

WORKSHOP ON ENVIRONMENT STATISTICS

ADDIS ABABA, ETHIOPIA
16 - 20 JULY, 2007

Report

Background and objectives of the workshop

1. The United Nations Statistics Division (UNSD), the United Nations Environment Programme (UNEP), and the Economic Commission for Africa (ECA) co-organized a workshop on environment statistics to agree on a core set of environmental indicators and statistics for national and regional reporting, and train participants from national statistical offices and ministries/agencies responsible for environment on basic concepts, methods and best practices in environment statistics. The workshop aimed at providing a forum for exchange of information on the status of national environment statistics, as well as establishing a network of environment statisticians among the countries as recommended by the Action Plan of the Environment Initiative of the New Partnership for Africa's Development (NEPAD).

Organization of the workshop

2. The workshop was held at the United Nations Conference Centre at ECA in Addis Ababa, Ethiopia from 16 to 20 July 2007.
3. The workshop was attended by participants from National Statistical Offices (NSOs) and Ministries of Environment from Angola, Botswana, Ethiopia, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe. A complete list of participants is attached as Annex 1.
4. The following regional/international organizations also attended the workshop: the Center for Environment and Development for the Arab Region and Europe (CEDARE), the Eastern Africa Statistical Training Centre (EASTC), the Institute of Statistics and Applied Economics (ISAE), the International Union for the Conservation of Nature and Natural Resources – Regional Office of Central Africa (IUCN-ROCA), the Southern African Research and Documentation Centre/India Musokotwane Environment Resource Centre for Southern Africa (SARDC/IMERCSA), the Economic Community Of West African States (ECOWAS), the Southern African Development Community (SADC), the African Union Commission (AUC), the African Development Bank (AfDB), the Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP) and the United Nations Framework Convention on Climate Change (UNFCCC).

Opening session

5. The workshop was opened by Dimitri Sanga, on behalf of the Director of the ECA's African Centre for Statistics (ACS), Ben Kiregyera. In his opening remarks, Dimitri Sanga noted the need for a comprehensive body of environment statistics to monitor the crucial link between the environment and development. Acknowledging the “inadequacies” of statistics on the continent, he said that the workshop was aimed at mapping out appropriate mechanisms and indicators for monitoring and evaluating various conventions on the environment.

6. UNEP's focal point, Christopher Ambala, described the workshop as another milestone in boosting accessibility to more reliable environmental data on the continent, a sentiment echoed by the UNSD representative, Eszter Horvath. She stressed that sound policy and decision-making was impossible without accessible and reliable information on the environment. The objective of the workshop, she added, was to agree on a core set of environmental indicators that combine national and international requirements; and to initiate a regional strategy for the development of environment statistics.

Election of the bureau and adoption of the agenda

7. The meeting elected the following bureau:

Chair: Botswana

Vice chair: Ethiopia

Rapporteur: Zimbabwe

Second rapporteur: Uganda

8. The following agenda was adopted:

1. The need for environmental statistics and indicators
2. Environmental statistics and indicators: concepts and methods
3. Institutional aspects of environment statistics
4. Statistics on freshwater, coastal and marine resources, environmental health and natural disasters
5. Statistics on land use and agriculture, forests and biodiversity
6. Statistics on waste, air, energy and minerals
7. Application of Geospatial technology for the collection of environment statistics
8. Dissemination of environment statistics
9. Towards a regional programme of environment statistics – list of indicators and set of tabulations
10. Closing session

The work schedule is attached as Annex 2.

Account of Proceedings

Session 1: The need for environment statistics and indicators

The needs for environment statistics in Africa (ECA)

9. The first presentation on the regional needs for environment statistics was made by Bakary Dosso from ECA's African Centre for Statistics. The presentation highlighted the global concern on environment and Africa's environmental challenges. He recalled the priorities areas identified by the New Partnership for Africa's Development (NEPAD) environment initiative including Land degradation, drought and

desertification, Wetlands conservation, Invasive species, Marine and coastal resources, Cross border conservation of natural resources, and climate change. The follow up to national, subregional, regional and global environment conventions requires quality statistics. The international conventions and frameworks dictate the need for indicators of inputs, outputs, impacts and outcomes for their implementation. The action plan for the implementation of the NEPAD environment initiative, Agenda 21, and Johannesburg Plan of Implementation (JPOI) all highlight the need for quality statistics for proper results based management. The presenter pointed out the poor status of African statistical systems (under-resourced, uncoordinated, data gaps, lack of timeliness and user-friendly data presentation format). He referred to the Reference Regional Strategic Framework for Statistical Capacity Building in Africa (RRSF) whose main strategy is the elaboration and implementation of a National Strategy for the Development Statistics (NSDS) as the overarching framework for statistical development in Africa. He strongly recommended the elaboration at country level of a sectoral strategy for the development of environment statistics.

10. Kwadwo Tutu from ECA's Division of Food Security and Sustainable Development presented the ECA's experience in collecting environment statistics for the second edition of the report on sustainable development. He informed the participants on the project of building a sustainable development index that will be based on the four pillars of sustainable development: economic, social, environmental and institutional.

Discussion

11. During the discussion, the participants emphasized the need to develop quality environmental indicators, based on sound definitions, concepts and methods. The need for the elaboration and implementation of a sectoral strategy on environment statistics within the framework of NSDS was pointed out. The strategy will bring together key national stakeholders in environment statistics and will lead to efficient use of the already limited human and financial resources of the national statistical system.
12. The challenge associated with compiling indicators and computing indices was raised. In relation to the computation of a sustainable development index for Africa, for the exercise to be successful, there is a need to have quality and comparable statistics on the four sustainable development pillars, which are economic, environmental, social and institutional.

National needs (Ethiopia)

13. A presentation on the national experience describing the needs for environment statistics was made by Tesfaye Woldeyes from the Environmental Protection Authority of Ethiopia. He highlighted the major data producers, the available environmental indicators, the existing cooperation and system of coordination among environmental institutions and major constraints and challenges facing environmental statistics in Ethiopia. He recommended the need to develop environmental indicators, improve the present environmental statistics system, and strengthen the institutions responsible for the data collection and management of environmental statistics.

International needs of environment statistics (UNSD)

14. A presentation was made by Eszter Horvath, UNSD, on the international requirements for environment statistics and indicators. A distinction was made between global and international statistics, the purpose of the first being the production of statistics for the world as a whole, and the production of internationally comparable country statistics as the objective of the second. The different international requirements were grouped into four categories, namely: (i) indicators to follow up on global conferences (MDG indicators, CSD list of indicators of sustainable development, etc); (ii) reporting to international conventions (UNFCCC, Basel, etc); (iii) thematic/topical data collections by international organizations (e.g. agricultural statistics by FAO, energy statistics by UNSD, water quality data by UNEP GEMS Water); and (iv) comprehensive international environment statistics data collections (such as the OECD/Eurostat or the UNSD/UNEP Questionnaire on environment statistics).

15. The four categories represent different objectives and different requirements in terms of the scope and detail of data as well as the level of aggregation. The UNSD/UNEP questionnaire and its linkages to the other types of international requests were described. The need for coordination and harmonization among international requests in order to avoid duplication and conflicting data as well as the need to reduce the burden on the countries created by the great number of requests was emphasized and the activities of the Inter-secretariat Working Group on Environment Statistics that was established in 2003 to respond to these needs were presented.

Discussion

16. The discussion focused on the problems of conflicting national and international data and the reasons for discrepancies. Participants expressed their wish that international organizations consulted countries before manipulating national data. The need for better coordination at the national level was also mentioned by many participants.

AEIN/GEO/AEO initiative (UNEP)

17. Christopher Ambala of UNEP presented the Africa Environment Information Network (AEIN), the Global Environmental Outlook (GEO), and the Africa Environmental Outlook (AEO) initiatives. In addition, he highlighted the UNEP programme of work. The flagship vehicle of the UNEP integrated environmental assessment and reporting work is the GEO process - integrated environmental assessment and reporting (IEA). At the regional level, the AEO provides an integrated analysis of emerging issues under the NEPAD Environment Action Plan thematic areas. The AEIN initiative supports the AEO reporting process. It involves African countries and the region as a whole participating in capacity building activities. The goal of AEIN is to enhance accessibility to more reliable environmental data and information at national level for the environmental assessment and reporting in the region.

Session 2: Environmental statistics and indicators: concepts and methods

18. Under this agenda item, three presentations were made by UNSD on the frameworks for environmental statistics and indicators, the development of environmental indicators and the data linkages to environmental accounting.

