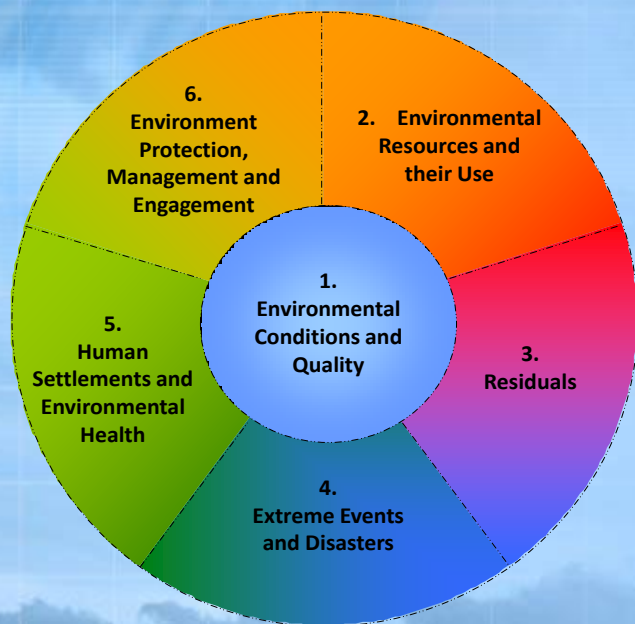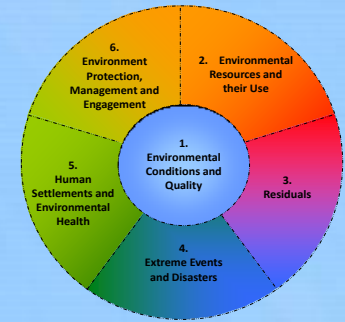# Chapter 4: From the Basic Set to the Core Set of Environment Statistics


Workshop on Environment Statistics in support of the implementation of the Framework for the Development of Environment Statistics (FDES 2013)
(Arusha, Tanzania, 6-10 July 2015)

Environment Statistics Section, United Nations Statistics Division

- This presentation has been elaborated by the Environment Statistics Section of the United Nations Statistics Division.

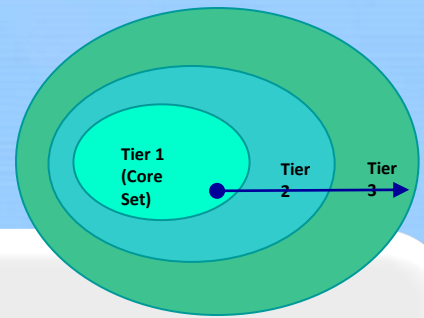- It is based on Chapter 4 of the Framework for the Development of Environment Statistics (FDES) 2013.

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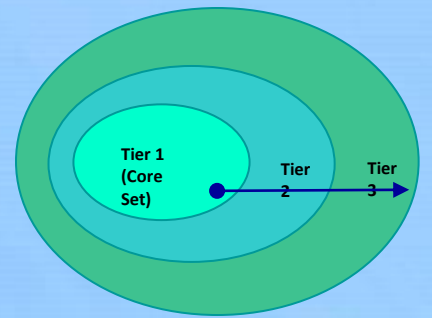
1. Purpose of the BSES
2. The Basic and the Core Set of Environment Statistics

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.

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.

Tier 1 (Core Set)   Tier 2   Tier 3
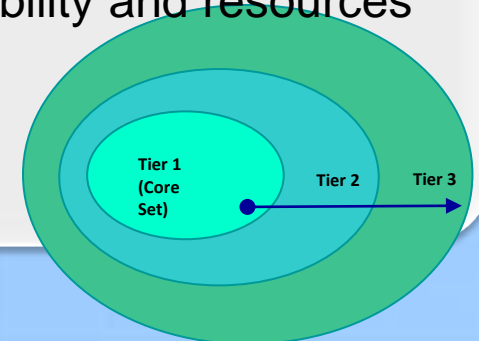
The Basic Set and its three tiers of statistics
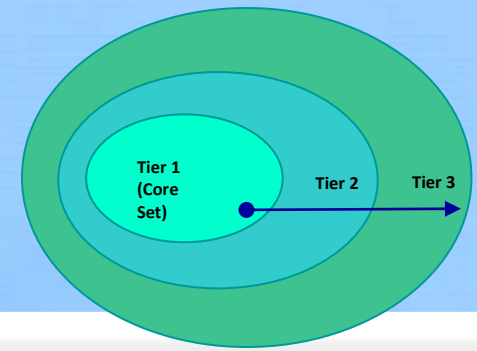
- The three tiers of statistics are defined as follows:
  - <u>Tier 1</u> is the Core Set of Environment Statistics which are of high priority and relevance to most countries, and have a sound methodological foundation, so countries are recommended to consider producing them in the short-term.
  - <u>Tier 2</u> 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.
  - <u>Tier 3</u> 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.

