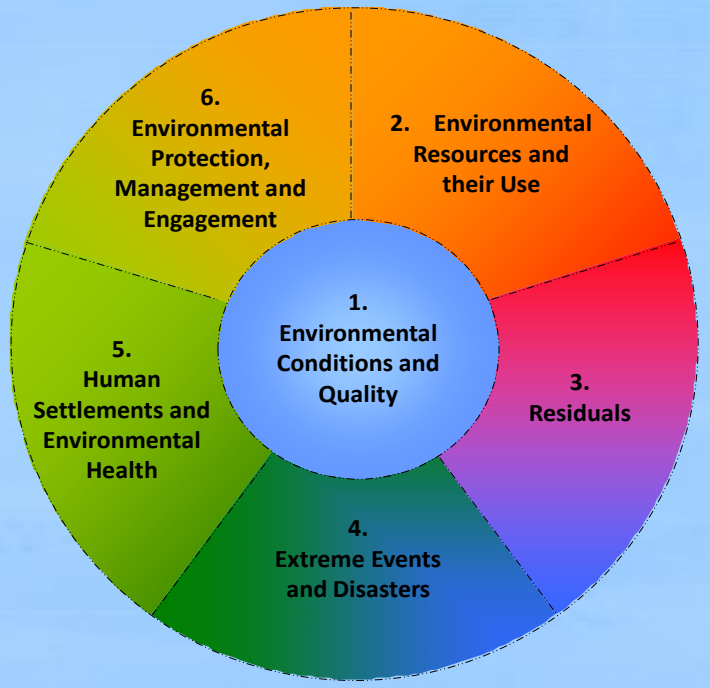
Water statistics: a cross-cutting theme throughout the Framework for the Development of Environment Statistics

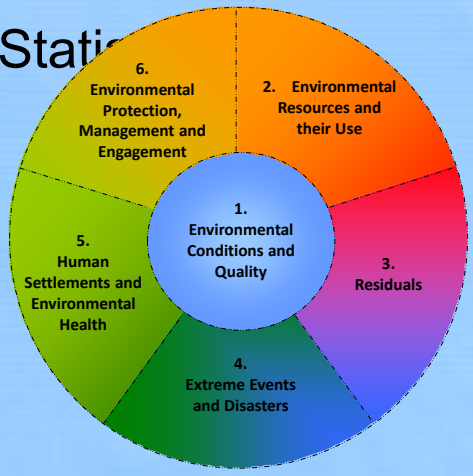


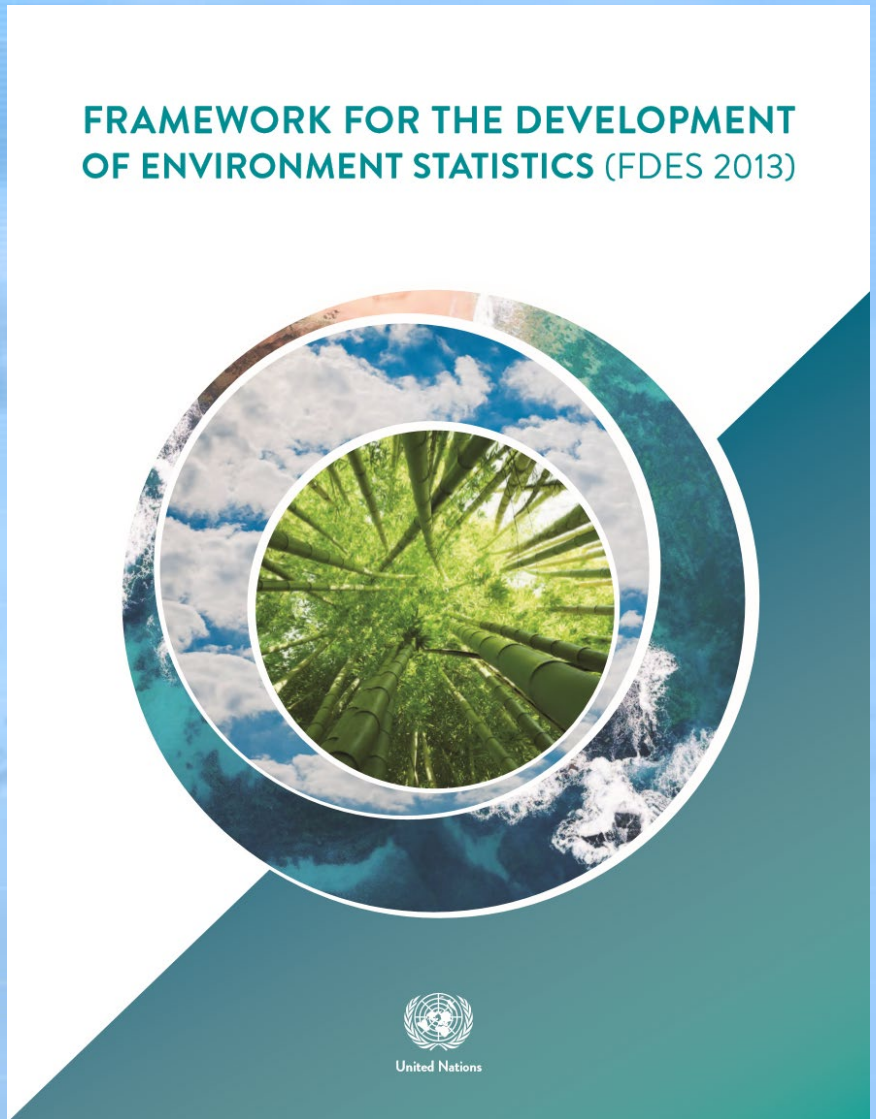
National Workshop on Environment Statistics and Climate Change Statistics

Windhoek, Namibia, 3-5 December 2019

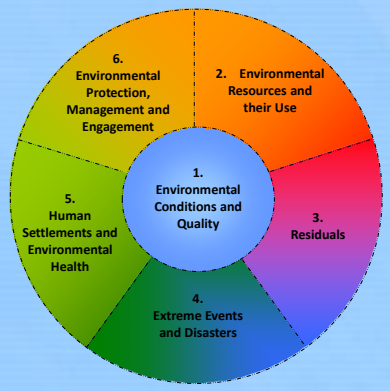
This presentation has been elaborated by the Environment Statistics Section of the United Nations Statistics Division.