Frameworks for environmental statistics and indicators (UNSD)

19. Reena Shah from UNSD presented the four major frameworks for environmental statistics and indicators, and indicators for sustainable development, which are the Framework for the Development of Environment Statistics (UNSD), the Pressure-state-response framework (OECD), the thematic/sub-thematic indicator framework (CSD) and the Driving force- pressure- impact- response framework (Eurostat and EEA). She described the historical developments in the CSD framework and the similarities and differences between the four frameworks mentioned above.

Development of environment indicators (UNSD)

20. Reena Shah from UNSD described the differences between data, statistics, indicators and indices and focused the rest of her presentation on the development of indicators. She presented the purposes of indicators and criteria for indicator selection. She described the Millennium Development Goals (MDG) Goal 7 indicators, and the Commission on Sustainable Development (CSD) indicators for sustainable development. She explained the similarities and differences between these two sets of indicators and presented a comparison table of the CSD and MDG indicators to demonstrate the similarities between them.

Discussion

21. During the discussion participants stressed the need to be kept involved and informed of the developments made in the MDG and CSD indicators. They also emphasized the need for guidance and support for the compilation of, in particular, qualitative data that are often required in environment statistics. It was noted that one of the purposes of the current workshop was to bring together users and producers at the national, regional and international levels, as well as to train participants in concepts and methods of environment statistics.

Linkages to environmental accounting (UNSD)

22. An introduction was made by Eszter Horvath, UNSD, to the system of environmental and economic accounting (SEEA) that explained the objective to present environmental and economic information in a common framework that is based on the accounting concepts of the System of National Accounts (SNA). The SEEA is a satellite account of the SNA that describes stocks of environmental/natural resources and their flows within and between the environment and the economy in physical and monetary terms. The main concepts and the different modules of the SEEA were introduced. The participants

were informed about the activities of the UN Committee of Experts on Environmental-Economic Accounting and those of the London Group on Environmental Accounting.

Discussion

23. The discussion that followed the presentation focused on the problems of environmentally adjusted main economic aggregates (such as GDP) and the difficulties of valuation. While there are several examples that already exist on the implementation of certain modules of the SEEA, these are mostly physical accounts and there are very few examples of linking environmental accounts to the SNA in monetary terms. Participants expressed their need for capacity building in this area. UNSD is ready to provide technical assistance to the countries upon their request.

Session 3: Institutional aspects of environmental statistics

Subregional experience (ECOWAS)

24. Christopher Ajaero of the ECOWAS Commission presented the experience of West Africa in the area of environmental statistics. He pointed out the activities affecting environment, environmental situation and issues, international treaties, environment regulations, and frameworks of environment statistics relevant to ECOWAS region. He pointed out selected sub-regional initiatives that contributed to the effective implementation of the international conventions including the Sub-Regional Action Programme to Combat Desertification in West Africa and Chad (SRAP) an initiative conceived jointly by the Comité Permanent Inter-Etats de la Lutte contre la Sécheresse dans le Sahel (CILSS), the Union Economique et Monétaire Ouest-africaine (UEMOA) and ECOWAS. He noted that the ECOWAS Environmental Policy is under preparation. A similar workshop was organized by UNSD, UNEP and ECOWAS in 2005 for the member countries of ECOWAS and a major output that followed the recommendations of that workshop was the elaboration of a regional framework on environment statistics. The Framework for Strengthening Capacity in the Institutionalization of Environment Statistics in ECOWAS was adopted by ECOWAS Authorities in January 2007.

National experiences (Botswana, Mauritius and Zimbabwe)

25. The representatives of Botswana presented the need for environment statistics, institutional aspects in managing environmental statistics as mandated, data providers, institutional arrangements and institutional linkages in their country. They pointed out the major challenges faced in relation to the development of environmental statistics and the strategies developed to guide data collection, harmonize data formats, establish coordination and enhance the institutional capacity.
26. Representatives of Zimbabwe and Mauritius made two presentations on national experiences on environmental statistics. The presentations focused on institutional aspects of environmental statistics. Activities on environmental statistics including those implemented under the Environment Information Systems, Africa Environment Information Network, National Oceanographic Data Centre, and WIO-LaB Project were

highlighted. The challenges and constraints on environmental statistics were also presented.

Discussion

27. During the discussion, participants expressed their concern about the quality of the outputs produced in the countries and suggested the use of secondary sources in the collection of environment data. The need for environmental statistics collection and dissemination to respond to the needs of local level stakeholders who are directly affected by the use environmental resources was highlighted. The following important points were also highlighted:

- To ensure political will and commitment by undertaking effective advocacy on environmental statistics targeted at political leaders and other policy makers;
- Need for collaboration and coordination among NSOs and sectoral ministries responsible for environmental data and information on the various elements of environment;
- The need for professional/scientific autonomy of NSOs which can also lead to improved availability and accessibility of data and information to various users;
- The need for data sharing and networking and therefore the importance of frameworks such as MOUs and legislation to facilitate data and information sharing; and
- The need to build the capacity for data collection in line ministries. This is in recognition of the fact that some data require technical background in specialized disciplines.

Session 4: Statistics on fresh water, coastal and marine resources, environmental health and natural disasters

28. Under this agenda item, the Centre for Environment and Development for the Arab Region and Europe (CEDARE) and the Indian Ocean Commission (IOC) made two presentations on their experiences on data and statistics at national, regional and global levels. The types of data, data sources, availability and accessibility and data gaps were highlighted. The presentations also highlighted the findings of the UNEP-funded comparative study of global/regional/national environment datasets. Data inconsistencies among the various datasets were pointed out.

Regional experience and data analysis in North Africa (CEDARE)

29. Abdel Rehim from CEDARE presented the regional experience both at the African level and for the Northern African Region in the field of statistical data and environmental indicators. The presenter highlighted the results of a study on data gap analysis of selected environmental indicators. He also presented the environmental information systems which were developed to support countries to standardize their

national indicators. Experience in developing environmental indicators in the Northern Africa Region was also highlighted. Mr. Rehim illustrated the data comparison study for Africa which was conducted in cooperation with UNEP. The study showed several discrepancies and inconsistencies at selected environmental indicators at the international regional and national levels. He concluded by demonstrating various outputs of the AEIN initiatives, which could be replicated in other sub-regions.

Discussion

30. The discussion that followed, stressed the need for consistent definitions and concepts on indicators and harmonization of methodology sheets. The poor access that data users have to environment data was emphasized. The need to agree on a core set of indicators and to have focal persons for different environmental statistics was discussed. It was pointed out that satellite data was available at UNEP and countries that express need can be facilitated to access and use these data.

Status of environment statistics in the Indian Ocean Region (IOC)

31. Sachooda Ragoonaden, representative of the Indian Ocean Commission (IOC) made a presentation on the State of Environment Statistics in the Indian Ocean Region. In Mauritius the Central Statistical office (CSO) established since 1999 an Environmental Unit at the Ministry of Environmental with a dedicated staff for the management of environmental data. It has published the Digest of Environmental Statistics in 2003, 2004, 2005 with data on various key indicators since 1993; the publications are available on its website. The development of an Environment Information System (EIS) is underway in Seychelles with nearly 84 institutions/units involved. It is currently in the process of identifying a core set of key indicators. Madagascar and Comoros are mostly concerned with the collection of socio-economic data. They have nevertheless, set up environmental units within their Central Statistical Offices. The presenter ended by the following recommendations to enhance environmental management in the region: (i) to consider the publication of a Compendium of Environmental Statistics similar to *The CARICOM Environment in Figures 2002*; (ii) to promote the use of the AEO-EIS toolkit for environmental data management for the sake of harmonization and standardization; (iv) to develop a GEO sub-regional data portal within the region to facilitate environmental assessment and reporting; and (v) to prepare guidelines on a methodology on how to prepare Environmental Statistics Legislation for smooth data sharing and exchange among data providers and between data providers and users.

International/regional data sources for the indicators (UNSD)

Data collection and compilation at national level (UNSD)

UNSD/UNEP questionnaire “water tables” (UNSD)

32. Presentations made by Eszter Horvath, UNSD, gave an introduction to the need for water statistics and an overview of its main components, and the international, regional and national sources of data. The water tables of the UNSD/UNEP Questionnaire were presented and explained including their linkages to the standard tables of the SEEAW (System of environmental-economic accounting for water resources). The presentation

focused on the indicators that can be derived from the data requested by the questionnaire. The questionnaire covers the main components of water statistics that are freshwater resources, abstraction and use of freshwater by the different economic activities and households, wastewater treatment and discharge, and water quality. The questionnaire does not cover at the moment some important areas such as e.g. emissions of pollutants in waste water because of the lack of national data. A presentation was made on the MDG indicator 30 (Access to safe drinking water) to illustrate the process of the collection and editing of data by the international organizations and to explain the causes of discrepancies between the figures reported by national and international organizations. A summary of the water-related indicators in the MDG, CSD and NEPAD lists were also presented.

