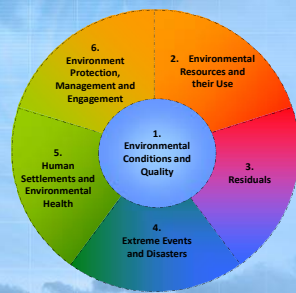# The Basic and the Core Sets of Environment Statistics

Environment and Energy Statistics Workshop for the Arab Region

Amman, Jordan 8-12 September 2013

Environment and Energy Statistics Branch, United Nations Statistics Division

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- This presentation has been elaborated by the Environment Statistics Section of the United Nations Statistics Division.
- It is based on Chapter 4 of the Framework for the Development of Environment Statistics (FDES) 2013 that can be downloaded here: http://unstats.un.org/unsd/statcom/doc13/BG-FDES-Environment.pdf
- All presentations, handouts and background materials for the workshop can be downloaded here: http://unstats.un.org/unsd/ENVIRONMENT/otherworkshops.htm
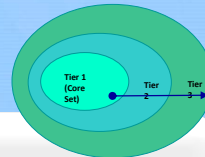
Table of Contents
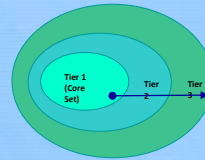
1. Purpose of the BSES
2. Elaboration process
3. The Basic and the Core Set of Environment Statistics
4. Self-Assessment Tool

## 1. Why do we need a Basic and Core Set of ES?

- Both the Basic and Core Sets were developed in response to:
    - Countries' demands
    - Relevance to environmental issues
    - Corresponding FDES topics.

- The statistics contained in these Sets are useful for:
    - Generating national sets/databases of environment statistics
    - Using in environment/sustainable development reporting
    - Calculating environmental indicators
    - Generating environmental-economic accounts.

2. Elaboration Process

Revision of FDES and Development of a Core Set of Environment Statistics

SC mandate: The 41st (2010) session of the UN Statistical Commission endorsed revision of the 1984 FDES and the development of a Core Set of Environment Statistics.

SC endorsement: The 44th (2013) session endorsed the FDES 2013 and recognized it as a useful tool to adequately respond to the increasing demand for environmental information in the follow-up to Rio+20 and the post-2015 development agenda.

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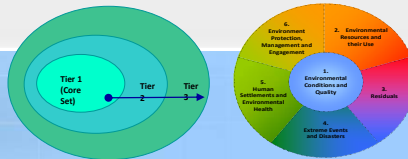
2. Elaboration Process

Revision of FDES and development of the Core Set of Environment Statistics

- 1984 – 2010: improved scientific knowledge and emerging environmental concerns called for a revision of the FDES 84.
- Contents and structure of FDES required considerable work by EG and UNSD
- To develop the draft Core Set of Environment Statistics, more than 2,500 environmental indicators and statistics were analyzed, in terms of relevance, statistical feasibility and methodological soundness.
- The draft Core Set was tested in 25 countries through a pilot exercise (August to September 2012): substantive improvement, prioritized statistics within Basic Set
- Both the revised FDES and the Basic Set were subjected to a Global Consultation process, 76 countries, areas and organizations provided feedback (September to November 2012).

**Expert Group on the revision of the FDES**
Comprised of experts representing all regions, including developing (13) and developed (10) countries, as well as 7 international agencies and UNCEEA. It represented the interest of NSOs, environmental ministries and agencies, and academia.
EG and UNSD met four times, worked together remotely on a continual basis during the process.

3. The Basic and the Core Set of Environment Statistics

The Basic Set of Environment Statistics is:
- A comprehensive but not exhaustive set of statistics designed to support countries developing national environment statistics programmes.
- Assists national environment statistics programmes in making decisions on priorities for statistical development.
- It can be set up with enough flexibility to be adapted to individual countries' environmental concerns, priorities and resources.

- The **Basic Set** is organized in a progression of three tiers, based on the level of relevance, availability and methodological development of the statistics, where Tier 1 corresponds to the Core Set of Environment Statistics.

