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## **Report on Environment Statistics and Climate Change**

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## I. Introduction

The first United Nations Conference on the Human Environment (UNCHE) was held in Stockholm, Sweden from 5 to 16 June 1972. This was the first major international gathering focused on human activities in relationship to the environment, and it laid the foundation for environmental action at an international level. The Conference recommended the gathering of data on specific environment variables to determine and predict important environmental conditions and trends. Following this conference, the United Nations Environmental Programme (UNEP) was launched in order to encourage United Nations agencies to integrate environmental measures into their programmes.

The United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit, took place in Rio de Janeiro, [Brazil](#), from June 2-14, 1992. The Rio Declaration on Environment and Development set 27 legally non-binding principles designed to commit governments to ensure environmental protection and responsible development. The Declaration recognizes that the only way to have long-term social and [economic progress](#) is to link it with environmental protection and to establish equitable global partnerships between governments and key actors of civil society and the business sector. Specific recommendations by UNCED's Agenda 21 refer to the development and implementation of (i) integrated environment and economic accounting, and (ii) indicators of sustainable development.

The United Nations Conference on the Human Environment (UNCHE) gave the impetus, both at the national and international levels, to the development of environment statistics as a new field of official statistics. The first initiatives pertaining to the development of environment statistics at the international level stemmed from two meetings of the Economic Commission for Europe (ECE) in 1973. From the two meetings, the need for developing international recommendations or guidelines for a system of environment statistics as a long-term objective was recognized. Furthermore, given the global environmental concerns, a draft programme of international work in environment statistics was first submitted to the Statistical Commission of the United Nations at its eighteenth session in 1974.

## II. Environment Statistics at ECA

The Environment Statistics Unit within the former Statistics Division of the Economic Commission for Africa (ECA) was operational in the late 1980s. The Unit was manned by one professional and one general service staff members. In the early 1990s the Unit produced its first compendium entitled “**African Compendium of Environment Statistics 1991**”. The Compendium covered topics such as:

- Total surface area, total population, population density;
- Land use (arable land, land under permanent crops, permanent meadows & pastures, forest and woodland, other land);
- Area irrigated;
- Total production of roundwood, fuelwood and charcoal, and industrial roundwood;
- Total roundwood production index;

- Agroclimatological conditions (stations, latitude, longitude, altitude, precipitation, temperature (max, min, average), vapour pressure, wind speed, evapotranspiration);
- Total urban and rural population in Africa and other major areas;
- Average annual rate of growth of total, urban and rural populations and rate of urbanization in Africa; percentage of population living in urban areas in Africa;
- Urban agglomerations in Africa with populations of two million or more in 1990;
- Countries with rates of urbanization in 1985-1990 three percent or more; and
- Summary of disasters in Africa 1980-1991 (droughts, floods, cyclones, storms and earthquakes, epidemics, infestations, fires, food shortages, crop failures, and other disasters).

The Unit obtained the data from the national statistical offices (NSOs), meteorological organizations, UN Population Division, Food and Agricultural Organization of the United Nations (FAO), etc. The environment indicators were only published in the indicated Compendium and were not included in the African Statistical Yearbook of the Division.

Starting in the second half of the 1990s and until mid 2006 the statistical function at ECA was reduced from a division to a section in another division. As a result the environment statistics area and other statistical activities were affected. This resulted in the discontinuation of the Compendium and other publications.

Since August 2006, the statistics function was again elevated to a Division level in the name of the African Centre for Statistics (ACS). Environment statistics are now included in the African Statistical Yearbook publication. The environment indicators that are included in the publication are:

- Carbon dioxide emissions per capita in metric tons;
- Percentage of protected area to total surface area; and
- Proportion of the population using improved sanitation facilities.

The sources of the data are the Millennium Development Goals (MDGs) and the Environment Statistics Section databases at the United Nations Statistics Division (UNSD). The environment Statistics Section collects the data through the UNSD/UNEP Questionnaires which have been administered every two years. Moreover, ECA is working closely with UNEP in order to include more environment indicators in the African Statistical Yearbook.