Discussion

33. Participants expressed the opinion that the questionnaire, though difficult to fill out due to the fine details it requests, presents a useful framework for water statistics. It was mentioned that the detailed information requested in the questionnaire gives guidance for the calculation of the main water variables. The need for the use of international standard statistical classifications such as the ISIC in environment statistics was considered essential for linking environmental with economic data.

Natural disaster statistics (UNSD)

34. The situation of statistics on natural disasters and the main international source of these statistics were introduced in another presentation by UNSD including a summary of the relevant indicators in the CSD and NEPAD lists. Concepts, terms, definitions and classifications used in natural disaster statistics were also described.
35. The last presentation in this session gave a short summary and reminder of the main aspects for selecting good indicators as a preparation for the working group sessions.

Discussion

36. The discussion that followed underscored the need to use uniform terminology on indicators at international and nation level. It was explained that this was the rationale behind the detailed indicator definitions.

Session 5: Working group session on indicators data availability and data collection

37. In four working groups, participants discussed proposed indicators in the areas of fresh water, coastal and marine resources, environmental health and natural disasters. They were requested to review, assess, validate and/or add on the following: priority environmental issues, lead indicators, data availability, data collection, and main sources of data. The agreed upon indicator sets in the above areas are contained in Annex 3.

Session 6: Statistics on Land use and agriculture, Forests and Biodiversity

Benchmarks and indicators in support of Land Policy and Land Administration Reforms in Africa (AU-ECA-AfDB)

38. Brave Ndisale from the AUC and Joan Kagwanja from ECA made a joint presentation on benchmarks and indicators in support of Land Policy and Land Administration Reforms in Africa. The African land initiative is rooted within the framework of NEPAD and is based on four pillars: Economic, Social, Political and Environmental. The presenter highlighted the importance of land policy and reform as a means of integration at different levels helping to facilitate African integration. A pan-African initiative can help facilitate peer learning, knowledge exchange and monitoring land policy reforms, e.g. through the APRM/NEPAD.

39. With regard to the development of benchmarks and indicators in support of Land Reforms, Joan Kagwanja presented the outcomes of the expert group meeting on land indicators held in Addis Ababa. The EGM discussed the issues related to the approach for developing regional and national land indicators, for the measurement of the performance of countries in the implementation of their land policies and related reforms, initial list of benchmarks and indicators for measuring progress in addressing key land issues in Africa. The presenter provided benchmarks and indicators of three focus areas including (i) Protecting the commons, (ii) State Sovereignty over Land and (iii) Tenure Security.

Biodiversity statistics (IUCN ROCA)

40. Jerome Guefack from IUCN ROCA presented assessment indicators for species loss and biodiversity statistics. The presenter informed the participants that the IUCN Red List Programme aims at identifying and documenting those species most in need of conservation attention if global extinction rates are to be reduced; and providing a global index of the state of degeneration of biodiversity. The 2004 IUCN Red List contains 15,589 species threatened with extinction including 12% of birds, 23% of mammals, 32% of amphibians, 25% of conifers, 52% of cycads, 42% of turtles, 18% of sharks and rays, and 27% of freshwater fish in East Africa. The presenter highlighted the importance of monitoring biodiversity at the species level and indicated that trends

in species status can be used in many instances as a proxy to measure ecosystem integrity, health and services, management effectiveness, and sustainable use.

Land use statistics (FAO)

41. Dominic Ballayan from FAO Statistics Division gave an informative presentation on the FAO Land Use database: presentation, data sources, updates, accessibility. He pointed out that land use is the single most important driver of land degradation as it focuses on interventions on the land which directly affect its status and impacts on goods and services. Land use information is required at three levels: (i) at the local level, it is required for the physical planning and land management, (ii) at the national level it is required for overall resource policy and management, including planning for future use of land and for protection of the environment, and (iii) at the international level, land information is used for comparative descriptions and analysis of national patterns, extending and monitoring assistance programmes. The presenter indicated that since 2002 land use data is compiled through an integrated Resource Questionnaire. The land resource questionnaire covers four main areas: (i) Land use and Irrigation, (ii) Land use – Plantations, (iii) Land prices, and (iv) Metadata.

Land use and land degradation statistics (UNSD)

42. Reena Shah from UNSD presented the main concepts, definitions, and classifications in the land section of the UNSD/UNEP Questionnaire on Environment Statistics. She described Table L1 on Land use as well as Tables L2 to L4 covering Soil Erosion, Salinization and Desertification respectively. She explained the relationship between the data that FAO compile on agriculture and forestry, and the remaining data requested through the UNSD/UNEP Questionnaire. She also described the potential data sources and some of the difficulties encountered in data collection.

Discussion

43. During the discussion participants noted the fact that for some countries their total area is increasing over time due to land reclamation. For other countries consisting of several islands, sometimes there are differences in the total area of the country from different sources due to the fact that some of the values take into account all islands, and others not. It was also noted that data on desertification are extremely difficult to obtain as there is no standard methodology available for the measurement of desertification.

Environment and agriculture (FAO)

44. Dominic Ballayan from FAO Statistics Division presented the linkage between environment and agriculture with a focus on the issues and concerns for developing countries. The presenter highlighted the impact of agricultural inputs like irrigation, fertilizers, pesticides, agricultural machinery, and land use on environmental conditions. The presentation indicated the relevant sources of data including AQUASTAT database, FAO FertiBase, and FAO database.

Session 7: Working group on the selection of indicators, data availability and data collection

45. In working groups, participants discussed proposed indicators in the areas of Land use and agriculture, Forests and Biodiversity. The agreed upon indicator sets in the above areas are contained in the Annex finalized by UNEP.

Session 8: Statistics on Waste, Air, Energy and Minerals

Environment and policy issues; International/regional data sources for the indicators; Data collection and compilation at national level (UNFCCC)

46. Dominique Revet from the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat made three presentations on Environment and policy issues, International/Regional Data Sources for the Indicators, and Data Collection and Compilation at National Level respectively.
47. In the first presentation Climate Change Convention, the guidelines for national communications from non-Annex I Parties and the preparation and financing of national communications were addressed. After the introduction of environmental and policy issues, the different data sources for the climate change indicators such as the Intergovernmental Panel on Climate Change (IPCC), UNFCCC and other major data sources were presented. In the final presentation, the greenhouse gas (GHG) inventories software for the non-Annex I Parties, the importance of activity data, the role of national statistics offices in national communication process, and the aim of the National Adaptation Programmes of Action were highlighted.

Discussion

48. The discussions revealed the need for unified guidelines for national data compilation to resolve the discrepancy occurred from using different data sources. Also, participants recognized the need for developing an efficient means of information exchange system, which can lead to improved accessibility of data. The need to institutionalize the preparation process by sectoral level, and improve the cooperation and capacity building activities among line-ministries responsible at national level was highlighted during the discussion. During the ensuing discussion the participants also provided information about the availability of various type of activity data for the purpose of analyzing national or regional environment impact of climate change.

UNSD/UNEP Questionnaire on Air (UNSD)

49. Eszter Horvath from UNSD presented the tables of the Air section of the Questionnaire. The section includes tables on emissions of greenhouse gases and selected air pollutants, and also tables on ambient air quality, namely the concentration of pollutants

measured at stations selected according to prescribed criteria. National and international sources of data were presented. The tables on emissions follow the IPCC practices for GHG emissions and use data for prefilling from UNFCCC. The presenter stressed the need for calculating emissions also according to industries based on ISIC to allow for linkages with the economic data on activities that cause the emissions. The presentation concluded with the summary of air (atmosphere) related indicators in the MDG, CSD and NEPAD lists.

UNSD/UNEP Questionnaire on Waste (UNSD)

50. Reena Shah from UNSD presented the main concepts, definitions, and classifications in the waste section of the UNSD/UNEP Questionnaire on Environment Statistics. This included the waste cycle from generation to disposal or recovery, types of waste, types of waste treatment, waste producers according to ISIC, and the link to the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal. She explained the two main approaches to waste classification and described the potential data sources such as national registers, municipalities, waste treatment facilities, waste collectors and industries.

National experience (Energy Statistics in Zambia/ Mining in Zambia)

51. Zambia presented their country practices in the copper mining industry and in energy statistics. The presentations focused on an overall situation of the sectors as well as challenges faced. Environmental concerns such as air and water pollution, land degradation and environmental impact of activities (physical and biological) were presented. The regulatory frameworks developed and measures taken by the government to control the environmental concerns and impacts were also highlighted.