- The scope can be gradually widened to the statistics contained in Tiers 2 and 3 as national priorities require and as data availability and resources permit.
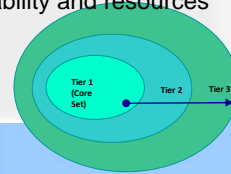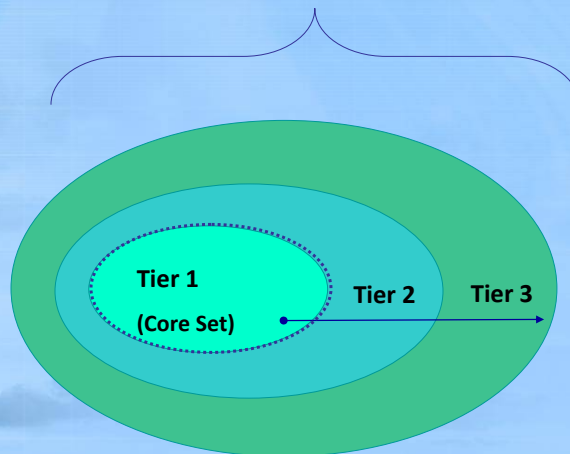

Basic Set of Environment Statistics

The **Core Set of Environment Statistics** correspond to **Tier 1.**
The Core Set of Environment Statistics is an agreed, limited set of environment statistics that are of high priority and relevance to most countries and have a sound methodological foundation .

Tier 2 includes environment statistics that are of priority and relevance to most countries but need more investment in time, resources or methodological development.

Tier 3 includes environment statistics which are either of less priority or require significant methodological development.

Three tiers of statistics
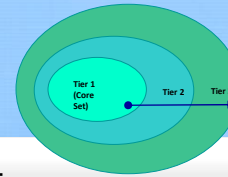
- The three tiers of statistics are defined as follows:
    - Tier 1 is the Core Set of Environment Statistics which are of high priority and relevance to most countries, and have a sound methodological foundation, so countries are recommended to consider producing them in the short-term.
    - Tier 2 includes environment statistics which are of priority and relevance to most countries but need more significant investment in time, resources or methodological development, so countries are recommended to consider producing them in the medium-term.
    - Tier 3 includes environment statistics which are either of less priority or require significant methodological development, so countries are recommended to consider producing them in the long-term.

Core Set of Environment Statistics

- The Core Set of Environment Statistics is a set of statistics which countries are recommended to consider producing in the short-term.
- The Core Set of Environment Statistics consists of:
    - A limited number of statistics
    - Some non-statistical information on the environment (e.g., qualitative descriptions).
- The Core Set represents a broad consensus of opinion on the pertinence and feasibility of these statistics.

Purpose:
- Intended to foster collection, production, dissemination and harmonization of environment statistics at the national, regional and international levels.

