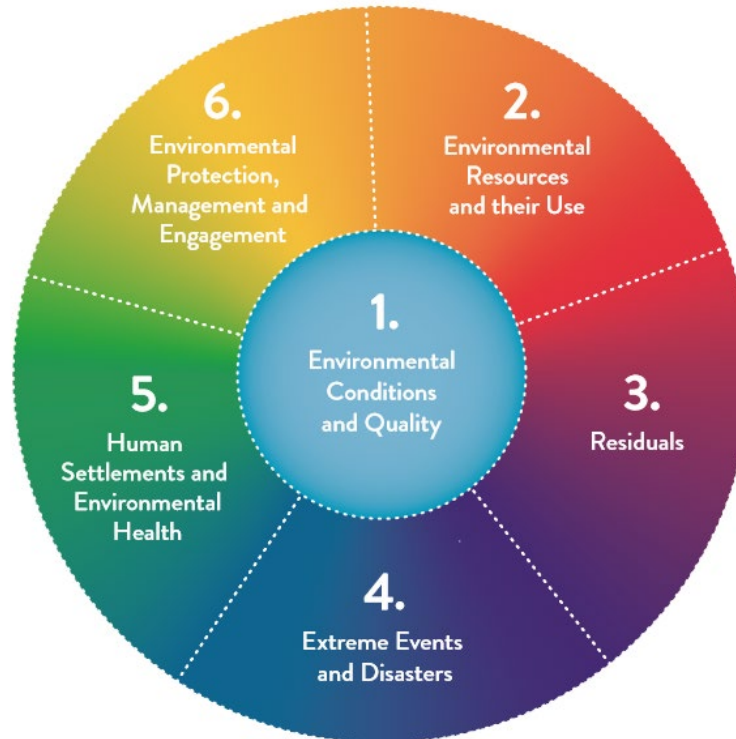


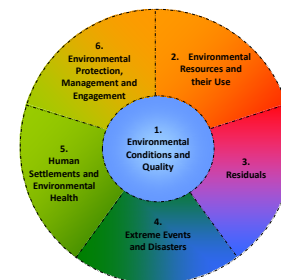
# Session 4.1: FDES 2013 Subcomponents 3.3: Generation and Management of Waste and 3.4: Release of Chemical Substances



Regional Workshop on Environment Statistics and Climate Change Statistics  
for the Caribbean Community (CARICOM) Region