Discussion

52. During the discussion participants requested the need to simplify some of the scientific terms used on the UNEP/UNSD questionnaire in order to communicate with the public at large at national level. The assessment of the availability of data for the indicators proposed by UNSD was also requested. In another point, participants requested for clear identification of national contacts in charge of information exchange with UNSD.

53. The need to develop standard indicators with international guidelines adjusted to suit the country's major economic activity and condition was noted.

Session 9: Working group session on the selection of indicators, data availability and data collection

54. In group sessions, participants discussed the indicators of Waste, Air, Energy and Minerals proposed in the indicator lists that were used as a basis for selection. The

agreed upon indicator sets in the above areas are contained in the Annex finalized by UNEP.

55. In the plenary discussion it was proposed to assess the data availability of some indicators recommended by the Waste group. The difficulties of producing some of the indicators at the national level were also discussed.

Session 10: Application of Geospatial technology for the collection of environment statistics (ECA)

56. This agenda item was presented by Andre Nonguierma of ECA/ICT & Science and Technology Division. Geospatial technologies refer to all the means used for the measurement, analysis, and visualization of features or phenomena that occur on Earth. They include three different technologies that are all related to mapping features on the surface of Earth: global positioning systems (GPS), geographical information systems (GIS), and remote sensing (RS). The presentation highlighted how one can use analysis and modeling tools to collect environmental data, explore these data and their spatial coincidences at locations of interest; visualize spatial patterns and time trends based on main environment indicators of interest.

57. The presentation also pointed out: (i) Data Collection issues: the input of Geospatial Technology to improve environment statistics accuracy, integrity and actualization; (ii) Data Integration Issues: the approaches to integrating social, economic and environmental data in a common reference and format; (iii) Data Analysis issues: approach for data analysis and modeling to determine spatial occurrences and relationships between phenomena. Andre finally concluded with a highlight on spatial data infrastructure (SDI) as a tool to produce data and derived information products available to decision makers and the wider community of users.

Discussion

58. In the discussion that followed, issues related to capacity building, affordable resources and availability of these data to African countries were raised.

59. In response to these issues it was recalled that a resolution of the fifth Committee on Development Information (CODI V) urged the ECA to negotiate with satellite data providers to make relevant data affordable to African countries. It was mentioned that the availability of free software with limited data processing and analytical capabilities. With regard to Spatial Data Infrastructure, ECA is assisting countries to develop their National Spatial Data Infrastructure (NSDI) within the overall framework of their National Information and Communication Infrastructure (NICI).

Session 11: Dissemination of environment statistics

60. Under this agenda item, two presentations were made by ECA and UNEP respectively on “The use of the Internet as a tool for statistical dissemination” and “AEO-EIS and Africa Data portal”.

The use of the Internet as a tool for statistical dissemination (ECA)

61. Oumar Sarr of the African Centre for Statistics presented on the challenges faced by African NSOs in statistical dissemination and specially the use of the internet. In addition to paper publication, microfiche, fax response to special requests, public speeches and electronic format including CD-ROM, many African countries communicate by Internet and provide useful information to the public through this media. But, information posted on websites focused usually on countries profiles, NSOs programmes, publications and a limited number of data and indicators. Some countries rarely give metadata. Data on environment are almost never provided. Therefore, their dissemination is still weak. The usual indicators published relate to the climate including rainfall and temperature, and information concerning tourism including water resources and consumption, and land use. Few countries published on their websites indicators related to land erosion or denudation, forestry, biodiversity and waste.
62. The presenter further categorized the countries in six groups: (i) countries whose NSOs websites give a direct link with full environment indicators; (ii) countries whose NSOs websites provide indicators but published in reports; (iii) countries whose NSOs website give only indicators related to temperature and rainfall; (iv) NSOs website make a link to other national institutions which provide environment information; (v) no information are available in spite of the visible link; (vi) countries with no information on environment posted on the website; and (vii) website not working.

AEO-EIS and Africa Data portal (UNEP)

63. Christopher Ambala of UNEP presented the UNEP AEO-EIS and the Africa data portal (an online database) was demonstrated to the participants. The database is a client/server and web enabled and environmental data can be extracted and analyzed through the Internet.

Session 12: Towards a regional programme of environment statistics

64. Under this agenda item, two presentations were made by SADC and ECA respectively on the SADC statistics work programme and on the way towards a regional programme on environment statistics.

Regional statistics and plans (SADC)

65. The SADC representative, Fines Munkonze, highlighted the SADC statistics programme, the new SADC secretariat organizational structure and institutional framework. He highlighted recent SADC statistics projects and initiatives, progress under the SADC statistics programme and major challenges.
66. The ensuing discussion focused on the need of including environmental and natural resource issues in the SADC statistics programme.

Towards a regional programme of environment statistics (ECA)

67. Bakary Dosso from the African Centre for Statistics presented the steps towards the elaboration of a regional programme on environment statistics. The presentation was based on the key challenges raised during the week-long workshop and the major recommendations to be discussed and adopted. The presentation highlighted the objective of such a programme, the expected accomplishments, the activities to be undertaken and their expected outputs, the relationship of the programme with existing initiatives, the timeframe and the financing of the regional programme.
68. The programme is expected to strengthen capacity to produce and use environment indicators and statistics at national, sub-regional and regional level in Africa, in the framework of NSDS, in support of policies, including reporting on nationally and internationally agreed development goals.
69. The presenter proposed three expected accomplishments: (i) Development and adoption of a core set of environmental indicators and statistics for national and regional reporting, (ii) Mainstreaming of environment issues and concerns in data collection systems to inform policy debate and design, and (iii) Improved technical capacity of African national statistical systems to collect, compile, analyze and disseminate indicators and statistics on environment and other pillars of sustainable development.
70. The programme is expected to take advantage of different initiatives and conduct expert group meetings in specific areas of environment statistics, assist in institutional set up, training, networking and publication of environment statistics. The programme will also support the elaboration and implementation of NSDS within the AEIN framework and build on partnerships between stakeholders including ECA, UNEP, UNSD, UNDP, AU, AfDB, FAO, Afristat, and Inwent.

Closing session: discussion and adoption of conclusions and recommendations

71. The meeting discussed and amended the draft recommendations presented by the rapporteur. After discussion, the following recommendations were adopted.

Recommendations of the Workshop on Environment Statistics held in Addis Ababa, Ethiopia, from 16 to 20 July 2007

The participants from the 17 African countries, African regional organizations to the workshop,

Having examined the agenda of the workshop and countries, sub-regional, regional, and international reports on: (i) Environmental policy and the need for environmental indicators and statistics; (ii) Concepts and methods of environmental statistics and indicators; (iii) Institutional aspects of environmental statistics; (iv) Statistics on freshwater, coastal and marine resources, environmental health and natural disasters; (v) Statistics on land use and agriculture, forests and biodiversity; (vi) Statistics on waste, air, energy and minerals; and (vii) Collection and dissemination challenges;

Appreciative of the role played by UNEP, UNSD, ECA, UNDP, AfDB, AUC and other partners in building the capacity of African countries in environment statistics;

Bearing in mind the critical role of environment issues in sustainable development policies and programmes;

Aware of the NEPAD Initiative on Environment and the action plan of its implementation;

Concerned by the scarcity of data and information on environment to assess the state of the environment in Africa;

Recognizing the bottlenecks statistical training centers are facing in building and strengthening statistical capacities; and

Appreciative of the effort made by the AEIN and the AEO process, the UNSD programme on training and capacity building in environment statistics and the establishment of the African Centre for Statistics (ACS) as part of the ECA repositioning process to better serve Africa;

Recommended:

Institutional and coordination issues

1. Countries (which have not done so yet) to design a National Strategy for the Development of Statistics (NSDS) as the overarching framework for statistical capacity development, including the appropriate legal framework, institutional set-up, distribution of responsibilities and coordination mechanisms;
2. UNEP, UNSD, ECA, UNDP and AfDB to assist countries to develop and implement a sectoral strategy for the development and mainstreaming of environment statistics as a component of the NSDS, capitalizing on the outcomes of the African Environment Information Network, the African Environment Outlook process and global/national development reports;

3. The strengthening of coordination, collaboration and partnerships at country, sub-regional and regional level by developing appropriate interim mechanisms of data exchange where the legal framework does not yet exist;
4. Recognising that some important environment issues are transboundary, urged ECA,UNSD, and other partners to support UNEP AEIN Collaborating Centers and National Focal points in developing a sub-regional environment statistics strategy and networking;
5. UNEP, UNSD, ECA, UNDP and AfDB to support countries in reporting on MDG Goal 7;
6. National statistical offices to put in place an environment statistics unit, strengthen the unit's capacity and strongly collaborate with the AEIN focal point at national level;