With the approval of the six additional professional staff posts in January 2009, ACS is expected to recruit a professional staff who will work in the area of environment statistics. The staff will be able to provide technical assistance to member States and also work to establish the task force on environment statistics which was endorsed by the StatCom Africa-I in January 2008.

### **III. Climate Change programme at ECA**

In April 2006, ECA in partnership with the Global Climate Observing System (GCOS/WMO), co-organized a regional workshop on climate information for development in Africa. This workshop resulted in a strategy and implementation programme aimed at improving climate information for development in Africa.

Climate for Development in Africa (ClimDev-Africa) programme is an African development programme to integrate Climate Risk Management (CRM) into pertinent policy and decision processes throughout the continent. It will be implemented under the direction of the Joint African Union Commission (AUC)-ECA-African Development Bank (AfDB) Secretariat with support from a number of sources. ClimDev-Africa aims to enhance economic growth and progress towards the MDGs through mitigating the vagaries of climate variability and climate change, and to ensure that development achievements already gained are climate resilient in the longer term.

Currently, climate data is little used in development processes in Africa because of weaknesses in both demand for, and supply of, pertinent climate services. In order to strengthen resilience to short-term climate variability, ClimDev-Africa will assess primary stakeholder needs in relation to climate information and build capacity in institutions and people to use climate knowledge more effectively in planning and decision-making. It will also build capacity in climate and weather institutions, to be able to provide the many information services required.

The expected outcome from ClimDev-Africa programme is improved availability and use of quality climate information and services addressing needs of local, national and regional scale decision makers, in support of sustainable development and achievement of the MDGs in critical climate-sensitive sectors and areas in Africa.

The ClimDev-Africa programme was endorsed by the eighth ordinary session of the African Union held in January 2007; the ECA Conference of African Ministers of Finance, Planning and Economic Development at its fortieth session held in Addis Ababa on 2 to 3 April 2007 requested ECA and its partners to take appropriate actions to effectively develop and implement it; the first Joint Annual Meetings of the AU Conference of Ministers of Economy and Finance and the ECA Conference of African Ministers of Finance, Planning and Economic Development held in Addis Ababa from 31 March to 2 April 2008 welcomed and endorsed the establishment of the African Climate Policy Centre; and the twelfth session of the African Ministerial Conference on the Environment (AMCEN) held in Johannesburg from 10 to 12 June 2008 supported the process of developing the programme.

The operational design of ClimDev-Africa programme consists of two key elements; the African Climate Policy Centre (ACPC) and ClimDev-Africa Special Fund (CDSF).

The ACPC is the policy arm of the ClimDev-Africa programme. The main objectives of the ACPC are: to enhance the capacity of African countries to integrate climate change issues into their development policies, strategies and programmes; to undertake rigorous analytical and research work for robust assessment of the economic, social and environmental impacts of climate change and the costs and benefits of the related adaptation and mitigation measures with respect to national and regional development priorities on the continent; to strengthen the capacity of the countries to benefit from the emerging carbon trading system and the adaptation and mitigation financing mechanism; and to enhance the capacity of countries to participate effectively in international policy discussions on climate change, particularly, the implementation of the Bali road map of multilateral negotiations for a post-2012 global climate agreement.

The ACPC was established with initial funding from the United Kingdom Department of International Development (DFID) under the Food Security and Sustainable Development Division (FSSDD) of ECA. The activities that are being undertaken in 2009 with this funding include initiation of recruitment process of core staff, provision of office spaces, establishment of the ACPC website, establishment of a climate change activities database, provision of support to Africa's negotiating capacity, preparation of Africa's climate change policy etc.

The CDSF is being established in the AfDB to finance demand-led programmes of ClimDev-Africa. The establishment of the Fund is also at an advanced stage. Already, DFID has provided a start-up grant to finance institutional set-up activities, and AfDB has provided resources from its regional public goods window to finance country operations. Furthermore, Sweden and Norway have provided US\$8.5 million and US\$1.0 million, respectively to support the activities of the ACPC.

FSSDD in cooperation with the Human Resources Services Section of ECA organized a four-day workshop on climate change to about 30 staff of ECA and other specialized agencies in Addis Ababa, Ethiopia. The main objective of the workshop was to deepen the knowledge of staff on climate change and development issues in order to enable staff effectively mainstream climate change issues into their activities. The workshop was held from 17 to 20 November 2009.