It is based on Chapters 3 and 5 of the…





Outline…



1. Describe why water and water statistics are important
2. Show how water statistics are cross-cutting through much of the Framework for the Development of Environment Statistics (FDES).
3. Request your participation in a breakout group exercise where you are invited to apply the Environment Statistics Self-Assessment Tool (ESSAT) to water statistics within the FDES.

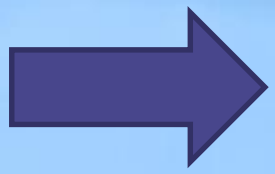
Water is fundamental to every form of life and critical role in human development*

Increasing scarcity impedes development, compromises ecosystem functions, undercuts human health and contributes to conflicts*

* Source: FDES, Page 108

Water and the Environment: Issues

- Pressures on water supply
- Stress on ecosystems
- Loss of natural and human habitats
- Reduction of fish and aquatic plants productivity
- Water-borne diseases
- Quality and access to potable water
- Conflicts between users
- Waterlogging and salinization of soils



Need to monitor the sustainable management of water resources

Stocks and flows of water through the Environment

UNSD

UN environment
United Nations Environment Programme

United Nations Statistics Division (UNSD) and United Nations Environment Programme

QUESTIONNAIRE 2018 ON ENVIRONMENT STATISTICS

Section: WATER

TABLE OF CONTENTS

Abstraction → Use → Supply → Returns

Such stock and flow analysis is very applicable to the UNSD/UNEP Questionnaire on Environment (water section)

Questionnaire tables…

Table W1: Renewable Freshwater Resources

Line	Category	Unit
1	Precipitation	mio m^3/y
2	Actual evapotranspiration	mio m^3/y
3	Internal flow (=1-2)	mio m^3/y
4	Inflow of surface and groundwaters from neighbouring countries	mio m^3/y
5	**Renewable freshwater resources (=3+4)**	mio m^3/y
6	Outflow of surface and groundwaters to neighbouring countries	mio m^3/y
7	*Of which:* Secured by treaties	mio m^3/y
8	Not secured by treaties	mio m^3/y
9	Outflow of surface and groundwaters to the sea	mio m^3/y

Table W2: Freshwater Abstraction and Use

Line	Category	Unit
1	Fresh surface water abstracted	mio m^3/y
2	Fresh groundwater abstracted	mio m^3/y
3	**Freshwater abstracted (=1+2)**	mio m^3/y
	of which abstracted by:	
4	Water supply industry (ISIC 36)	mio m^3/y
5	Households	mio m^3/y
6	Agriculture, forestry and fishing (ISIC 01-03)	mio m^3/y
7	*of which for:* Irrigation in agriculture	mio m^3/y
8	Mining and quarrying (ISIC 05-09)	mio m^3/y
9	Manufacturing (ISIC 10-33)	mio m^3/y
10	Electricity, gas, steam and air conditioning supply (ISIC 35)	mio m^3/y
11	*of which for:* Electric power generation, transmission and distribution (ISIC 351)	mio m^3/y
12	Construction (ISIC 41-43)	mio m^3/y
13	Other economic activities	mio m^3/y
14	Desalinated water	mio m^3/y
15	Reused water	mio m^3/y
16	Imports of water	mio m^3/y
17	Exports of water	mio m^3/y
18	**Total freshwater available for use (=3+14+15+16-17)**	mio m^3/y
19	**Losses during transport**	mio m^3/y
20	**Total freshwater use (=18-19)**	mio m^3/y
	of which used by:	
21	Households	mio m^3/y
22	Agriculture, forestry and fishing (ISIC 01-03)	mio m^3/y
23	*of which for:* Irrigation in agriculture	mio m^3/y
24	Mining and quarrying (ISIC 05-09)	mio m^3/y
25	Manufacturing (ISIC 10-33)	mio m^3/y
26	Electricity, gas, steam and air conditioning supply (ISIC 35)	mio m^3/y
27	*of which for:* Electric power generation, transmission and distribution (ISIC 351)	mio m^3/y
28	Construction (ISIC 41-43)	mio m^3/y
29	Other economic activities	mio m^3/y

Questionnaire tables…

Table W3: Water Supply Industry (ISIC 36)

Line	Category	Unit
1	**Gross freshwater supplied by water supply industry (ISIC 36)**	mio m^3/y
2	Losses during transport by ISIC 36	mio m^3/y
3	**Net freshwater supplied by water supply industry (ISIC 36) (=1-2) (=4+5+6+7+8+10+11)**	mio m^3/y
	of which supplied to:	
4	Households	mio m^3/y
5	Agriculture, forestry and fishing (ISIC 01-03)	mio m^3/y
6	Mining and quarrying (ISIC 05-09)	mio m^3/y
7	Manufacturing (ISIC 10-33)	mio m^3/y
8	Electricity, gas, steam and air conditioning supply (ISIC 35)	mio m^3/y
9	*of which to:* Electric power generation, transmission and distribution (ISIC 351)	mio m^3/y
10	Construction (ISIC 41-43)	mio m^3/y
11	Other economic activities	mio m^3/y
	Population supplied by water supply industry (ISIC 36)	
12	**Total population supplied by water supply industry (ISIC 36)**	%
13	Urban population supplied by water supply industry (ISIC 36)	%
14	Rural population supplied by water supply industry (ISIC 36)	%

Table W4: Wastewater Generation and Treatment

Line	Category	Unit
1	**Total wastewater generated**	1000 m^3/d
2	by: Agriculture, forestry and fishing ISIC (01-03)	1000 m^3/d
3	Mining and quarrying (ISIC 05-09)	1000 m^3/d
4	Manufacturing (ISIC 10-33)	1000 m^3/d
5	Electricity, gas, steam and air conditioning supply (ISIC 35)	1000 m^3/d
6	*of which by:* Electric power generation, transmission and distribution (ISIC 351)	1000 m^3/d
7	Construction (ISIC 41-43)	1000 m^3/d
8	Other economic activities	1000 m^3/d
9	Households	1000 m^3/d
10	Wastewater treated in urban wastewater treatment plants	1000 m^3/d
11	*Of which:* Primary treatment	1000 m^3/d
12	Secondary treatment	1000 m^3/d
13	Tertiary treatment	1000 m^3/d
14	Wastewater treated in other treatment plants	1000 m^3/d
15	*Of which:* Primary treatment	1000 m^3/d
16	Secondary treatment	1000 m^3/d
17	Tertiary treatment	1000 m^3/d
18	Wastewater treated in independent treatment facilities	1000 m^3/d
19	Non-treated wastewater	1000 m^3/d
20	Sewage sludge production (dry matter)	1000 t