Capacity building

7. ECA, UNEP, UNSD, UNDP and other partners to work together within the framework of the Bali Strategic Plan for Technology Support and Capacity Building, to develop training materials including e-learning tools on environment statistics and pilot test in the AEIN and in countries where the One UN concept is in use;
8. The development of a curriculum on environment statistics and sustainable development indicators to be used in African Statistics Training Centres and universities engaged in statistical training to establish a firm conceptual foundation and ensure the sustained availability of trained human resources;

Advocacy

9. The strengthening of data user-producer dialogue;
10. Countries, sub-regional and regional organizations to put environment statistics on the agenda of the African Statistics Day to promote understanding and use of environment statistics among policy and decision makers;

Data Gaps

11. To identify data gaps at national, sub-regional and regional levels based on the agreed core set of environmental indicators and find mechanisms to fill in those gaps;
12. UNSD and UNEP to include natural disasters, coastal and marine environment, and biodiversity in the scope of their questionnaire;

Methodology

13. Countries with the assistance of ECA, UNEP, UNSD, UNDP and other partners to agree on detailed concepts, methods and definitions for the calculation of the indicators that are consistent with existing international standards;

Knowledge management and networking

14. Within the framework of AEIN, national, sub-regional, and regional organizations, to disseminate environment statistics and spatial data on-line through an African data portal (on-line database);

Core set of environment indicators

15. Countries with the assistance of ECA, UNEP, UNSD and other partners to conclude the development of a core set of African environment indicators to reflect the environmental national priorities and the needs of national, sub-regional, regional and international organizations;
16. The updating of the NEPAD-AEO core set of indicators to be harmonized with the agreed upon core list of indicators identified by countries, regional and international organizations during this workshop; and
17. To put in place a task force (AEO-Data Working Group, ECA, UNSD and other partners) that will undertake the following: to streamline indicators and develop methodology sheets; circulate to the group and other regions; finalize the list of indicators; test them on selected countries and organize seminars for the launching.

Annex 1
List of Participants

Participant Name	Organization	Address	Phone	Fax	e-mail
Countries					
Angola					
Grilo Antonio	Ministério urbanismo e Ambiente Republica de Angola	Av. 4 de Fevereiro no 30 Edificio Atlântic Luanda, Angola	(244) 912242012	(244) 231 0003	grilotonito@yahoo.com.br
Botswana					
Julia Dithlong	Department of Environmental Affairs	Travaglino House, Second Floor Old Lobatse Road, Private Bag 0068 Gaborone, Botswana	267 3902050	267 3902051	jkejang@gov.bw,
Motshabi Moreti	Central Statistics Office	Government enclave Private Bag 0024 Gaborone, Botswana	267- 3671300	267-3952201	mmoreti@gov.bw,
Ethiopia					
Fitaweke Metaferia Beyene	Ministry of Finance and Economic Development National Accounts Department	Addis Ababa, Ethiopia	251 11 122 66 43 ; 251 91 165 43 23 (cell phone)		
Jemal Abdi	Central Statistical Agency	Central Statistical Agency, P.O.Box 1143 Addis Ababa, Ethiopia	251 911 021294, 251 11 563883		jemalabdiali@yahoo.com
Negussie Dejene	Central Statistical Agency	P.O.Box 1143 Addis Ababa, Ethiopia	251 11 568460, 251 91 113 7716		negussiedejene@yahoo.com

Participant Name	Organization	Address	Phone	Fax	e-mail
Tesfaye Woldeyes	Environmental Protection Authority	Environmental Protection Authority P.O. Box 12760 Addis Ababa, Ethiopia, Ethiopia	251 911 606848	251 11 6464882 / 76	gamtesfaye@yahoo.com
Kenya					
Hezbourne Otieno Nyakori Obongo	Kenya National Bureau of Statistics	P.O.Box 30266-00100, Nairobi, Kenya	254-20-317586	254-20-315977	obongo@cbs.go.ke
Lesotho					
Hooхло Qongqong	National Environment Secretariat, Ministry of Tourism, Environment & Culture	Ministry of Tourism, Environment & Culture, 6th Floor, Post Office Building, Kingsway Road, P. O. Box 10993, Maseru 102, Lesotho	266 22311767	266 22311139	qhooхло@hotmail.com,
Sophonia Thabo Joseph	Bureau of Statistics	Bureau of Statistics, P.O.Box 455, Maseru - 100, Lesotho	266-22323852 266-63021862	266-22310177	t.sophonea@bos.gov.ls, t.sophonea@yahoo.com,
Malawi					
Benon Bibbu Yassin	Ministry of Lands and Natural Resources	Environmental Affairs Department, Private Bag 394, Lilongwe 3, Malawi	265 1 771111	265 1 773379	benyassin@yahoo.com, benyassin@gmail.com
Shelton Kanyanda	National Statistical Office	P.O.Box 333 Zomba, Malawi	265-8-376284	265 1525130	skanyanda@hotmail.com,
Mauritius					
Bibi Sadhna Banoo Sham Jacmohun	Central Statistics Office	Central Statistical Office LICI BLDG, J.Kennedy st, Port-Louis, Mauritius	230-2122314, 230-2106186	230-2114150	ssham-jacmohun@mail.gov.mu, cso@mail.gov.mu

Participant Name	Organization	Address	Phone	Fax	e-mail
Priya Durshini Thaunoo-Chadee	Department of Environment, Ministry of Environment & NDU	Department of Environment Ministry of Environment & NDU 4th Floor Ken Lee Tower, Cnr St. Georges & Barracks Streets, Port- Louis, Mauritius	230 2036200 230 2119178	230 2105751	pthaunoo@mail.gov.mu, dirdoe@mail.gov.mu
Mozambique					
Delfina José Cumbe	Instituto Nacional de Estatística Direcção de Estatísticas sectoiais e de Empresas	Av: Ahmed Sekou Toure, No 218°/85, G.P 493 N°21 8°/85, Maputo, Mozambique	+258 21498141	+258 21498141 +258 21490507	delfina.cumbe@ine.gov.mz
Ramalho Rodrigo	Ministry for co-ordination of Environmental Affairs	Rua de Kassuende, NR. 167/Maputo Maputo, Mozambique	(258) 21 498141 (258) 21 465141	(258) 21 498141 (258) 21 465141	ramalho54@yahoo.com.br
Namibia					
Cornelia-Snerry Mungungu	Directorate of Environmental Affairs (DEA) Ministry of Environment and Tourism	Levinson Arcade, Capital Centre Building Floor 6, Private Bag 1330 , Namibia	+264 61 284 2725 +264 81 124 3657	(264) 61 240339	snerry@dea.met.gov.na, mungungu14273@itc.nl
Seychelles					
Justin Paul Nicholas Prosper	Ministry of Environment and Natural Resources and Transport, Policy Planning and Services Division	Ministry of Environment, Natural Resources and Transport P.O. Box 1145 Victoria, Mahe, Seychelles	248 670 418	248 610 647	j.prosper@pps.gov.sc
Michel Jean Mellie	National Statistics Bureau	Cavavelle House, P.O.Box 206 Victoria, Seychelles	+248 611 668	+248 225 339	michel@nsb.gov.sc, m_mellie1@hotmail.com

Participant Name	Organization	Address	Phone	Fax	e-mail
South Africa					
Nangamso Dyantyi	Department of Environmental Affairs and Tourism	Department of Environmental Affairs and Tourism Private Bag X447, Pretoria, 0001 Fedsure Building, 315 Pretorius Street Pretoria 0001, South Africa	(27) 12 310 3837	(27) 12 322 0767	NDyantyi@deat.gov.za
Sudan					
Fatima Said Alamin Mohmed	Central Bureau of Statistics	Khartoum, Sudan	+249 183 777 255	+249 183 771 860	ehsa80@yahoo.com,
Osman-Elasha Balgis	Higher Council of Environment and Natural Resources	Climate Change Unit, High Council of Environment and Natural Resources (HCENR) Ministry of Environment and Physical Development Khartoum, Sudan	249 183 784279 249 183 786903	249 183 877617	balgis@yahoo.com, hcenr@sudanmail.net
Swaziland					
Fortune Themba Mhlanga	Central Statistical Office	Central Statistical Office, P.O.Box 456 Mbabane, Swaziland	002-684041251 002-686134008	002-684043300	fortunemhlanga@yahoo.co.uk,
Ishmael Ndwandwe	Swaziland Environment Authority	Swaziland Environment Authority P.O. Box 2602 , Swaziland	(268) 404 6420	(268) 404 1719	ishndwandwe@yahoo.co.uk
Tanzania					
Angela Emmanuel Malisa	National Environment Council (NEMC)	National Environment Council (NEMC), P.O. Box 77257 Dar-es-Salaam, Tanzania	255 022 0784 703350	255 (022) 2111579	aemalisa2003@gmail.com, aemalisa2003@yahoo.com
Ibrahim Mpagama Masanja	National Bureau of Statistics	National Bureau of Statistics, P.O.Box 796 , Tanzania	+255 22 2122722 /3/4	255 22 2130852	imasanja@nbs.go.tz, iiddi@yahoo.com