Component	Sub-component	Topic	Core Set / Tier 1 Statistics	Category of Measurement
Component 1: Environmental Conditions and Quality	Sub-component 1.1: Physical Conditions	Topic 1.1.1: Atmosphere, climate and weather	a. Temperature — 1. Monthly averages	Degrees
			2. Minimum monthly average	Degrees
			3. Maximum monthly average	Degrees
			b. Precipitation (also in 2.6.1.a) — 1. Annual averages	Height
			2. Long-term annual averages	Height
		Topic 1.1.2: Hydrographical characteristics	d. Watersheds — 1. Description of main watersheds	Area, Descriptive, Location
		Topic 1.1.3: Geological and geographical information	a. Geological, geographical and geomorphological conditions of terrestrial areas and islands — 2. Area of country or region	Area
			b. Coastal area (includes area of coral reefs, mangroves, etc.) (also in 2.3.1.c)	Area, Descriptive
			c. Length of marine coastline	Length
		Topic 1.1.4: Soil characteristics	a. Soil characterization — 1. Area of soil types	Area
			b. Degradation — 1. Area affected by soil erosion	Area
			2. Area affected by desertification	Area
	Sub-component 1.2: Land Cover, Ecosystems and Biodiversity	Topic 1.2.1: Land cover	a. Extent and spatial distribution of main land cover categories — 1. Area of land cover	Area
			2. Location of land cover	Location
		Topic 1.2.2: Ecosystems	a. General ecosystem characteristics, extent and pattern — 1. Area of ecosystems	Area
			b. Biological components of ecosystems (also in 1.2.3.a-b) — 4. Threatened species	Number
		Topic 1.2.3: Biodiversity	a. Flora - terrestrial, freshwater and marine (also in 1.2.2.e) — 1. Number of known species by status category	Number
			b. Fauna - terrestrial, freshwater and marine (also in 1.2.2.e) — 1. Number of known species by status category	Number
			c. Protected areas — 1. Protected terrestrial (including inland water) and marine area (also in 1.2.4.a)	Area
		Topic 1.2.4: Forests	a. Forest area (also in 1.2.1.a and 1.2.2.a) — 1. Total	Area
			6. Area deforested	Area
	Sub-component 1.3: Environmental Quality	Topic 1.3.1: Air quality	a. Breathable particles — 1. Concentration levels of particulate matter (PM$_{10}$)	Concentration
			2. Concentration levels of particulate matter (PM$_{2.5}$)	Concentration
			b. Breathable gases — 1. Concentration levels of tropospheric ozone (O$_3$)	Concentration
			2. Concentration levels of carbon monoxide (CO)	Concentration
			c. Ambient concentrations of other relevant pollutants — 1. Concentration levels of sulphur dioxide (SO$_2$)	Concentration
			2. Concentration levels of nitrogen oxides (NO$_x$)	Concentration
		Topic 1.3.2: Freshwater quality	a. Nutrients and chlorophyll — 1. Concentration of nitrates in freshwater bodies	Concentration
			2. Concentration of phosphates in freshwater bodies	Concentration
			b. Organic matter in freshwater bodies — 1. Biochemical oxygen demand (BOD) in freshwater bodies	Concentration

Selection criteria of the ES Core Set

- The main selection criteria of the Core Set of Environment Statistics (Tier 1) were:

- i. <u>Relevance</u>: Core statistics should meet the needs of the broad variety of users and be responsive to changes in the environment and related human activities
- ii. <u>Measurability</u>: Core statistics should have sufficient supporting data and meta-data readily available, be of accepted quality, and be regularly updated, or it should be possible to compile the statistics in the near term;
- iii. <u>Methodological soundness</u>: Core statistics should adhere to professional and scientific methods, as well as to internationally agreed concepts and definitions to the extent possible.

Use of the Core Set of Environment Statistics

- The Core Set can also help in identifying data gaps in established national environment statistics programmes. Some countries may be in the position of having started environment statistics programmes in response to very specific event-driven imperatives.

- The use of the Core Set and the forthcoming methodological guidance for its compilation will allow nations to build on such beginnings by adding or adjusting statistics based on an organized set of concepts and definitions that have been agreed upon and are widely used. These can complement existing environment data collection activities to provide a more complete statistical description of environmental concerns for the country.

4. Environment Statistics Self-Assessment Tool (ESSAT)

- It is a diagnostic tool, designed to allow nations to assess the status of their own Environment Statistics production/systems.

- The Self-Assessment Tool consists of a set of Questionnaires comparing the statistics in the Basic Set with available national environment statistics, environmental policy objectives and international reporting requirements

- These questionnaires are not intended for international statistic compilation.