Questionnaire tables…

Table W5: Population Connected to Wastewater Treatment

• If the value turns

Line	Category	Unit	1990		1995
1	**Population connected to wastewater collecting system**	%			
2	**Population connected to wastewater treatment**	%			
3	*of which* at least secondary treatment	%			
4	Population with independent wastewater treatment (e.g., septic tanks)	%			
5	Population not connected to wastewater treatment (100% - (2) - (4))	%			

Topics in the FDES that relate to water

Component 1: Environmental Conditions and Quality		
Subcomponent 1.1: Physical Conditions	**Subcomponent 1.2: Land Cover, Ecosystems and Biodiversity**	**Subcomponent 1.3: Environmental Quality**
1.1.1 Atmosphere, climate and weather	1.2.1 Land cover	1.3.2 Freshwater quality
1.1.2 Hydrographical characteristics	1.2.2 Ecosystems and biodiversity	1.3.3 Marine water quality
1.1.3 Geological and geographical information		

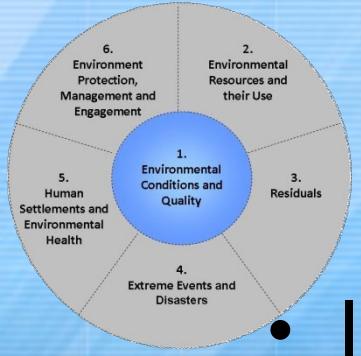
Component 2: Environmental Resources and their Use		
Subcomponent 2.3: Land	**Subcomponent 2.5: Biological Resources**	**Subcomponent 2.6: Water Resources**
2.3.1 Land use	2.5.2 Aquatic resources	2.6.1 Water resources
		2.6.2 Abstraction, use and returns of water

Component 3: Residuals
Subcomponent 3.2: Generation and Management of Wastewater
3.2.1 Generation and pollutant content of wastewater
3.2.2 Collection and treatment of wastewater
3.2.3 Discharge of wastewater to the environment

Component 4: Extreme Events and Disasters	
Subcomponent 4.1: Natural Extreme Events and Disasters	**Subcomponent 4.2: Technological Disasters**
4.1.1 Occurrence of natural extreme events and disasters	4.2.1 Occurrence of technological disasters
4.1.2 Impact of natural extreme events and disasters	4.2.2 Impact of technological disasters

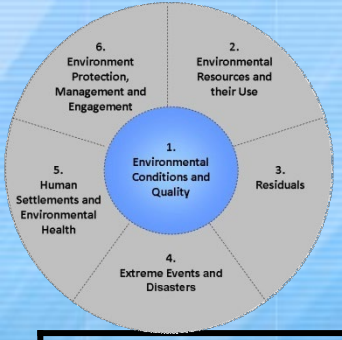
Component 5: Human Settlements and Environmental Health	
Subcomponent 5.1: Human Settlements	**Subcomponent 5.2: Environmental Health**
5.1.2 Access to selected basic services	5.2.2 Water-related diseases and conditions
5.1.3 Housing conditions	

Component 6: Environmental Protection, Management and Engagement		
Subcomponent 6.1: Environmental Protection and Resource Management Expenditure	**Subcomponent 6.2: Environmental Governance and Regulation**	**Subcomponent 6.3: Extreme Event Preparedness and Disaster Management**
6.1.1 Government environmental protection and resource management expenditure	6.2.1 Institutional strength	6.3.1 Preparedness for natural extreme events and disasters
6.1.2 Corporate, non-profit institution and household environmental protection and resource management expenditure	6.2.2 Environmental regulation and instruments	6.3.2 Preparedness for technological disasters
	6.2.3 Participation in MEAs and environmental conventions	



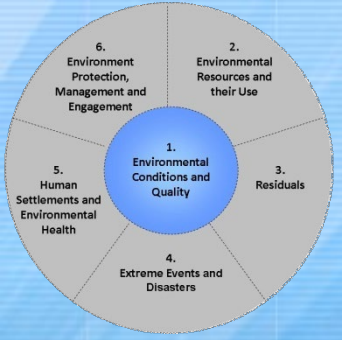
Component 1: Environmental Conditions and Quality

- Includes statistics about the physical, biological and chemical characteristics of the environment and their changes over time.
- These fundamental background conditions are strongly interrelated and determine the types, extent, conditions and health of ecosystems.
- Common sources: remote sensing and monitoring by environmental, meteorological, hydrological, geological and geographical authorities or institutions.



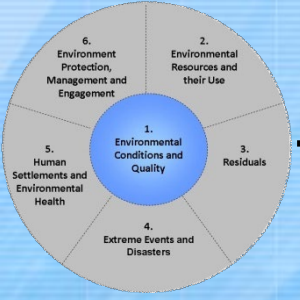
Component 1: Overview

Component 1 Environmental Conditions and Quality	**Sub-Component 1.1 Physical Conditions** (4 topics, 62 statistics)	**Topic 1.1.1:** Atmosphere, climate and weather **Topic 1.1.2:** Hydrographical characteristics **Topic 1.1.3**: Geological and geographical information **Topic 1.1.4**: Soil characteristics
	Sub-Component 1.2 Land Cover, Ecosystems and Biodiversity (3 topics, 20 statistics)	**Topic 1.2.1: Land cover** **Topic 1.2.2: Ecosystems and biodiversity** **Topic 1.2.3**: Forests
	Sub-Component 1.3 Environmental Quality (5 topics, 59 statistics)	**Topic 1.3.1:** Air quality **Topic 1.3.2: Freshwater quality** **Topic 1.3.3: Marine water quality** **Topic 1.3.4**: Soil pollution **Topic 1.3.5**: Noise



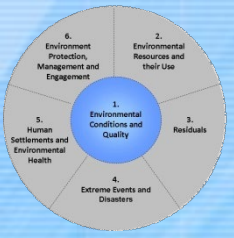
Sub-Component 1.1: Physical Conditions
Topic 1.1.1: Atmosphere, climate and weather

- This topic covers data on atmospheric, climatic and weather conditions across territories and over time.
- Weather information describes the atmosphere's behaviour over a given territory in the short term. It is recorded by countries through a network of monitoring stations.
- Relevant data usually include aspects such as temperature, precipitation, humidity, pressure, wind speed, solar radiation, ultraviolet (UV) radiation and the occurrence of El Niño and La Niña events.
- In most countries, atmospheric, weather and climate authorities monitor and record these types of environmental data over long periods using a network of monitoring stations scattered throughout the country.



