of June, 2015 for Land cover. End of August 2015 for Land use.
Ms. Monica Madrid Arroyo, Colombia; Ms. Denise Kronemberger, Brazil and Mr. Philip Bankole, Nigeria	Sub-component 1.2 Topic 1.2.2: Ecosystems; Topic 1.2.3: Biodiversity	Draft received 18 February 2015 (topic 1.2.3 only).	End of September 2015.
Ms. Rayen Quiroga, UNSD; Mr. Francisco Javier Jiménez Nava, Mexico and Mr. Marcos Serrano Uolla, Chile	Sub-component 1.2 Topic 1.2.4: Forests; Topic 2.3.2: Use of forest land; and Topic 2.5.1: Timber resources		To be determined.
Mr. Marcos Serrano, Chile	Sub-component 1.3 Topic 1.3.1: Air quality	Draft received 24 March 2015 (Spanish).	May 2015 (for a first English draft).
UNSD; Mr. Khamis Raddad, UAE (energy); Mr. Abdelizaz Bourahla, GCC (energy); Ms. Janet Martin, Jamaica (energy).	Topic 2.1.1: Stocks and changes of mineral resources Topic 2.1.2: Production and trade of minerals Topic 2.2.1: Stocks and changes of energy resources Topic 2.2.2: Production, trade and consumption of energy resources	Draft produced in October 2014.	End of July 2015.
Ms. Monica Madrid Arroyo, Colombia; Ms. Denise Kronemberger, Brazil; Ms. Ditshupo	Sub-component 2.5 Topic 2.5.3: Crops Topic 2.5.4: Livestock		August 2015 (for a first draft).

Gaobotse, Botswana; <i>and FAO (tbc)</i>			
Mr. Michael Nagy, UNECE; Ms. Angela Ferruzza, Italy; Mr. Khamis Raddad, UAE	Sub-component 2.6 Topic 2.6.1: Water resources Topic 2.6.2: Abstraction, use and returns of water	Draft received September 2014.	End of July 2015.
Mr. Khamis Raddad, UAE	Topic 1.3.2 Freshwater quality	Draft received March 2015	To be determined
Ms. Rayen Quiroga, UNSD; Mr. William Sontag, USA; Ms. Denise Kronemberger, Brazil; Mr. Anand Sookun, Mauritius; <i>Norway (tbc)</i>	Sub-component 3.1 Topic 3.1.1: Emissions of greenhouse gases		To be determined.
Ms. Karin Blumenthal, Eurostat; Ms. Iva Ritschelova, Czech Republic; Pal Boday, Hungary; Edgar Ek, Belize.	Sub-component 3.3 Topic 3.3.1: Generation of Waste Topic 3.3.2: Management of Waste	Draft received 30 October 2014.	End of July 2015.
Ms. Kristina Taboulchanas, ECLAC; Mr. Michael Nagy, UNECE; (Coordinate with ESCAP)	Sub-component 4.1 Topic 4.1.1: Occurrence of natural extreme events and disasters; Topic 4.1.2: Impact of natural extreme events and disasters Sub-component 6.3 Topic 6.3.1: Preparedness for natural extreme events and disasters	Draft received on March 23, 2015, topics 4.1.1 and 4.1.2 only.	End of July 2015. (Possible extension to technological disasters?)
Ms. Ditshupo Gaobotse, Botswana; Ms. Janet Martin, Jamaica.	Sub-component 5.1 Topic 5.1.1: Urban and rural population Topic 5.1.2: Access to selected basic services Topic 5.1.3: Housing conditions Topic 5.1.4: Exposure to ambient pollution Topic 5.1.5: Environmental concerns specific to		End of July 2015 (for a first draft).

	urban settlements		
Mr. Francisco Javier Jiménez Nava, Mexico; Ms. Iva Ritschelova, Czech Republic; Mr. Pal Boday, Hungary; <i>Ms. Kristina Taboulchanas, ECLAC (tbc)</i>	Sub-component 6.1 Topic 6.1.1: Government environment protection and resource management expenditure Topic 6.1.2: Corporate, non-profit institution and household environment protection and resource management expenditure	Draft received October 2015 (only government environment protection expenditure).	End of July 2015 (for a first draft).
Ms. Roberta Pignatelli, EEA	All chapters: peer review		Continuous from July 2015

ANNEX B

Agenda

Wednesday, 25 March 2015

09:00 – 09:30 Registration

09:30 – 10:00 Opening

Objectives of the meeting

Adoption of the Agenda

Session One: Manual on the Core Set of Environment Statistics

10:00 – 13:00 Draft chapter on water

Draft chapter on waste

Presentation of the chapters

Discussion

13:00 – 14:30 Lunch break

14:30 – 18:00 Draft chapter on minerals

Draft chapter on energy

Draft chapter on environmental expenditure

Presentation of the chapters

Discussion

18:15 -20:00 Reception

Thursday, 26 March 2015

09:30 – 13:00 Draft chapter on land cover/land use

Draft chapter on biodiversity

Draft chapter on extreme events and disasters

Presentation of chapters

Discussion

Timetable for finalization of draft chapters

Work programme for new chapters

13:00 – 14:30 Lunch break

Session Two: Environment Statistics Self-Assessment Tool (ESSAT)

14:30 – 18:00 ESSAT Part I (National priorities and institutional aspects)

Presentations on lessons learned

Presentation of draft

Discussion

18:30 – 20:00 Dinner

Friday, 27 March 2015

09:30 – 13:00 ESSAT Part II (data availability)

Presentations on lessons learned

Presentation of revised draft

Discussion

Timetable for finalization of ESSAT Parts I and II

13:00 – 14:00 Lunch break

Session Three: Work Programme

14:00 – 17:00 Ongoing and planned international, regional, national activities

FDES and the SDG indicators

EGES Work programme

Closing of the meeting

ANNEX C

List of Participants

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