Participant Name	Organization	Address	Phone	Fax	e-mail
Uganda					
Mary Goretti Kimono Kitutu	National Environment Management Authority (NEMA)	National Environment Management Authority (NEMA), P.O. Box 22255 Kampala, Uganda	256-41- 251064/65/68	256-41-257521	gkitutu@nemaug.org, mg_kimono@yahoo.com
Stephen Gahwera Bahemuka	Uganda Bureau of Statistics (UBOS)	Plot A Colville Street, Kampala, Box 7186 Kampala, Uganda	256-772-674124	256-41-237533	stephen.bahemuka@ubos.org, sbahemuka@yahoo.co.uk
Zambia					
Gift Sikaundi	Environmental Council of Zambia	Environmental Council o f Zambia, Corner Suez & Church Roads, P.O. Box 35131 Lusaka, Zambia	260 1 254023/59	260 1 254164	gift@necz.org.zm, giftsikaundi@yahoo.com
Masiliso Sooka	Central Statistical Office	CSO off Naionalist Road, Opposite Ridgeway Campus, Box 31908 Lusaka, Zambia	260-977871175	(260-1)253468	msooka@zamstats.gov.zm, msooka@hotmail.com
Zimbabwe					
Abraham Matiza	Ministry of Environment & Tourism	Ministry of Environment & Tourism Private Bag 7753 Corner 4th Street/Central Avenue Causeway Harare, Zimbabwe	263) 4 701681 / 3	(263) 4 252 673	climate@ecoweb.co.zw
Manasa Viriri	Central Statistical Office	Central Statistical Office, P.Bag 243 Causeway Cnr/Central Avenue, Causeway Harare, Zimbabwe	263-4-706681/8	263-4-728529	mviriri@cso.zarnet.ac.zw,

Participant Name	Organization	Address	Phone	Fax	e-mail
Institutions					
Maurice Mubila	AfDB	African Development Bank (AfDB) B.P. 323 – 1002 Tunis Belvedere, Tunisia Tunis, Tunisia	(216) 71103653	(216) 71103743	m.mubila@afdb.org
Brave Ndisale	AU Commission	Department of Rural Economy and Agriculture, Addis Ababa, Ethiopia	251 11 551 1203		ndisaleb@africa-union.org,
Hiwot Tifsihit	AU Commission	Addis Ababa, Ethiopia	(251 11) 5 51 92 87	(251 11) 5 51 02 49	tifsihith@africa-union.org
Ahmed Abdelrehim	CEDARE	Centre for Environment & Development for the Arab Region and Europe (CEDARE) 2 Hegaz St., CEDARE Bldg. Heliopolis, P.O. Box 1057 Heliopolis Bahary Cairo, Egypt	202 2451 3921/2/3/4 Ext. 600	202 2451 3918	ahrehim@cedare.int,
Zakayo Msokwa	Eastern Africa Statistical Training Centre (EASTC)	P.O.Box 35103, Dar-es-Salaam, Tanzania	255-754298770 255-22-2410309	255-22-2410053	zmsokwa@yahoo.com
Christopher Ajaero	ECOWAS Commission	No. 101 Yakubu Gowon Crescent, Asokoro Abuja, Nigeria	+234 803 718 6349	+234 9314 7646	chris_glory@yahoo.com
Dominic Ballayan	FAO	Statistics Division, FAO, ESSG, C442, Viale delle Temele Cavacalla - 00100, Rome, Italy	+39-06-57056268	+39-06-5705615	dominic.ballayan@fao.org
Sachooda Ragoonaden	Indian Ocean Commission (IOC)	Indian Ocean Commission, B.P. 7 Q4, Avenue Sir Guy Forget Quatre Bornes Port Louis, Mauritius	230 465 0116	230 4546167	rajouma@yahoo.com

Participant Name	Organization	Address	Phone	Fax	e-mail
Gideon Badagawa	ISAE	Makerere University, P.O.Box 7062 Kampala, Uganda	256-414-541558, 256-414-540409	256-414-530756	gbadagawa@psfuganda.org
Jérôme Guefack	IUCN-ROCA	Chargé des TIC UICN- BRAC B.P. 5506, Yaoundé, Cameroon	+237 2221 64 96	+237 2221 64 97	jerome.guefack@iucn.org,
Fines Munkonze	SADC Secretariat	Private Bag 0095, Gaborone, Botswana	267-3951863	267-3924099	fmunkonze@sadc.int,
Clever Mafuta	SARDC-IMERCSA	Southern Africa Research and Documentation Centre (SARDC-IMERCSA)15 Downie Avenue, Belgravia P.O. Box 5690 Harare, Zimbabwe	(263) 4 791141 / 3	(263) 4 791271	cmafuta@sardc.net
Othusitse Lekoko	UNDP-BOTSWANA	Environment Support Programme Department of Environmental Affairs Private Bag 0068 Travaglini House, 2nd Floor Old Lobatse Rd. Gaborone, Botswana	(267) 390 2050, (267) 71315214	(267) 390 2051 / 390 1437	olekoko@gov.bw, ot@botsnet.bw
Verity M. Nyagah	UNDP-SOUTH AFRICA	UNDP Drylands Development Centre 351 Schoeman Street P.O. Box 13196, The Tramshed Pretoria 0126, South Africa	(27) 12 354 8133, (27) 82 414 3982	(27) 12 354 8111	verity.nyagah@undp.org

Participant Name	Organization	Address	Phone	Fax	e-mail
Christopher O. Ambala	UNEP-NAIROBI	United Nations Environment Programme P. O. Box 30552, Nairobi, Kenya Nairobi, Kenya	254 20 7623818	254 20 7624309	chris.ambala@unep.org,
Dominique Revet	United Nations - Climate Change Secretariat (UNFCCC)	Martin Luther King Strasse 8, 53175, Bonn, Germany	+49 228 815 1334	+49 228 815 1599	DRevet@unfccc.int
Eszter Horvath	UNSD	United Nations Statistics Division DC2-1418 2 United Nations Plaza New York, NY 10017 New York, USA	212-963-4581	212-963-0623	horvath@un.org
Reena Shah	UNSD	United Nations Statistics Division, DC2-1412 2 United Nations Plaza New York, NY 10017 New York, USA	(212) 963-4586	(212) 963-0623	shahr@un.org
Ben Kiregyera	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	251 11 544 3210	251 11 551 0389	Bkiregyera@uneca.org
Dimitri Sanga	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	251 11 544 3050	251 11 551 0389	dsanga@uneca.org
Andry Andriantseho	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	251 11 544 3603	251 11 551 0389	Aandriantseho@uneca.org
Oumar Sarr	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	251 11 544 3614	251 11 551 0389	OSarr@uneca.org
Bakary Dosso	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	251 11 544 3671	251 11 551 0389	BDosso@uneca.org
Kidus Mengistu	UNECA	Economic Commission for Africa, P.O. Box 3001,	251 11 544 3235	251 11 551 0389	KMengistu@uneca.org

Participant Name	Organization	Address	Phone	Fax	e-mail
		Addis Ababa, Ethiopia			
Tesfaye Belay	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	251 11 544 3461	251 11 551 0389	TBelay@uneca.org
Michael Girma	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	251 11 544 3645	251 11 551 0389	MGirma@uneca.org
Abiy Kebede	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia			AbiyK@uneca.org
Ousmane Laye	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	251-11 544 5319	251-11 551 0389	olaye@uneca.org
Charles Akol	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	251-11 551 7200	251-11 551 0390	cakol@uneca.org
Andre Nonguierma	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	251-11 551 7200	251-11 551 0391	anonguierma@uneca.org
Yoseph Mekasha	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	251-11 551 7201	251-11 551 0392	ymekasha@uneca.org
Paul Belanger	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	251-11 551 7202	251-11 551 0393	pbelanger@uneca.org
Isatou GAYE,	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	251-11 544 3089		igaye@uneca.org
Kwadwo Tutu	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	251-11 544 3236		
Joan Kagwanja,	UNECA	Economic Commission for Africa, P.O. Box 3001, Addis Ababa, Ethiopia	251-11 544 3518		jkagwanja@uneca.org