International conferences on climate change and official statistics were held in Oslo, Norway and Seoul, South Korea in 2008. The conferences agreed that there should be an agenda for action to increase the use of official statistics for climate change policy and monitoring. Moreover, the United Nations Statistical Commission at its 40<sup>th</sup> session in February 2009 discussed the issue of climate change and official statistics.

## **IV. Capacity building activities undertaken**

### **a) Environment Statistics**

Since 2005 three workshops were organized in Africa in the area of environment statistics. The workshops were mainly organized by the United Nations Statistics Division (UNSD) in collaboration with other international and regional organizations.

The first workshop was organized under the project "Strengthening Statistical Capacity-Building in Support of the MDGs in the region of the Economic Community of West African States (ECOWAS)" that was executed by UNSD in cooperation with the ECOWAS Secretariat. Within the framework of the above-mentioned project, UNSD, UNEP, ECA and the ECOWAS Secretariat co-organized the workshop on environment statistics. The objectives of the workshop were to familiarize participants with the concepts and methods of environmental statistics and indicators, provide a forum for exchange of information on the status of national environment statistics, and to establish a network of environmental statisticians in the region. The Workshop was held at the African Institute for Economic Development and Planning (IDEP), a subsidiary body of ECA, in Dakar, Senegal from 28 February to 4 March 2005, with local support of the United Nations Development Programme (UNDP). The workshop was attended by 36 participants from all fifteen ECOWAS member countries representing National Statistical Offices (NSOs), Ministries of Environment and/or other relevant national organizations. The Ministry of

Environment of Mauritania was also represented.

UNSD, UNEP, and ECA co-organized the second workshop on environment statistics to agree on a core set of environmental indicators and statistics for national and regional reporting, and to train participants from NSOs and ministries/agencies responsible for environment on basic concepts, methods and best practices in environment statistics. The workshop was 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). The workshop was held at the United Nations Conference Centre at ECA in Addis Ababa, Ethiopia from 16 to 20 July 2007. The workshop was attended by 32 participants from the NSOs and Ministries of Environment of 17 member States.

The third workshop on environment statistics was co-organized by UNSD, UNEP and ECOWAS and was held in Abuja, Nigeria from 19 to 23 May 2008. The objectives of the workshop were to: agree and adopt a core set of environmental indicators and statistics for the ECOWAS region for national and regional reporting based on the core list of environmental statistics and indicators agreed upon at the UNSD/UNEP/ECA Workshop on Environment Statistics held in July 2007 in Addis Ababa, Ethiopia; review draft methodologies for the set of indicators agreed upon at the workshop; review the draft ECOWAS regional programme on environment statistics; and to train participants from the NSOs and ministries/agencies responsible for environment on basic concepts, methods and best practices in environment statistics. The workshop was attended by 27 participants from NSOs and Ministries of Environment of the 15 ECOWAS Member States. The National Institute of Statistics and the Environment Management Authority of Rwanda were also represented at the workshop. ECA could not be represented at this workshop due to lack of financial resources.

In total 95 participants attended in the three environmental statistics workshops indicated above. Thirty-five member States of ECA, of whom 65.7% were Anglophone countries, have benefited from the workshops. Furthermore, 54.2% of the participants were from the national statistical offices, 44.1% from ministries related to environment, and the remaining 1.7% from the regional training centres. In terms of sex, close to 86.0% of the participants were males while the remaining 14.0% were females. The countries that were represented in the workshops were mainly from the West Africa, East Africa and Southern Africa sub-regions. On the other hand, the participation of the Central Africa and North Africa sub-regions of ECA in the workshops was minimal

During the Addis Ababa workshop a core set of environment indicators and statistics were proposed to be used by African countries in reporting to regional and international organizations. Besides, the Abuja workshop discussed and agreed which one of the indicators to adopt for the ECOWAS sub-region. The following table presents the number of indicators proposed by the two workshops.