Number of environment statistics in the Basic and Core Set

Core Set or Tier 1 = 100
Basic Set = 458
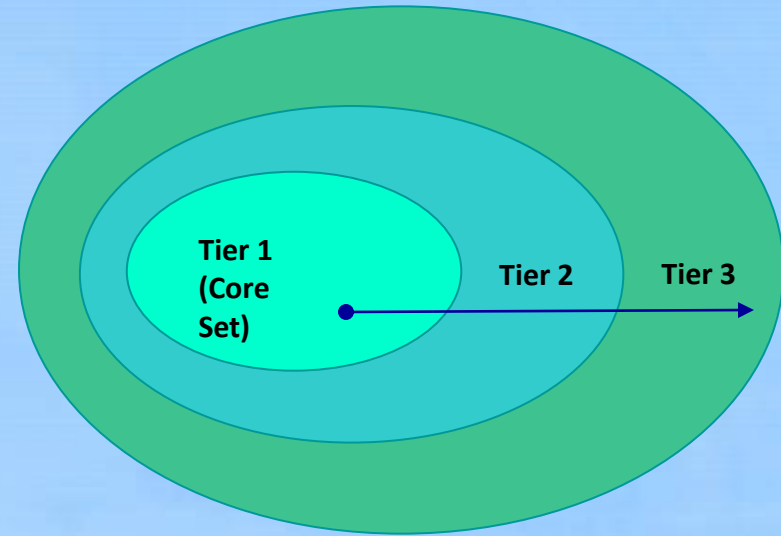
	Component 1	Component 2	Component 3	Component 4	Component 5	Component 6	Total
Tier 1	32	30	19	4	12	3	100
Tier 2	58	51	34	11	22	24	200
Tier 3	51	43	5	16	20	23	158
Total	141	124	58	31	54	50	458

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.

The Basic Set is presented into the FDES structure, supplemented with additional guidance

Component 4: Extreme Events and Disasters

Sub-component 4.1: Natural Extreme Events and Disasters

Topic		Statistics and Related Information (Bold Text - Core Set/Tier 1; Regular Text - Tier 2; *Italicized Text - Tier 3*)	Category of Measurement	Potential Aggregations and Scales	Methodological Guidance
Topic 4.1.1: Occurrence of natural extreme events and disasters	a	Occurrence of natural extreme events and disasters		• By event • National • Sub-national	• Centre for Research on the Epidemiology of Disasters Emergency Events Database (CRED EMDAT) • UN Economic Commission for Latin America and the Caribbean (ECLAC) Handbook for Estimating the Socio-economic and Environmental Effects of Disasters • The United Nations Office for Disaster Risk Reduction (UNISDR)
	1.	**Type of natural extreme event and disaster** (geophysical, meteorological, hydrological, climatological, biological)	Description		
	2.	**Location**	Location		
	3.	Magnitude (where applicable)	Intensity		
	4.	Date of occurrence	Date		
	5.	Duration	Time period		
Topic 4.1.2: Impact of natural extreme events and disasters	a	People affected by natural extreme events and disasters			
	1.	**Number of people killed**	Number		
	2.	Number of people injured	Number		
	3.	Number of people homeless	Number		
	4.	Number of people affected	Number		
	b.	**Economic losses due to natural extreme events and disasters** (e.g., damage to buildings, transportation networks, loss of revenue for businesses, utility disruption, etc.)	Currency	• By event • By ISIC economic activity • National • Sub-national • By direct and indirect damage	
	c.	Physical losses/damages due to natural extreme events and disasters (e.g., area and amount of crops, livestock, aquaculture, biomass etc.)	Area, Description, Number		
	d	Effects of natural extreme events and disasters on integrity of ecosystems		• By event • By ecosystem • National • Sub-national	
	1.	*Area affected by natural disasters*	Area		
	2.	*Loss of vegetation cover*	Area		
	3.	*Area of watershed affected*	Area		
	4.	*Other*	Description		
	e.	*External assistance received*	Currency	• By event • National	

Sample of the Core Set of Environment Statistics

Component	Sub-component	Topic	Core Set / Tier 1 Statistics		Category of Measureme
Component 1: Environmental Conditions and Quality	Sub-component 1.1: Physical Conditions	Topic 1.1.1: Atmosphere, climate and weather	a. Temperature	1. Monthly average	Degrees
				2. Minimum monthly average	Degrees
				3. Maximum monthly average	Degrees
			b. Precipitation (also in 2.6.1.a)	1. Annual average	Height
				2. Long-term annual average	Height
		Topic 1.1.2: Hydrographical characteristics	d. Watersheds	1. Description of main watersheds	Area, Description
		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, Location
			b. Coastal waters (includes area of coral reefs, mangroves, etc.)		Area, Description
			c. Length of marine coastline		Length
			d. Coastal area		Area
		Topic 1.1.4: Soil characteristics	a. Soil characterization	1. Area by soil types	Area
			b. Soil 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. Area under land cover categories		Area
		Topic 1.2.2: Ecosystems and biodiversity	a. General ecosystem characteristics, extent and pattern	1. Area of ecosystems	Area
			c. Biodiversity	1. Known flora and fauna species	Number
			d. Protected areas	1. Protected terrestrial (including inland water) and marine area (also in 1.2.3.a)	Area
		Topic 1.2.3: Forests	a. Forest area	1. Total	Area
	Sub-component 1.3: Environmental Quality	Topic 1.3.1: Air quality	a. Local air quality	1. Concentration level of particulate matter (PM$_{10}$)	Concentration
				2. Concentration level of particulate matter (PM$_{2.5}$)	Concentration
				3. Concentration level of tropospheric ozone (O$_3$)	Concentration
				4. Concentration level of carbon monoxide (CO)	Concentration
				5. Concentration level of sulphur dioxide (SO$_2$)	Concentration
				6. Concentration levels of nitrogen oxides (NO$_x$)	Concentration
		Topic 1.3.2: Freshwater quality	a. Nutrients and chlorophyll	1. Concentration level of nitrogen	Concentration
				2. Concentration level of phosphorous	Concentration
			b. Organic matter	1. Biochemical oxygen demand (BOD)	Concentration
			c. Pathogens	1. Concentration level of faecal coliforms	Concentration
		Topic 1.3.3: Marine water quality	a. Nutrients and chlorophyll	1. Concentration level of nitrogen	Concentration
				2. Concentration level of phosphorous	Concentration
			b. Organic matter	1. Biochemical oxygen demand (BOD)	Concentration
			g. Coral bleaching	1. Area affected by coral bleaching	Area

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.

Thank you for your attention!

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