Sub-Component 1.1: Physical Conditions
Topic 1.1.2: Hydrographical characteristics

- Includes hydrographical information on the extent, location and characteristics of lakes, rivers and streams, artificial reservoirs, watersheds, seas, aquifers and glaciers.
- This information is best presented in map form.
- The main sources are hydrographical and hydrological monitoring and information systems that are usually managed by national geographical, hydrological institutions and water authorities.



Sub-Component 1.2: Land Cover, Ecosystems and Biodiversity
Topic 1.2.1: Land Cover

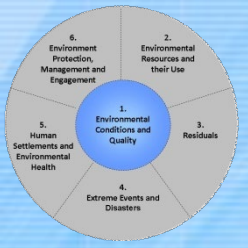
- This topic includes statistics on the extent, and the physical and spatial characteristics of land cover.
- The main source of land cover information is remote sensing data that maps the different categories of land cover.
- Land cover is “the observed (bio) physical cover on the earth's surface”. (FAO)

Sub-Component 1.2: Land Cover, Ecosystems and Biodiversity

Topic 1.2.2: Ecosystems and biodiversity

Ecosystems

- This topic covers physical quantitative as well as qualitative information and statistics about a country's main ecosystems, including the extent, chemical and physical characteristics, and biological components (biodiversity) of the ecosystems.
- Ecosystems are dynamic complexes of plant, animal and microorganism communities and the non-living environment interacting as a functional unit.
- The extent and conditions of the ecosystems determine their capacity to produce ecosystem services.
- For the purposes of characterizing the ecosystems of a country, in the absence of an internationally agreed ecosystem classification, national classifications may be used and fully described for statistical purposes.



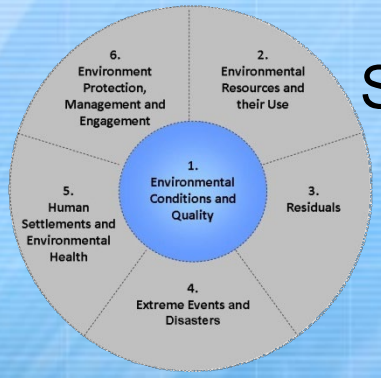
Sub-Component 1.3: Environmental Quality

Topic 1.3.2: Freshwater Quality

- Without sufficient quantities of good quality freshwater, ecosystems and humans cannot survive. Precipitation, aquifers, lakes, rivers, coastal zones and oceans are all interconnected in the water cycle, so the choice of where to measure or monitor pollutants and which pollutants to monitor will depend on local and national priorities, ecosystem characteristics and resources available.

- The quality of freshwater can be described based on concentrations of nutrients and chlorophyll, organic matter, pathogens, metals and organic contaminants, and by physical and chemical characteristics in surface water and groundwater.

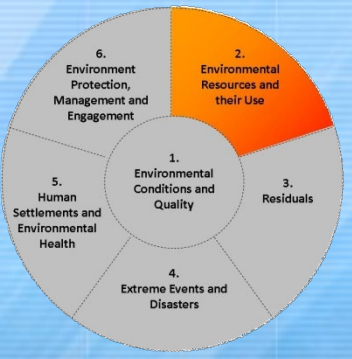
- Data for water quality statistics are sourced primarily from monitoring stations.



Sub-Component 1.3: Environmental Quality

Topic 1.3.3: Marine Water Quality

- Relevant statistics about marine and coastal water quality and pollutant concentrations may include, but are not limited to, nutrients and chlorophyll, organic matter, pathogens, metals, organic contaminants, physical and chemical characteristics, and coral bleaching.
- The most commonly monitored marine pollutants and associated phenomena, such as eutrophication and red tide, can be analysed as relevant in local, national or supranational terms, based on the type of pollution and effect.
- Data sources for marine water quality statistics are typically either national or international monitoring stations, associated with scientific research or compliance with policy objectives and targets.
- Spatial and temporal considerations are very important when constructing statistics on this topic.

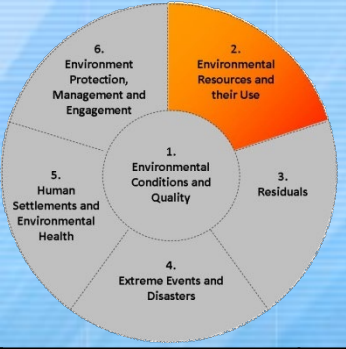


Component 2: Environmental Resources and their Use

- In Component 2, statistics on environmental resources and their use focus on measuring stocks and changes in stocks of these resources and their use for production and consumption.

- Statistics regarding the most important human activities related to the use of environmental resources help identify the possibilities for policy intervention. The activities that directly extract, abstract, harvest or restructure individual environmental resources are included under Component 2.

- The use of products originating from environmental resources in the economy and by households can be captured in physical and monetary supply and use tables originating from national accounts and also from sectoral statistics. The SEEA-CF links environmental resources after their extraction from the environment to their use as products in the economy and to the SNA.



Component 2: Overview

Component 2 Environmental Resources and Their Use	**Sub-Component 2.1 Mineral Resources** (2 topics, 13 statistics)	**Topic 2.1.1:** Stocks and changes of mineral resources **Topic 2.1.2:** Production and trade of minerals
	Sub-Component 2.2 Energy Resources (2 topics, 19 statistics)	**Topic 2.2.1:** Stocks and changes of energy resources **Topic 2.2.2:** Production, trade and consumption of energy
	Sub-Component 2.3 Land (2 topics, 11 statistics)	**Topic 2.3.1:** Land use **Topic 2.3.2:** Use of forest land
	Sub-Component 2.4 Soil Resources	**Topic 2.4.1:** Soil resources
	Sub-Component 2.5 Biological Resources (5 topics, 53 statistics)	**Topic 2.5.1:** Timber resources **Topic 2.5.2:** Aquatic resources **Topic 2.5.3:** Crops **Topic 2.5.4:** Livestock **Topic 2.5.5:** Other non-cultivated biological resources
	Sub-Component 2.6: Water Resources (2 topics, 28 statistics)	**Topic 2.6.1**: Water resources **Topic 2.6.2**: Abstraction, use and returns of water

Sub-Component 2.3: Land

Topic 2.3.1: Land Use

- Land use reflects both the activities undertaken and the institutional arrangements put in place for a given area for the purposes of economic production, or the maintenance and restoration of environmental functions. Land being “used” means the existence of some kind of human activity or management.
- Consequently, there are areas of land that are “not in use” by human activities. These areas are important from an ecological point of view.

