

Components, sub-components and statistical topics of the FDES 2013

Component 5: Human Settlements and Environmental Health



Workshop on Environment Statistics in support of the implementation of the Framework for the Development of Environment Statistics (FDES 2013) (Lomé, Togo, 19-23 October 2015)

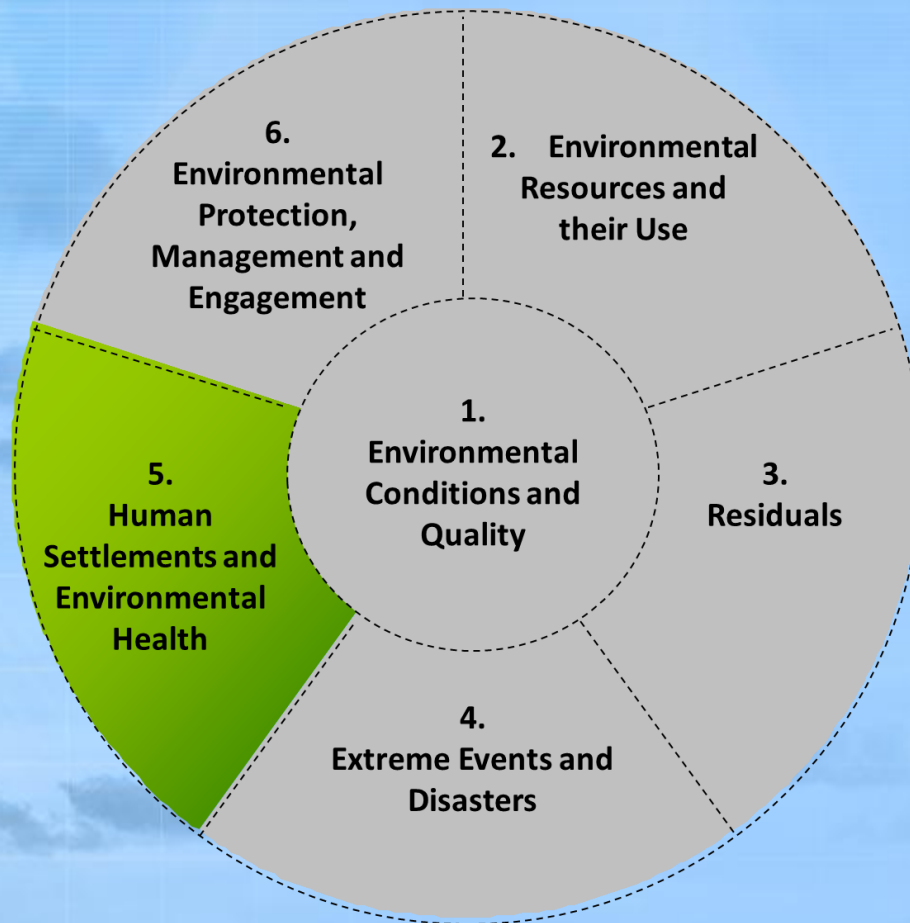
Environment Statistics Section, United Nations Statistics Division



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



Component 5: Human Settlements and Environmental Health





Contents of Component 5: Human Settlements and Environmental Health

- ❖ Contains statistics on the environment in which humans live and work, particularly with regard to 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.





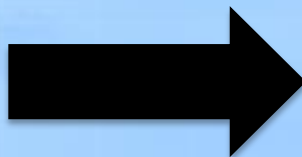
Component 5: Overview

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

**Sub-Component 5.1
Human Settlements**



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 5.1: Human Settlements

- ❖ Includes relevant statistics on basic services and infrastructure of human settlements.
- ❖ They encompass the human population that resides in a settlement, the physical elements (e.g., shelter and infrastructure), services (e.g., water, sanitation, waste removal, energy and transport), and the exposure of humans to potentially deleterious environmental conditions.
- ❖ Sources of data:
 - Censuses
 - Surveys
 - Administrative records
 - Remote sensing
- ❖ Institutional partners of the NSO include:
 - Housing and urban planning authorities
 - Health and transportation authorities
 - Research institutions
- ❖ Presenting the statistics spatially using maps and geospatial statistics adds important value to the information produced.





Sub-Component 5.1: Human Settlements

Topic 5.1.1: Urban and rural population

- ❖ Depending on the carrying capacity of ecosystems, human settlements and their use of environmental resources will affect environmental conditions, as well as human wellbeing and health.
- ❖ Statistics on the location of human settlements may be found in traditional demographic statistics and, increasingly, in geospatial information sources.
- ❖ The main statistics pertaining to this topic are rural, urban and total population, including population density.
- ❖ Sources of data:
 - Censuses
 - Household surveys





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 wellbeing, 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 5.1: Human Settlements

Topic 5.1.3: Housing conditions

- ❖ This topic includes information on the sufficiency of housing in terms of the following characteristics: population access to an adequate dwelling; the characteristics of the houses in which both rural and urban population live, including the quality of the houses (e.g., building materials) and location in a safe or a hazard-prone area.
- ❖ Housing access and conditions have a direct effect on human wellbeing and health, and these data serve as critical measures of those attributes.
- ❖ Housing condition statistics need to be described according to national conditions and priorities. Income distribution directly influences access to housing, the quality of homes accessible to different social groups, and their location.
- ❖ Relevant statistics include:
 - With regard to housing sufficiency, statistics may include, but are not limited to, the number and proportion of individuals or families that do not have access to adequate dwelling. Statistics may also be generated about the homeless population.
 - Depending on the country, common statistics describing the quality and location of houses in either safe or hazard-prone areas include the urban population living in slums, area of slums or population living in informal settlements, and the number of dwellings with adequate building materials as defined by national or local standards.
- ❖ Sources of data:
 - Censuses
 - Household surveys