St. George's, Grenada, 4-8 November 2019

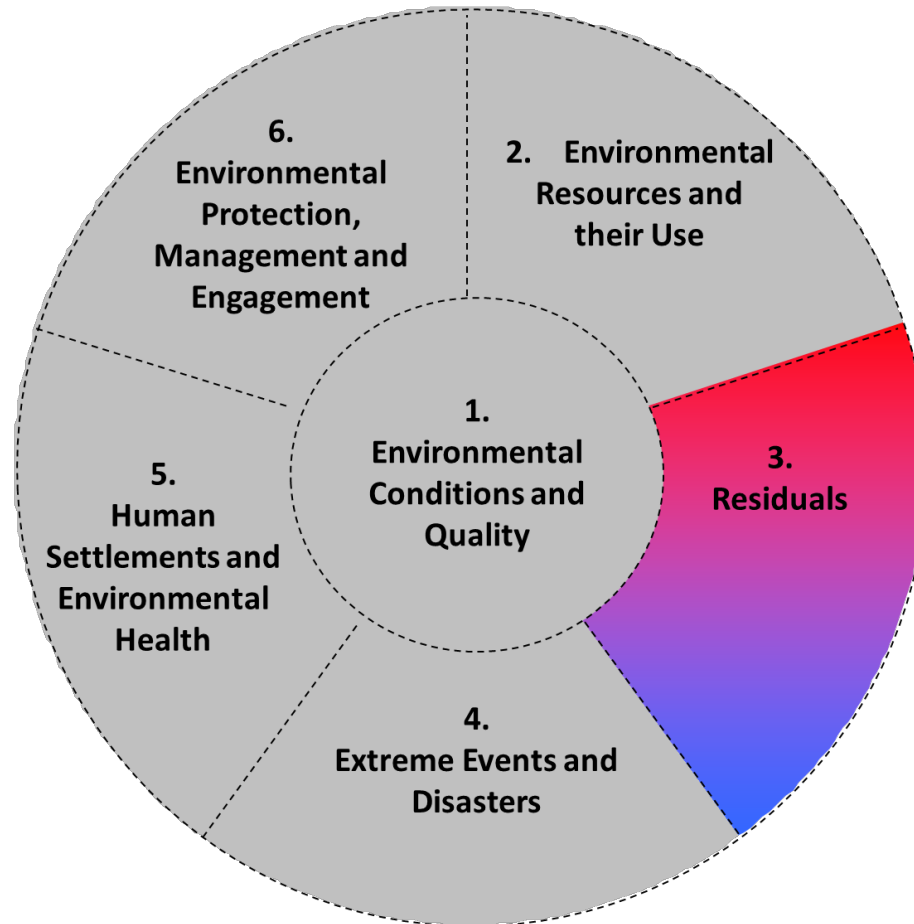




- This presentation has been elaborated by the Environment Statistics Section of the United Nations Statistics Division.
- It is based on Chapter 3 of the Framework for the Development of Environment Statistics (FDES 2013).

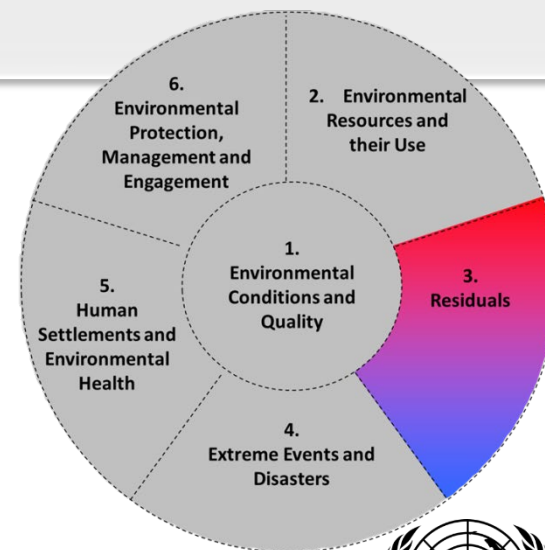


# Component 3: Residuals



## Contents of Component 3: Residuals

- ❖ Contains statistics on the amount and characteristics of residuals generated by human production and consumption processes, their management, and their final release to the environment.
- ❖ Residuals:
  - are flows of solid, liquid and gaseous materials, and energy, that are discarded, discharged or emitted by establishments and households through processes of production, consumption or accumulation.
  - may be discarded, discharged or emitted directly to the environment or be captured, collected, treated, recycled or reused.