- Land use statistics cover both land in use and land not in use.
- Statistics on land use are usually obtained through the combination of field surveys and remote sensing (mostly satellite images). Land use data may also be obtained from administrative land registers where available.
- A reference framework for the interim classification of land use is provided in the SEEA-CF as agreed after a comprehensive global consultation process.

Sub-Component 2.5: Biological Resources

- Biological resources:
  - are renewable resources that are capable of regeneration through natural (non-managed or managed) processes.
  - form an important part of biodiversity and ecosystems.
  - include timber and aquatic resources and a range of other animal and plant resources (such as livestock, orchards, crops and wild animals), fungi and bacteria.
  - can be natural (non-cultivated) or cultivated.

- Cultivated biological resources may impact the environment differently than natural ones. This is quite evident in the case of mono-cultivated, intensive crops that use irrigation and increasing amounts of fertilizers and pesticides.

Sub-Component 2.5: Biological Resources
Topic 2.5.2: Aquatic resources

- Aquatic resources:
  - comprise fish, crustaceans, molluscs, aquatic mammals and other aquatic organisms.
  - may be either cultivated or natural biological resources. Aquatic resources produced within aquaculture facilities (for breeding or for harvest) are considered cultivated biological resources. All other aquatic resources harvested as part of capture production processes are considered natural biological resources.
- Changes in the stocks of aquatic resources are the result of growth in stocks, total removals, and natural and catastrophic losses.
- Aquaculture is the farming of aquatic organisms.
- The FAO International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP) is commonly used for statistics on aquatic resources.
- The use of aquatic products in the economy and by households can be captured in physical and monetary supply and use tables originating from national accounts.

Sub-Component 2.6: Water Resources

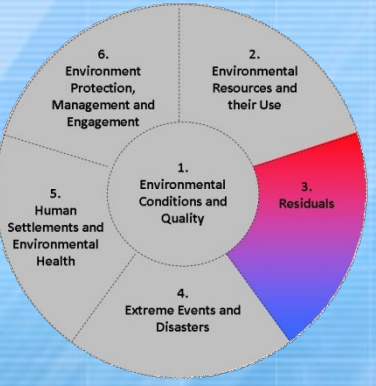
Topic 2.6.1: Water Resources

- Water resources consist of fresh and brackish water, regardless of their quality, in inland water bodies, including surface water, groundwater and soil water.
- Inland water stocks are the volume of water contained in surface water and groundwater bodies and in the soil at a point in time.
  - Surface water comprises all water that flows over or is stored on the ground's surface, regardless of its salinity levels.
  - Groundwater comprises water that collects in porous layers of underground formations known as aquifers.
- Statistics on water resources include the volume of water generated within the country or territory as the result of precipitation, the volume of water lost to evapotranspiration, the inflow of water from neighbouring territories, and the outflow of water to neighbouring territories or the sea.
- The statistics are sourced from hydrometeorological and hydrological monitoring, measurements and models.
- *Statistics on the quality of water in water bodies are discussed under Topic 1.3.2: Freshwater quality and Topic 1.3.3: Marine water quality.*

Sub-Component 2.6: Water resources

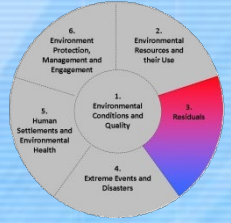
Topic 2.6.2: Abstraction, use and returns of water

- Abstraction, use and returns of water are the flows of water between the environment and the human sub-system and within the human sub-system.
- Water abstraction is the amount of water that is removed from any source, either permanently or temporarily, in a given period of time. Water is abstracted from surface water and groundwater resources by economic activities and households. It can be abstracted for own use or for distribution to other users.
- After abstraction and distribution, water is used in the economy in production and consumption activities. Water can be recycled and reused several times before it is returned to the environment. Statistics on water use can be obtained from statistical surveys of primary users, household surveys and administrative records of the water supply industry.
- A large part of the water used in economic activities and by households is returned to the environment after or without treatment.



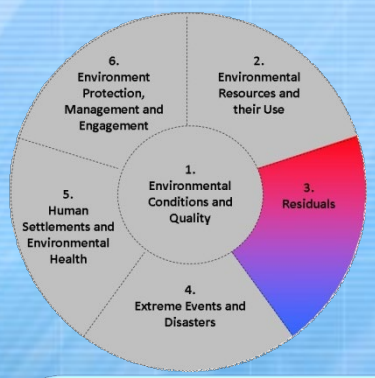
Component 3: Residuals

- The FDES covers the main groups of residuals that are emissions of substances to air, water or soil, wastewater and waste, and the release of residuals from the application of chemical substances.
- Generally, emissions are analysed by the type of receiving environment (air, water or soil) and type of substance.
- Statistics on residuals must be broken down according to the economic activity that generated them, based on ISIC.