Annex 2

Workshop on Environment Statistics

(Addis Ababa, 16 to 20 July 2007)

Work Schedule¹

Monday, 16 July

8.30-10:30 Registration, Security Pass and ID office
Coffee, UNCC

10:30-11:15 Opening session

- | | |
|-------------|--|
| 10:30-11:00 | - Welcome address (ECA) |
| | - UNSD |
| | - UNEP |
| 11:00-11:15 | - Election of Bureau, Adoption of agenda and work schedule |

11:15-1:00 Session 1: The need for environment statistics and indicators

- | | |
|-------------|--|
| 11:15-11:40 | - The needs for environment statistics in Africa (ECA) |
| 11:40-12:05 | - National needs (Ethiopia) |
| 12:05-12:35 | - International needs (UNSD) |
| 12:35-1:00 | - AEIN/GEO/AEO initiative (UNEP) |

1:00-2:30 *Lunch*

2:30-4:00 Session 2: Environment statistics and indicators: concepts and methods

- | | |
|-----------|---|
| 2:30-3:00 | - Frameworks for environment statistics and indicators (UNSD) |
| 3:00-3:30 | - Development of environment indicators (UNSD) |
| 3:30-4:00 | - Linkages to environment accounting (UNSD) |

4:00-4:30 *Coffee Break*

4:30-5:30 Session 3: Institutional aspects of environment statistics

- | | |
|-----------|---|
| 4:30-5:00 | - Regional experience – ECOWAS Strategic Framework (ECOWAS) |
| 5:00-5:30 | - National experiences (Botswana, Mauritius and Zimbabwe) |

¹ The schedule of Wednesday and Thursday was switched due to logistical reasons

Tuesday, 17 July

9:00-12:30	Session 4: Statistics on Freshwater, Coastal and marine resources, Environmental health, and Natural disasters
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- | | |
|-------------|---|
| 9:00-9:30 | - Regional experience and data analysis in North Africa (CEDARE) |
| 9:30-10:00 | - Status of environment statistics in the Indian Ocean Region (IOC) |
| 10:00-10:30 | - International/regional data sources for the indicators (UNSD) |

10:30-11:00 *Coffee Break*

11:00-12:30	Session 4: Statistics on Freshwater, Coastal and marine resources, Environmental health, and Natural disasters (contd.)
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- | | |
|-------------|--|
| 11:00-12:00 | - Data collection and compilation at national level (UNSD) |
| 12:00-12:30 | - UNSD/UNEP Questionnaire 'Water' tables (UNSD) |

12:30-2:00 *Lunch*

2:00-5:00	Session 5: Working group session on the selection of indicators, data availability and data collection
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- | | |
|-----------|----------------------------------|
| 2:00-3:30 | - Moderated discussion in groups |
|-----------|----------------------------------|

3:30-4:00 *Coffee Break*

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|-----------|--|
| 4:00-5:00 | - Presentation of agreed indicators to plenary session |
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Wednesday, 18 July

9:00-12:30	Session 6: Statistics on Land use and agriculture, Forests and Biodiversity
9:00-9:30	- Benchmarks and Indicators in support of Land Policy and Land Administration Reforms in Africa (AU-ECA-AfDB)
9:30-10:00	- Biodiversity statistics (IUCN ROCA)
10:00-10:30	- Land Use Statistics (FAO) <ul style="list-style-type: none">• FAO Land Use database: presentation, data sources, updates, accessibility. International versus country data.• Land use/land cover classifications. Sources of data: land registers, remote sensing. (Focus: Agriculture and Forestry)• Statistics on Land tenure
10:30-11:00	<i>Coffee Break</i>
11:00-12:30	Session 6: Statistics on Land use and agriculture, Forests and Biodiversity (contd.)
11:00-11:30	- UNSD/UNEP Questionnaire 'Land' tables (UNSD) <ul style="list-style-type: none">• Land Use tables• Land Degradation tables
11:30-12:30	- Environment and agriculture (FAO) <ul style="list-style-type: none">• Environmental impact of the use of irrigation, fertilizers and pesticides• Forest and Fishery statistics
12:30-2:00	<i>Lunch</i>
2:00-5:00	Session 7: Working group session on the selection of indicators, data availability and data collection
2:00-3:30	- Moderated discussion in groups
3:30-4:00	<i>Coffee Break</i>
4:00-5:00	- Presentation of agreed indicators to plenary session

Thursday, 19 July

9:00-12:30	Session 8: Statistics on Waste, Air, Energy, and Minerals
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|-------------|---|
| 9:00-9:30 | - Environmental and policy issues: (UNFCCC) |
| 9:30-10:00 | - International/regional data sources for the indicators (UNFCCC) |
| 10:00-10:30 | - Data collection and compilation at national level (UNFCCC) |

10:30-11:00 *Coffee Break*

11:00-12:30	Session 8: Statistics on Waste, Air, Energy, and Minerals (contd.)
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|-------------|---|
| 11:00-11:45 | - UNSD/UNEP Questionnaire 'Air' and 'Waste' tables (UNSD) |
| 11:45-12:30 | - Energy statistics in Zambia / Mining in Zambia (Zambia) |

12:30-2:00 *Lunch*

2:00-5:00	Session 9: Working group session on the selection of indicators, data availability and data collection
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|-----------|----------------------------------|
| 2:00-3:30 | - Moderated discussion in groups |
|-----------|----------------------------------|

3:30-4:00 *Coffee Break*

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|-----------|--|
| 4:00-5:00 | - Presentation of agreed indicators to plenary session |
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Friday, 20 July

9:00-9:45	Session 10: Application of Geospatial technology for the collection of environment statistics (ECA)
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9:45-10:30	Session 11: Dissemination of environment statistics
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|-------------|--|
| 9:45-10:15 | - The use of internet as a tool for statistics dissemination (ECA) |
| 10:15-10:30 | - AEO-EIS and Africa Data Portal (UNEP) |

10:30-11:00	<i>Coffee Break</i>
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11:00-12:30	Session 12: Towards a regional programme of environment statistics– list of indicators and set of tabulations
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|-------------|--|
| 11:00-11:15 | - Regional experience and plans (SADC) |
| 11:15-11:30 | - Towards a regional programme on environment statistics (ECA) |

11:30-1:00	Closing session: discussion and adoption of conclusions and recommendations, list of indicators and set of tabulations (UNSD/UNEP/ECA)
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1:00-1:15	Evaluation
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Annex 3

Natural Disasters and Environmental Performance

Priority area	Proposed indicator	Code	Links to MDG, CSD, NEPAD, Other
Exposure to various types of natural hazards, drought, floods etc	Percentage of population living in hazard prone areas [CSD]	2	CSD/ NEPAD Other
	Frequency of extreme events [*]	3	NEPAD/ Other
Impacts to various types of natural hazards, drought, floods etc	Human and economic loss due to natural disasters [CSD]	1	CSD/ NEPAD/ Other
Inadequate early warning system for the timely prediction of location and intensity of future natural disasters	% of population having access to information from EWS	3	
Adaptive capacity	Public expenditure on disaster reduction and related measures	4	

- * Indicates repetition of the indicator in the Air section, Climate change priority area
- Other: Indicates that the same or similar indicator is used by an International, Regional or Intergovernmental organization
- Coding:
 1. Identical indicator exists (MDG, CSD, etc.) Definition and methodology available.
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 3. Definition and methodology to be developed
 4. Indicator has to be selected and developed.
 5. Suggested for deletion
 6. Add new indicator

Air

Priority areas	UNSD Proposals	Code	Links to MDG, CSD, NEPAD, Other
Air quality	Ambient concentrations of air pollutants in urban areas [CSD]	1	CSD/ NEPAD/ Other
Climate change	Carbon dioxide emissions, total, per capita and per \$1 GDP (PPP)[MDG]	1	MDG/ CSD/ NEPAD/ Other
	Emissions of greenhouse gases [CSD]	1	CSD/ NEPAD/ Other
	Frequency of extreme events [*]	1	NEPAD/ Other
	Annual variability of rainfall (at least 30 years)	4	NEPAD/ Other
	Annual variability of temperature (at least 30 years)	4	NEPAD/ Other
Ozone Layer Depletion	Consumption of ozone-depleting substances [MDG]	6/1	MDG/ CSD/ Other

- * Indicates repetition of the indicator in the Natural Disasters and Environmental Performance, Exposure to various types of natural hazards priority area
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Land use