## 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.

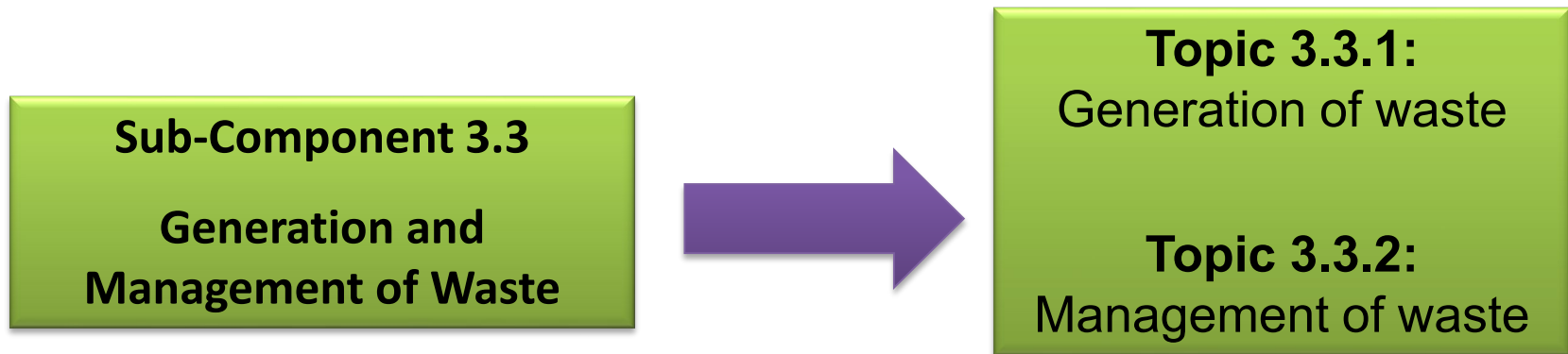


## Component 3: Overview

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



## Sub-Component 3.3: Generation and Management of Waste



## Sub-Component 3.3: Generation and Management of Waste

- ❖ Includes statistics on the amount and characteristics of waste, defined as discarded material for which the owner or user has no further use, generated by human activities in the course of production and consumption processes.
- ❖ Relevant statistics cover the amount of waste generated by different sources that are economic activities (by ISIC categories) and households.
- ❖ Policy makers, particularly local governments, require statistics on waste in order to assess how its generation changes over time.





## Sub-Component 3.3: Generation and Management of Waste

### Topic 3.3.1: Generation of waste

- ❖ This topic includes statistics describing the amount of waste generated before any collection or treatment, by waste type, and by generator (by economic activity (by ISIC) and households).
- ❖ The waste lists that countries and international organizations use for waste statistics are usually based either on the generating process or the material content of the waste, or on the combination of the two.
- ❖ Statistics on waste generation are usually estimated from the records of the economic units engaged in waste collection, treatment and disposal.
- ❖ Hazardous waste is a special group of waste that, due to its toxic or other hazardous character, requires special management and is controlled by law in many countries.
- ❖ The Basel Convention, a multilateral environmental agreement, focuses on the control of transboundary movements of hazardous waste across international borders and establishes criteria for the environmentally sound management of such waste.
- ❖ Reporting needs under this convention include the generation of hazardous waste, as well as the imports and exports of hazardous waste covered in Topic 3.3.2: Management of Waste.





## Sub-Component 3.3: Generation and Management of Waste

### Topic 3.3.1: Generation of waste

#### Component 3: Residuals

#### Sub-component 3.3: Generation and Management of Waste

Topic	Statistics and Related Information ( <b>Bold Text</b> - Core Set/Tier 1; Regular Text - Tier 2; <i>Italicized Text</i> - Tier 3)		Category of Measurement	Potential Aggregations and Scales	Methodological Guidance
<b>Topic 3.3.1: Generation of waste</b>	a.	<b>Amount of waste generated by source</b>	Mass	<ul style="list-style-type: none"> <li>▪ By ISIC economic activity</li> <li>▪ By households</li> <li>▪ By tourists</li> <li>▪ National</li> <li>▪ Sub-national</li> </ul>	<ul style="list-style-type: none"> <li>▪ European Commission: European List of Waste, pursuant to European Waste Framework Directive</li> <li>▪ Eurostat: Environmental Data Centre on Waste</li> <li>▪ Eurostat: European Waste Classification for Statistics (EWC-Stat), version 4 (Waste categories)</li> <li>▪ Basel Convention: Waste categories and hazardous characteristics</li> <li>▪ Eurostat: Manual on Waste Statistics</li> <li>▪ Eurostat: Guidance on classification of waste according to EWC-Stat categories</li> <li>▪ SEEA Central Framework (2012)</li> <li>▪ UNSD: Environment Statistics Section-Waste Questionnaire</li> </ul>
	b.	Amount of waste generated by waste category	Mass	<ul style="list-style-type: none"> <li>▪ By waste category (e.g., chemical waste, municipal waste, food waste, combustion waste)</li> <li>▪ National</li> <li>▪ Sub-national</li> </ul>	
	c.	<b>Amount of hazardous waste generated</b>	Mass	<ul style="list-style-type: none"> <li>▪ By ISIC economic activity</li> <li>▪ National</li> <li>▪ Sub-national</li> </ul>	

## Sub-Component 3.3: Generation and Management of Waste

### Topic 3.3.2: Management of waste

❖ Includes statistics on:

- (i) the amount of waste collected and transported to treatment facilities or final disposal;
- (ii) the amount of waste treated and disposed of by type of treatment and disposal (e.g., reuse, recycling, composting, incineration, landfilling, other);
- (iii) the physical infrastructure for waste treatment and disposal, including the number and capacity of treatment and disposal plants; and
- (iv) other relevant information.