Component 3: Overview

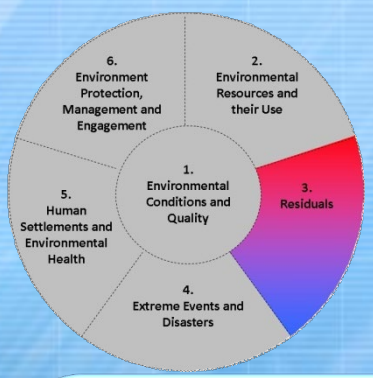
Component 3 Residuals	**Sub-Component 3.1 Emissions to Air** (3 topics, 20 statistics)	**Topic 3.1.1:** Emissions of greenhouse gases **Topic 3.1.2:** Consumption of ozone depleting substances **Topic 3.1.3:** Emissions of other substances
	Sub-Component 3.2 Generation and Management of Wastewater (3 topics, 11 statistics)	**Topic 3.2.1:** Generation and pollutant content of wastewater **Topic 3.2.2:** Collection and treatment of wastewater **Topic 3.2.3:** Discharge of wastewater to the environment
	Sub-Component 3.3 Generation and Management of Waste (2 topics, 20 statistics)	**Topic 3.3.1:** Generation of waste **Topic 3.3.2:** Management of waste
	Sub-Component 3.4 Release of Chemical Substances (1 topic, 7 statistics)	**Topic 3.4.1:** Release of chemical substances



Sub-Component 3.2: Generation and Management of Wastewater

Topic 3.2.1: Generation and pollutant content of wastewater

- Includes statistics on the volume of water that is no longer required and is thus discarded by the user and statistics on the amount of pollutants contained in wastewater (emissions to water) before any collection or treatment.
- Statistics on the generation of wastewater and emissions to water should be broken down by the economic activity and households that generate them.
- Wastewater generation is usually estimated based on the volume of water used.
- The pollutant content of wastewater (emissions to water) can usually be obtained from monitoring at the place of generation or from estimates based on technological parameters.



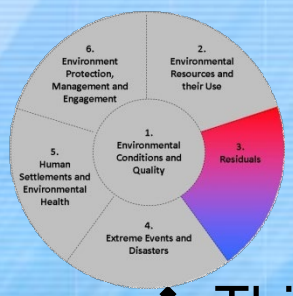
Sub-Component 3.2: Generation and Management of Wastewater

Topic 3.2.2: Collection and treatment of wastewater

- Wastewater may be discharged directly to the environment by the generator or may be collected in sewerage systems and treated in wastewater treatment plants.

- Include statistics describing:
  - (i) volumes of wastewater collected and transported to its final place of discharge or treatment facilities;
  - (ii) volume of wastewater treated by type of treatment (primary, secondary and tertiary);
  - (iii) physical infrastructure related to wastewater collection and treatment (e.g., number of treatment plants, capacities of plants);
  - (iv) pollutant content extracted in the treatment facilities; and
  - (v) other relevant information.

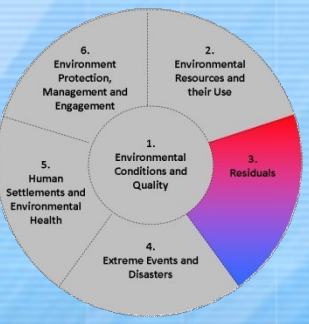
- Establishments that collect and treat wastewater are grouped under ISIC Rev.4, Section E, Division 37 Sewerage.



Topic 3.2.3: Discharge of wastewater to the environment

- This topic captures information at the stage of final discharge of wastewater to the environment. It includes:
  - (i) volume of wastewater discharged to the environment without treatment,
  - (ii) volume of wastewater discharged to the environment after treatment, by type of treatment (primary, secondary and tertiary) and type of treatment facility (public, private, municipal, industrial), and
  - (iii) effluent quality.

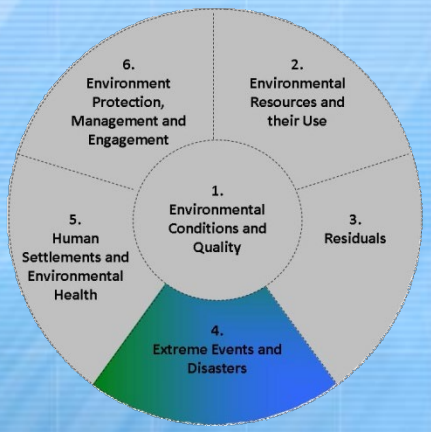
- Sources of data:
  - Statistics on the volume of wastewater discharged after treatment can be obtained from administrative records of the treatment plants.
  - Statistics on the volume of wastewater released without treatment can be obtained from economic units and records of sewerage companies or estimated on the basis of water use. The volume of discharged wastewater should also be disaggregated by recipient water body.



Topic 3.2.3: Discharge of wastewater to the environment

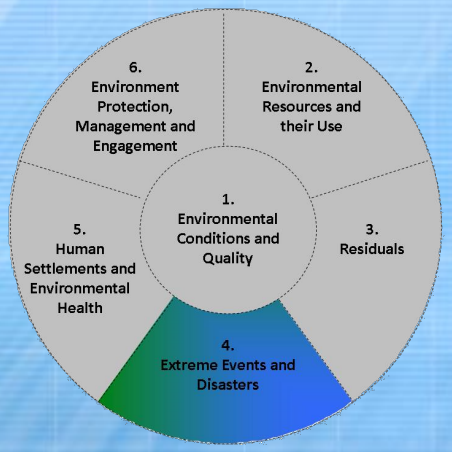
Emissions of pollutants to water bodies:

- In addition to the volume of wastewater returned to the environment, it is also important to measure or estimate the volumes of different pollutants emitted with the wastewater or otherwise released to water bodies.
- Emissions to water are the substances released to water resources by establishments and households as a result of production, consumption and accumulation processes.
- Emissions to water should be disaggregated according to the releasing economic activities and should cover the most important substances.



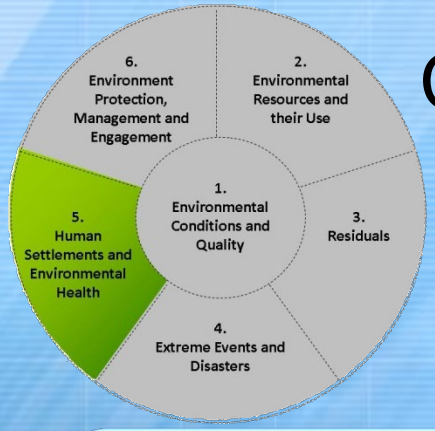
Component 4: Extreme Events and Disasters

- This component organizes statistics on the occurrence of extreme events and disasters and their impacts on human well-being and the infrastructure of the human sub-system.
- The most common data providers are:
  - national and sub-national authorities responsible for disaster management and assistance;
  - emergency management and response agencies;
  - insurance companies;
  - optical and radar satellite operators for satellite information;
  - seismic monitoring and research centres.