Self–Assessment Tool Part 1 Questionnaire: Topic Level

Component 3: Residuals
Sub-component 3.1: Emissions to Air

29	3.1.1	Emissions of greenhouse gases	☐ High relevance ☐ Average relevance ☐ Little relevance ☐ No relevance	☐ Highly satisfactory ☐ Satisfactory ☐ Not satisfactory	☐ Resource constraints ☐ Methodological/ Technical difficulty in collecting ☐ Insufficient quality ☐ Accessibility ☐ Lack of institutional set-up/coordination ☐ Other difficulties in data collection. Please specify:	☐ NSO ☐ Ministry of Environment or equivalent institution ☐ Other institution(s) Please specify:	☐ National requirement ☐ International requirement
30	3.1.2	Consumption of ozone depleting substances	☐ High relevance ☐ Average relevance ☐ Little relevance ☐ No relevance	☐ Highly satisfactory ☐ Satisfactory ☐ Not satisfactory	☐ Resource constraints ☐ Methodological/ Technical difficulty in collecting ☐ Insufficient quality ☐ Accessibility ☐ Lack of institutional set-up/coordination ☐ Other difficulties in data collection. Please specify:	☐ NSO ☐ Ministry of Environment or equivalent institution ☐ Other institution(s) Please specify:	☐ National requirement ☐ International requirement

Please see ES Self Assessment Tool Questionnaire Part 1

Self–Assessment Tool Part 2 Questionnaire: individual ES level

Do you currently produce the following environment statistics?
What is the priority of each statistic for national data collection?

Component 1: Environmental Conditions and Quality			Yes		No	Priority for National Data Collection (Low/Medium/High)
			Identical	Similar		
Topic 1.1.1: Atmoshere, climate and weather	a. Temperature	1. **Monthly average**				
		2. **Minimum monthly average**				
		3. **Maximum monthly average**				
	b. Precipitation (also in 2.6.1.a)	1. **Annual average**				
		2. **Long-term annual average**				
		3. Monthly average				
		4. Minimum monthly value				
		5. Maximum monthly value				
	c. Relative humidity	1. Minimum monthly value				
		2. Maximum monthly value				
	d. Pressure	1. *Minimum monthly value*				
		2. *Maximum monthly value*				
	e. Wind speed	1. *Minimum monthly value*				
		2. *Maximum monthly value*				
	f. Solar radiation	1. *Average daily value*				
		2. *Average monthly value*				
		3. *Number of hours with sunshine*				
	g. UV radiation	1. *Maximum daily value*				
		2. *Average daily value*				
		3. *Maximum monthly value*				
		4. *Average monthly value*				
	h. Occurrence of El Niño, La Niña events, when relevant	1. *Occurrence*				
		2. *Location*				
		3. *Time period*				

Please see ES Self Assessment Tool Questionnaire Part 2

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4. Self-Assessment Tool
Objective of the Self–Assessment Tool

Main Objective:

- To improve the ability of nations to assess where they stand with respect to the environmental statistics in their country.
    - It is a means for them to assess their current position and sets a basis from which they may build their capacities to produce environmental statistics.

The Environment Statistics Self-Assessment Tool should ideally be filled by country teams (NSO, Environmental Ministry, Energy/Water/Mining/Agricultural authorities, etc.)


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4. Self-Assessment Tool
ES Self-Assessment Tool Output

The ESSAT can:
- ✓ Help nations gauge the present state of environmental statistics
- ✓ Assess the relevance of the environment statistics topics of the FDES and the environment statistics within the Basic Set at the national level
- ✓ Identify data and statistical gaps given their own resources, priorities and needs and the primary causes for such gaps
- ✓ Identify current and potential partners for convening inter-agency platforms/committees for ES production
- ✓ Serves as a base of knowledge from which countries may plan their own strategies and programmes of environment statistics

Before we start the group work for Exercise 1, Questions?

Tier 1 (Core Set)
Tier 2
Tier 3
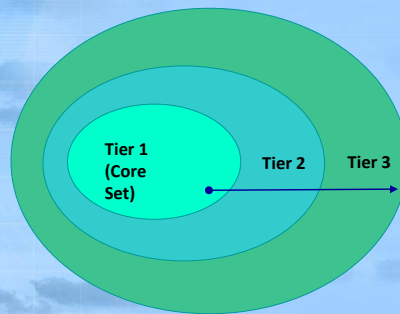
Thank you for your attention!

For more information please contact the Environment Statistics Section
at the UN Statistics Division:
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website: http://unstats.un.org/unsd/ENVIRONMENT