## Sub-Component 3.3: Generation and Management of Waste

### Topic 3.3.2: Management of waste

<b>Topic 3.3.2: Management of waste</b>	a.	Municipal waste		<ul style="list-style-type: none"> <li>▪ By type of treatment and disposal (e.g., reuse, recycling, composting, incineration, landfilling, other)</li> <li>▪ By type of waste, when possible</li> <li>▪ National</li> <li>▪ Sub-national</li> </ul>	<ul style="list-style-type: none"> <li>▪ Eurostat: Environmental Data Centre on Waste</li> <li>▪ Eurostat metadata: Organisation for Economic Co-operation and Development (OECD)/Eurostat definition of municipal waste</li> <li>▪ UNSD: Environment Statistics Section-Waste Questionnaire</li> <li>▪ Basel Convention: Waste categories and hazardous characteristics</li> <li>▪ Eurostat: EWC-Stat, version 4 (Waste categories)</li> <li>▪ European Commission: European Waste Framework Directive (Waste treatment operations)</li> <li>▪ Eurostat: Manual on Waste Statistics</li> <li>▪ Eurostat: Guidance on classification of waste according to EWC-Stat categories</li> <li>▪ Rotterdam Convention</li> </ul>
		<b>1. Total municipal waste collected</b>	Mass		
		<b>2. Amount of municipal waste treated by type of treatment and disposal</b>	Mass		
		<b>3. Number of municipal waste treatment and disposal facilities</b>	Number		
		4. Capacity of municipal waste treatment and disposal facilities	Volume		
	b.	Hazardous waste			
		<b>1. Total hazardous waste collected</b>	Mass		
		<b>2. Amount of hazardous waste treated by type of treatment and disposal</b>	Mass		
		<b>3. Number of hazardous waste treatment and disposal facilities</b>	Number		
		4. Capacity of hazardous waste treatment and disposal facilities	Volume		
	c.	Other/industrial waste			
		1. Total other/industrial waste collected	Mass		
		2. Amount of other/industrial waste treated by type of treatment and disposal	Mass		
		3. Number of other/industrial treatment and disposal facilities	Number		
		4. Capacity of other/industrial waste treatment and disposal facilities	Volume		
	d.	<b>Amount of recycled waste</b>	Mass		
e.	Imports of waste	Mass	<ul style="list-style-type: none"> <li>▪ By waste category (e.g., chemical waste, municipal waste, combustion waste)</li> </ul>		
f.	Exports of waste	Mass			
g.	Imports of hazardous waste	Mass			
h.	Exports of hazardous waste	Mass			

## Sub-Component 3.4: Release of Chemical Substances

**Sub-Component 3.4**  
**Release of Chemical**  
**Substances**



**Topic 3.4.1:**  
**Release of chemical**  
**substances**



## Sub-Component 3.4: Release of Chemical Substances

### Topic 3.4.1: Release of Chemical Substances

- ❖ This topic deals with chemical fertilizers to enrich soils and pesticide use in protecting plants and animals from disease. Other chemicals accelerate the growth of biota and preserve and enhance the quality, size and appearance of biological products.
- ❖ Environmental effects are generated by the diffusion of chemicals through cycling systems and build-up of contaminants in water, land and living organisms (through the food chain).
- ❖ Statistics under this topic include the amount of natural and chemical fertilizers, pesticides and other chemicals (hormones and pellets) used by type of active ingredients (see also Sub-component 2.5: Biological Resources), the area under application and the method employed.
- ❖ These statistics serve as a proxy or the basis for estimating the chemicals that remain in the environment and affect environmental quality.



## Sub-Component 3.4: Release of Chemical Substances

### Topic 3.4.1: Release of Chemical Substances

#### Multilateral Environmental Agreements (MEAs):

- ❖ The Stockholm Convention on Persistent Organic Pollutants (POPs) aims to eliminate or restrict the production and use of POPs. POPs are defined by the convention as “chemical substances that persist in the environment, bioaccumulate through the food web, and pose a risk of causing adverse effects to human health and the environment”.
- ❖ The Stockholm Convention identified initial 12 chemicals or chemical groups for priority action, including aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, toxaphene, PCBs, polychlorinated dioxins and polychlorinated furans.



# Thank you for your attention!

For more information please contact the Environment Statistics Section  
at the United Nations Statistics Division:

E-mail: [envstats@un.org](mailto:envstats@un.org)

Website: <https://unstats.un.org/unsd/envstats/>