Component 4: Overview

Component 4 **Extreme Events and Disasters**	**Sub-Component 4.1** **Natural Extreme Events and Disasters** (2 topics, 16 statistics)	**Topic 4.1.1:** Occurrence of natural extreme events and disasters **Topic 4.1.2:** Impact of natural extreme events and disasters
	Sub-Component 4.2 **Technological Disasters** (2 topics, 15 statistics)	**Topic 4.2.1:** Occurrence of technological disasters **Topic 4.2.2:** Impact of technological disasters



Component 5: Human Settlements and Environmental Health

- Contains statistics on the environment in which humans live and work: living conditions and environmental health.
- These statistics are important for the management and improvement of conditions related to human settlements, shelter conditions, safe water, sanitation, and health, particularly in the context of rapid urbanization, increasing pollution, environmental degradation, disasters, extreme events, and climate change.

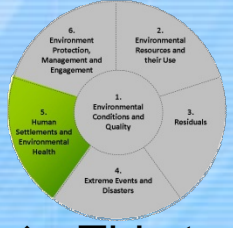
Component 5: Overview

Component 5 Human Settlements and Environmental Health	**Sub-Component 5.1** **Human Settlements** (5 topics, 31 statistics)	**Topic 5.1.1:** Urban and rural population **Topic 5.1.2:** Access to selected basic services **Topic 5.1.3:** Housing conditions **Topic 5.1.4:** Exposure to ambient pollution **Topic 5.1.5:** Environmental concerns specific to urban settlements
	Sub-Component 5.2 **Environmental Health** (5 topics, 23 statistics)	**Topic 5.2.1:** Airborne diseases and conditions **Topic 5.2.2:** Water-related diseases and conditions **Topic 5.2.3:** Vector-borne diseases **Topic 5.2.4:** Health problems associated with excessive UV radiation exposure **Topic 5.2.5:** Toxic substance- and nuclear radiation- related diseases and conditions

Sub-Component 5.1: Human Settlements

Topic 5.1.2: Access to selected basic services

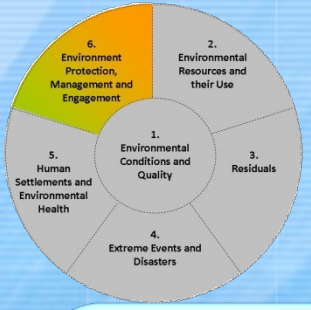
- This topic includes information about access to water, sanitation, waste removal services and energy in urban and rural areas.
- Access to these basic services can have a positive effect on human health and well-being, thereby contributing to improved environmental quality.
- Relevant statistics on this topic include:
  - population using an improved drinking water source;
  - population using an improved sanitation facility;
  - population supplied by the water supply industry;
  - price of water;
  - population connected to wastewater collecting system;
  - population connected to wastewater treatment;
  - population served by municipal waste collection;
  - population with access to electricity; and
  - price of electricity.



Sub-Component 5.2: Environmental Health

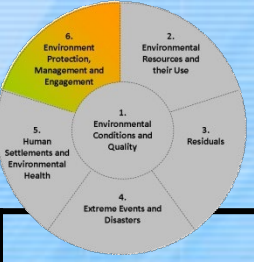
Topic 5.2.2: Water-related diseases and conditions

- This topic includes all water-related diseases and conditions that result from micro-organisms and chemicals in the water that humans drink.
- Water-related diseases and conditions are still significant public health problems in developing countries. They include, but are not limited to, diseases caused by biological contamination, such as gastroenteritis infections caused by bacteria, viruses and protozoa, and water-borne parasite infections.
- This topic may also include diseases and health problems associated with the (organic or inorganic) chemical contamination of water (e.g., from arsenic, cadmium, chromium or copper) as prolonged exposure to these chemicals can provoke health problems including:
  - increased risk of cancer
  - organ damage and malfunction
  - increased blood cholesterol and blood pressure
- Statistics include morbidity (incidence and prevalence) and mortality of these diseases or conditions, as well as measures of the associated impact on the labour force and on the economic costs.



Component 6: Environmental Protection, Management and Engagement

- This component organizes information on environmental protection and resource management expenditure to improve the environment and maintain ecosystem health.
- Statistics on environmental governance, institutional strength, enforcement of regulations and extreme event preparedness are also considered.
- This component also includes information on a wide variety of programmes and actions to increase awareness, including environmental information and education, as well as private and community activities aimed at diminishing environmental impacts and improving the quality of local environments.



Component 6: Overview

Component 6 **Environmental Protection, Management and Engagement**	**Sub-Component 6.1** **Environmental Protection and Resource Management Expenditure** (2 topics, 8 statistics)	**Topic 6.1.1:** Government environmental protection and resource management expenditure **Topic 6.1.2:** Corporate, non-profit institution and household environmental protection and resource management expenditure
	Sub-Component 6.2 **Environmental Governance and Regulation** (3 topics, 19 statistics)	**Topic 6.2.1:** Institutional strength **Topic 6.2.2:** Environmental regulation and instruments **Topic 6.2.3:** Participation in MEAs and environmental conventions
	Sub-Component 6.3 **Extreme Event Preparedness and Disaster Management** (2 topics, 10 statistics)	**Topic 6.3.1:** Preparedness for natural extreme events and disasters **Topic 6.3.2:** Preparedness for technological disasters
	Sub-Component 6.4 **Environmental Information and Awareness** (4 topics, 13 statistics)	**Topic 6.4.1:** Environmental information **Topic 6.4.2:** Environmental education **Topic 6.4.3:** Environmental perception and awareness **Topic 6.4.4:** Environmental engagement

Environment Statistics Self-Assessment Tool, Part II: Statistics Level Assessment

Statistics and ated Information **Bold Text - Core Set/Tier 1** egular Text - Tier 2 *licized Text - Tier 3*	**Category of Measurement**	**Potential Aggregations and Scales**	**Relevance of Statistic at the National Level (High /Medium /Low/Not Relevant/Not Applicable)**	**Priority for National Data Collection (High /Medium /Low/Not a Priority)**	**Availability of Statistic at the National Level (Identical/Similar/Not Available)**	**Primary Institution(s) Responsible for Collecting Statistic** Check all that apply			**Type of Data Source**	**Requirements or User Requests for Collection/ Reporting on this Statistic** Check all that apply				**Periodicity (Annual/Monthly/Daily/Hourly/Other [specify])**	**Earliest Year Available**	**Latest Year Available**	**Format of Statistic (Publication/Excel/Database/Website/Individual records)**	**Unit of Measurement**	**Main Reasons why Statistic is not Available** Check all that apply					
						NSO	Ministry of Environment or equivalent institution	Other (specify):		Sub-national	National	Regional	International						Resource constraints	Methodological/Technical difficulty in data collection	Insufficient quality	Inaccessibility	Lack of institutional set-up /coordination	Other (specify):

https://unstats.un.org/unsd/envstats/fdes/essat.cshtml

Exercise in breakout groups…

- Let's analyse data sources, availability of statistics, priority of statistics, etc. relevant to Water Statistics in the FDES by applying the Environment Statistics Self-Assessment Tool.