Priority area	Proposed indicator	Code	Links to MDG, CSD, NEPAD, Other
Land tenure/ownership	% of population (by groups, gender) with secure land tenure	3	NEPAD/ Other
	% of land area by ownership categories	3	NEPAD
Land Quality (degradation)	Land affected by desertification [CSD]	1	CSD/ NEPAD/ Other
	Land degradation [CSD] -wind/water erosion -salinization	1	CSD/ NEPAD/ Other
	(%) proportion of land/area effected by contamination	3	NEPAD/ Other
Land use change	Land use change [CSD]	3/1	CSD/ NEPAD/ Other

Agriculture

Priority area	Proposed indicator	Code	Links to MDG, CSD, NEPAD, Other
Agriculture	Agricultural Production Index [FAO]	1	NEPAD/ Other
Irrigation	% of land/agricultural area under irrigation	3	NEPAD/ Other
Use of pesticides/ fertilizers	Use of agricultural pesticides [CSD]	1	CSD/ NEPAD/ Other
	Number of reported cases of contamination of toxic substances	3	NEPAD
	Fertilizer consumption [FAO]	1	CSD/ NEPAD/ Other
Rangeland carrying capacity	Livestock pressure over carrying capacity [LADA]	1	NEPAD/ Other

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Forests and woodlands

Priority areas	UNSD Proposals	Code	Links to MDG, CSD, NEPAD, Other
Forest change (loss/ degradation)	Proportion of land area covered by forest [MDG]	1	MDG/ CSD/ NEPAD/ Other
	% of forests damaged (abiotic, biotic and human induced) [UNECE/FAO]	1	CSD/ Other
	Area of forest under sustainable forest management [CSD]	1	CSD/ Other
	Rate of afforestation/ deforestation	3	NEPAD/ Other
Forest resources management	% of exports of forestry products	3	NEPAD/ Other
Established protected areas (forests etc.)	% of protected forest areas to the total forest area	1	Other

- Other: Indicates that the same or similar indicator is used by an International, Regional or Intergovernmental organization

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Coastal and Marine Resources

Priority areas	UNSD Proposals	Code	Links to MDG, CSD, NEPAD, Other
Urbanization of coastal zones	Percentage of total population living in coastal areas [CSD]	1	CSD/ NEPAD/ Other
Coastal and marine pollution	Proportion of coastal areas affected by pollution	3	CSD/ NEPAD/ Other
	Coastal water quality	6/1	NEPAD/ Other
	Number and area of marine aquaculture sites	3	
Coastal erosion/ sedimentation	% change in coastal areas lost	3	NEPAD/ Other
Marine biodiversity	Number of marine species (mangroves, fisheries, etc) threatened and extinct	3	NEPAD/ Other
	Change in area under mangrove forest	3	NEPAD/ Other
	Proportion of marine area protected [CSD]	1	MDG/ CSD/ NEPAD/ Other
	Total & per capita marine fish catch	1	NEPAD/ Other
	Total & per capita marine aquaculture fish catch	1	NEPAD/ Other
	Proportion of fish stocks within safe biological limits [MDG]	6/1	MDG/ CSD/Other
Climate change- sea level rise	Annual sea level change	3	NEPAD
Poverty eradication	Number of people making a living from marine resources	3	Other

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Fresh water

Priority areas	UNSD Proposals	Code	Links to MDG, CSD, NEPAD, Other
Water Accessibility;	Proportion of population using an improved drinking water source [MDG]	1	MDG/ CSD/ NEPAD/ Other
	% of population connected to public water supply	1	NEPAD/ Other
Water Quantity;	Proportion of total water resources used [MDG]	1	MDG/ CSD/ NEPAD/ Other
	Ratio of external renewable water resources to total renewable water resources	6/1	Other
	Total annual renewable water resources per capita	6/1	NEPAD/ Other
	Change in surface water discharge	3	NEPAD
	Annual groundwater recharge	3	NEPAD/ Other
Water Quality (Pollution);	Emissions of organic water pollutants (BOD) total/per worker	3	NEPAD/ Other
	Biochemical oxygen demand in water bodies [CSD]	1	CSD / NEPAD Other
	Chemical oxygen demand in water bodies	1	Other
	Average annual concentration of total phosphorus in lakes and rivers	1	NEPAD/ Other
	Average annual concentration of total dissolved solids/sediment flux in lakes and rivers	1	NEPAD/ Other
	Average annual concentration of total nitrogen in lakes and rivers	1	NEPAD/ Other
	Average annual concentration of dissolved oxygen in lakes and rivers	1	NEPAD/ Other
	Presence of faecal coliforms in freshwater [CSD]	1	CSD / Other

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Water usage;	Total annual water use per capita	1	NEPAD/ Other
	% of (change in amount/volume) freshwater used for domestic use, irrigation, industry	1	NEPAD/ Other
	Water use intensity by economic activity [CSD]	6/1	CSD/ Other
Water borne diseases (bilharzias, river blindness, sleeping sickness, etc);	Incidence of water borne diseases	3	NEPAD/ Other
Water Mgt issues	Developed national & river basin IWRM plans	3	NEPAD
	Wastewater treatment [CSD]	1	CSD/ Other
	% of population connected to wastewater collecting system	6/2	Other
	Volume of treated wastewater for domestic use	6/3	Other
	Amount/volume of disposal of wastewater into wetlands	3	NEPAD
	% of treated waste water produced from wetlands	3	NEPAD
Water availability	Urban water supply from dams	4	NEPAD
	Abstraction from boreholes for domestic use in rural/urban settings (per capita yield)	3	NEPAD

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Biodiversity

Priority areas	UNSD Proposals	Code	Links to MDG, CSD, NEPAD, Other
Ecosystem	-Proportion of terrestrial area protected by ecological region [CSD]	1	MDG/ CSD/ NEPAD/ Other
Wetlands	Number of wetland species threatened and extinct	3	NEPAD
	% change of the area of wetlands	3	NEPAD/ Other
	Number of Ramsar sites	1	Other
	% of rehabilitated/total area of wetlands	3	NEPAD
	Number of restored wetlands sites	3	NEPAD
Species	Threatened plant species as a % of total known plant species	1	NEPAD/ Other
	Threatened animal species as % of total known animal species	1	NEPAD/ Other
	Proportion of species threatened with extinction [MDG]	6/1	MDG
	Abundance of selected key species [CSD]	1	CSD/ Other
Invasive Species	Abundance of invasive alien species [CSD]	1	CSD/ NEPAD/ Other

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Energy and minerals

Priority areas	UNSD Proposals	Code	Links to MDG, CSD, NEPAD, Other
Energy production	Primary energy production total, per capita and by source	1	NEPAD/ Other
Energy consumption	Share of renewable sources in total energy use [CSD]	1	CSD/ NEPAD/ Other
	Share of imports in total energy supply	6	Other
	Intensity of energy use, total and by economic activity [CSD]	1	CSD/ Other
	Annual energy consumption total and by main user category [CSD]	1	CSD/ NEPAD/ Other
	Total energy consumption per capita	6/1	Other
	Share of households with access to electricity	1	CSD/ NEPAD/ Other
	% of traditional fuel energy use	3	NEPAD/ Other

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Waste

Priority areas	UNSD Proposals	Code	Links to MDG, CSD, NEPAD, Other
Development and population growth and urbanization	Generation of waste [CSD]	1	CSD/ Other
	Waste treatment and disposal [CSD]	1	CSD/ Other
	Municipal waste collected per capita	1	NEPAD/ Other
	Municipal waste collected as a % of the amount of waste generated	3	Other
Appropriate and sound guidelines for waste management systems appropriate for the environmental conditions	% share of population served by municipal waste collection	1	NEPAD/ Other
Hazardous substance (as defined in the Basel Convention)	Generation of hazardous waste [CSD]	1	CSD/ NEPAD/ Other
	Total hazardous waste imported	1	Other
	Total hazardous waste exported	1	Other
	Number and capacity of facilities for the disposal of hazardous waste	4	Other

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Health and Environment

Priority areas	UNSD Proposals	Code	Links to MDG, CSD, NEPAD
Infant and child mortality	Under five mortality rate [MDG]	1	MDG/ CSD/ NEPAD/ Other
	Maternal mortality ratio per 100,000 live births [MDG]	1	MDG/ NEPAD/ Other
	Mortality rate	1	NEPAD
Burden of ill health	% of population with access to primary health care facilities [CSD]	1	CSD/ NEPAD
	Public expenditure in health (in % of GNP)	1	NEPAD/ Other
	Proportion of population using an improved sanitation facility [MDG]	1	MDG/ CSD/ NEPAD/ Other
Informal Settlements	Proportion of urban population living in slums [MDG]	6/1	MDG/ CSD/ Other
	Informal Settlements, area and percentage of population	6/3	NEPAD/ Other

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