## Proposed core set of environmental indicators and statistics for Africa

Sector	Number of proposed indicators		
	Addis workshop	Abuja workshop	Comment
Natural disasters and environment performance	5	5	Same indicators
Air	7	7	Same indicators
Land	6	6	Same indicators
Agriculture	6	6	Same indicators
Forests and woodlands	6	6	Same indicators
Coastal and marine resources	13	13	Same indicators
Fresh water	27	25	At the Abuja workshop, two indicators (Incidence of water borne diseases; Developed national and river basin integrated water resource management (IWRM) plans) were moved to other sectors, one indicator (Percentage of treated waste water produced from wetlands ) was dropped from the Addis workshop list while a new one (Proportion of population using harvested rainwater ) was added.
Biodiversity	11	10	At the Abuja workshop, one indicator (Number of restored wetland sites) was dropped from the Addis workshop
Energy	8	9	A new indicator (Electricity production, total, per capita and by source) was added at the Abuja workshop
Waste	9	9	At the Abuja workshop, one indicator (Municipal waste collected as a percentage of waste generated) was dropped from the Addis workshop while one (Composition of municipal waste by main material groups) was added.
Health and environment	8	11	Three indicators (Proportion of population using an improved drinking water sources; Incidence of water borne diseases; and incidence of air quality related diseases) were added at the Abuja workshop
Governance	-	2	This was a newly created sector. The indicators are Ratification of international and regional environmental legislation and Developed national & river basin IWRM plans
Total indicators	107	109	

### **b) Biodiversity Indicators Capacity Strengthening (BICS) project**

The BICS in Africa is a two-year project designed to build on the existing work on biodiversity indicators in East and Southern Africa, assisting countries to develop biodiversity indicators of their choice on a sustainable basis. This will be achieved through capacity building workshops, technical training in the selected indicators and peer-to-peer exchange visits. The project will support the use of existing data sets in order to reduce dependence on external funding for new indicators. The project is funded by the UN Development Account and implemented by UNEP and the UNEP-World Conservation Monitoring Centre (UNEP-WCMC). Technical support and indicator guidance materials have also been provided through the 2010 Biodiversity Indicators Partnership (BIP). Furthermore, the project is coordinated with regional work on indicators, such as the African Environment Information Network and the African Centre for Statistics of ECA. The project has so far organized the following three workshops.

- The inception workshop for East African countries was held from 30 March to 3 April 2009 in Nairobi Kenya at Silver Springs Hotel. It brought together 23 participants from 6 East African countries, namely Burundi, Ethiopia, Kenya, Rwanda, Tanzania, and Uganda;
- The second workshop for East African countries took place from 22 to 24 September 2009 at the Kenya School of Monetary Studies, Nairobi. A total of 39 participants attended the workshop including representatives from wildlife authorities, national environmental agencies, national statistical offices, and conservation NGOs in Burundi, Ethiopia, Kenya, Rwanda, Tanzania, and Uganda; and
- The first workshop for Southern African countries was held from 21 to 23 July 2009 at the Kirstenbosch National Botanical Garden in Cape Town, South Africa. There were 28 participants from seven Southern African countries, the Southern African Research and Documentation Centre (SARDC) and ECA, where 39.3% of them were females. The countries that participated in the workshop were Botswana, Lesotho, Mozambique, Namibia, South Africa, Swaziland and Zimbabwe. The participants were mainly from national statistical offices, environment ministries, water resources offices, biodiversity institutes, natural resource foundations, forestry commissions, and from non-governmental organizations. The second workshop is expected to be held in February 2010 in Pretoria, South Africa.

### **v. Planned missions in environment statistics in 2009**

In 2009 the African Centre for Statistics of ECA planned to undertake missions on environment statistics data and information collection. The missions were expected to cover the headquarters of UNEP, New Partnership for Africa's Development (NEPAD), AfDB, ECOWAS, the Southern Africa Development Community (SADC) and the East African Community (EAC). In addition to the above, the missions were also to cover regional training centres located in Dar-es-Salaam, Kampala, Abidjan, Dakar, Yaoundé and University of Ibadan in Nigeria. Furthermore, the missions were planned to cover the national statistical offices as well as the line ministries that deal with environment, water, agriculture, etc.