Relevance of Statistic at the National Level (High /Medium /Low/Not Relevant/Not Applicable)
Priority for National Data Collection (High /Medium /Low/Not a Priority)
Availability of Statistic at the National Level (Identical/Similar/Not Available)

Primary Institution(s) Responsible for Collecting Statistic Check all that apply	
	NSO
	Ministry of Environment or equivalent institution
	Other (specify):

https://unstats.un.org/unsd/envstats/fdes/essat.cshtml

Exercise in breakout groups…

Type of Data Source

- Statistical surveys
- Administrative records
- Remote sensing
- Monitoring systems
- Scientific research
- Special projects

Requirements or User Requests for Collection/ Reporting on this Statistic

Sub-national
National
Regional
International

Exercise in breakout groups…

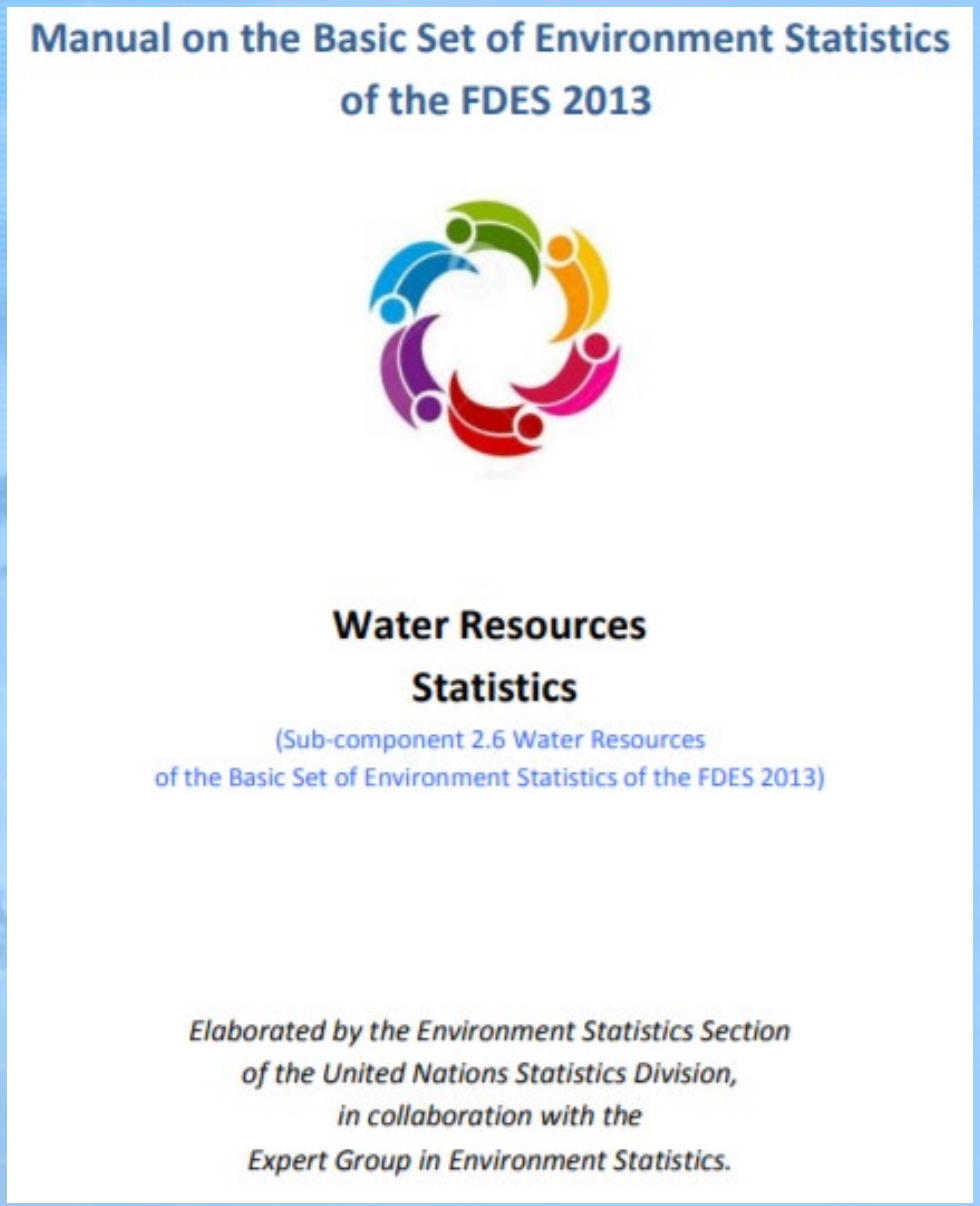
- Component 1 inc. Precipitation; lakes; rivers; coastal area; land cover; freshwater quality; marine water quality etc.
- Component 2 inc. land use; fisheries; inland water stocks; water abstractions
- Component 3 inc. volume of wastewater; pollutant content of wastewater; urban wastewater treatment capacity; wastewater discharge to environment
- Component 4 inc. occurrence of natural/technological extreme events and disasters; people affected by nat/tech extreme events and disasters
- Component 5 inc. population using improved drinking water/improved sanitation facility; population connected to wastewater treatment; water-related diseases and conditions
- Component 6 inc. environmental protection and resource management expenditure; participation in MEAs/Conventions

Questions following breakout group work…

- Please identify your component and the title of that component (e.g. Component 1: Environmental Resources and their Use).
- How applicable and useful is this tool? How could you adapt this tool to be best applicable to Namibia?
- Could it feature in some way in written or verbal communications among institutions via an interinstitutional Committee?

Exercise in breakout groups…

Suggested reference source during this exercise…



https://unstats.un.org/unsd/envstats/fdes/manual_bses.cshtml

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