The main objectives of the missions were:

- To discuss the status of the collection and dissemination of environment statistics with national statistical offices as well as the line ministries dealing with environment, water, agriculture, etc.;
- To establish a mechanism of collection of data and information between the ACS and the relevant institutions;
- To assess whether or not the sector strategy for environment statistics is properly covered in the design and implementation of the National Strategy for the Development of Statistics (NSDS);
- To discuss with the officials of regional statistical training centres about their training activities in the area of environment statistics. Their future plans will also be raised during the discussions including curriculum development; and
- To discuss the activities of regional economic communities (RECs) in statistics in general and environment statistics in particular with the relevant officials.

In order to undertake the missions ACS was planning to utilize the funds allocated to it by the UNEP. However, ACS undertook only one mission to Cameroon due to the delay in the release of the funds and the heavy workload during the last quarter of 2009.

The main conclusions of the mission to Cameroon were:

- The environment statistics unit within the National Institute of Statistics is not yet developed in terms of human and financial resources. It has not so far produced much data in the area. There is however a plan to collect environment statistics within the coming two to three years by conducting surveys;
- There are about six line ministries that are involved in implementing environment statistics programme. The environment statistics activity is coordinated by the National Institute of Statistics. The Ministry of Environment and the Protection of Nature is also the main stakeholder in this activity;
- The main challenges faced in the development of environment statistics were indicated to be lack of trained manpower and financial resources as well as shortage of equipment. There is a need to organize training workshop in the area of environment statistics for the Central African sub region. So far no workshop was organized in environment statistics for the sub-region. The African Centre for Statistics in collaboration with UNSD and UNEP should organize the workshop in the near future. Furthermore, training materials in the field of environment statistics should be provided to the countries in the sub-region. The sharing of experiences with countries that have a well developed environment statistics programme should also be undertaken;
- Further work is needed in order to strengthen the environment statistics unit at the National Institute of Statistics and to develop environment and economic accounting. Every effort is required in order to implement the national strategy for the development of statistics, particularly the planned surveys in environment statistics and climate change;
- The two regional statistical training centres located in Yaoundé, Cameroon do not have a plan to offer training courses in environment statistics. If the need for such training arises, they may prepare a module to offer short-term training courses in the area. The institutes need to be encouraged and supported in order to develop curriculum in environment

statistics and to train the required manpower in the area.

## **VI. The way forward**

During 2010-2012, the African Centre for Statistics plans to undertake the following activities in the area of environment statistics and accounts:

- To create a unit within the ACS that will work in environment statistics area and to strengthen the unit in terms of resources, both human and financial;
- To continue undertaking missions to member States in order to discuss the status of the collection and dissemination of environment statistics with national statistical offices as well as the line ministries dealing with environment, water, agriculture, etc.; to establish a mechanism of collection of data and information between the ACS and the relevant institutions; to assess whether or not the sector strategy for environment statistics is properly covered in the design and implementation of the national strategy for the development of statistics (NSDS); and to provide technical assistance to member States according to their needs;
- To collaborate with UNEP, AUC and AfDB to include more relevant environment indicators and improve data availability for those indicators that will be included in the joint African Statistical Yearbook, and to produce a Compendium on Environment Statistics;
- To work together with the NEPAD Secretariat and the RECs in order to update the core list of environment indicators which were endorsed by the workshop that was held in July 2007 in Addis Ababa, Ethiopia;
- To introduce the core list of environmental indicators to member States and determine whether or not the data to compute the indicators are available at country level;
- To work together with the regional STCs with regard to their current training activities and future plans including curriculum development in the area of environment statistics;
- To work more closely with UNSD, UNEP and other partners in the development of environmental statistics in Africa. The ACS will be involved in the collection of environment statistics in collaboration with UNSD and UNEP as these organizations are the ones currently mandated to collect environmental data from African countries by administering questionnaires;
- In collaboration with UNSD, UNEP and other partners, ACS will continue organizing capacity building workshops in the area of environment statistics mainly in the Central and North African sub-regions. The trend of inviting representatives from both the national statistical offices and the ministries of environment to future environment workshops will be strengthened;

- The ACS will cooperate with the Environment and Sustainable Development Monitoring Section and the African Climate Policy Centre of the Food Security and Sustainable Development Division of ECA in undertaking its environment statistics and climate change activities.