Sub-Component 5.1: Human Settlements

Topic 5.1.4: Exposure to ambient pollution

- ❖ Includes spatially described statistics on human populations exposed to different levels of air and noise pollution.
- ❖ This topic overlays pollutant emission and exposure data onto geographic and demographic data to create a more detailed understanding of the location of populations currently exposed to pollutants and those most at risk of future exposure.
- ❖ Statistics include the number of people exposed to air or noise pollutants in specific areas and the percentage of the exposed population out of the total population of the city or region.
- ❖ Sources of data:
 - NSOs carrying out censuses and surveys (for demographic statistics)
 - environmental authorities (for point pollution emissions)
 - geographic or cartographic authorities.



Sub-Component 5.1: Human Settlements

Topic 5.1.5: Environmental concerns specific to urban settlements

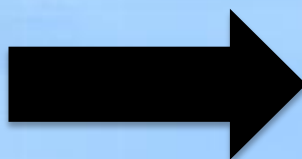
- ❖ This topic is intended to organize issues of specific relevance to this part of the population. Depending on national and local conditions and priorities, additional environmentally relevant urban concerns should be included here. Such issues may include, but are not limited to the:
 - extent of urban sprawl
 - availability of green spaces for urban residents
 - prevailing types of transportation in and between urban areas, and
 - existence and effectiveness of urban planning and zoning.
- ❖ Sources of data:
 - Administrative records and remote sensing





Sub-Component 5.2: Environmental Health

**Sub-Component 5.2
Environmental Health**



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 5.2: Environmental Health

- ❖ Environmental health focuses on how environmental factors and processes impact and change human health. It can be defined as an interdisciplinary field that focuses on analysing the relationship between public health and the environment.
- ❖ From the health perspective, WHO states that “environmental health addresses all the physical, chemical, and biological factors external to a person, and all the related factors impacting behaviours. It encompasses the assessment and control of those environmental factors that can potentially affect health. It is targeted towards preventing disease and creating health-supportive environments [...]”.
- ❖ Statistics:
 - Common measures of health problems within human populations include statistics on morbidity (incidence and prevalence) and mortality associated with specific types of diseases and conditions that are heavily influenced by environmental factors.
 - Estimates of premature death, the loss of work days and estimation of the economic cost in monetary terms (e.g., loss of wages or costs of treatment) may also be included in environmental health statistics when available.
- ❖ Sources of data:
 - The sanitary or health authority in a country
 - Regulatory agencies
 - Environmental protection agencies.



Sub-Component 5.2: Environmental Health

Topic 5.2.1: Airborne diseases and conditions

- ❖ This topic includes all airborne diseases and conditions that are caused or worsened by exposure to unhealthy levels of pollutants (such as PM, SO₂ or O₃).
- ❖ Examples of airborne diseases and conditions include:
 - Upper and lower respiratory disease
 - Obstructive pulmonary disease
 - Asthma
 - Allergic rhinitis
- ❖ Statistics include health statistics on morbidity (such as incidence and prevalence) and mortality of these diseases or conditions, as well as measurement of the associated impact on the labour force and economic costs.





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.





Sub-Component 5.2: Environmental Health

Topic 5.2.3: Vector-borne diseases

- ❖ This topic includes vector-borne diseases that are transmitted by organisms (e.g., insects and arachnids) that carry viruses, bacteria, protozoa and other pathogens.
- ❖ Common vector-borne diseases include, but are not limited to, malaria, dengue fever, yellow fever and Lyme disease.
- ❖ Some vector-borne diseases are directly affected by climate change, specifically by the change in rain patterns and floods.
- ❖ 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.





Sub-Component 5.2: Environmental Health

Topic 5.2.4: Health problems associated with excessive UV radiation exposure

- ❖ This topic includes statistics on the incidence and prevalence of melanoma and other skin cancers, and the incidence and prevalence of cataracts associated with excessive and prolonged UV radiation exposure.
- ❖ It includes statistics on work days lost and economic costs in monetary terms.





Sub-Component 5.2: Environmental Health

Topic 5.2.5: Toxic substance- and nuclear radiation-related diseases and conditions

- ❖ This topic includes diseases and conditions associated with exposure to toxic substances, residuals and/or waste that result from localized emissions.
- ❖ Toxic substances include toxic pesticides (e.g., pesticides that have teratogenic, carcinogenic, tumorigenic and/or mutagenic effects), and toxic industrial chemicals (e.g., lead, arsenic, mercury and nickel, among others).
- ❖ Toxic substance-related diseases and health problems include, but are not limited to, chronic illnesses of the respiratory system (such as pneumonia, upper and lower respiratory diseases, asthma and chronic obstructive pulmonary diseases), cancer, infertility, and congenital anomalies or malformations.



Sub-Component 5.2: Environmental Health

Topic 5.2.5: Toxic substance- and nuclear radiation-related diseases and conditions (cont.)

- ❖ This topic also includes diseases and conditions associated with exposure to nuclear radiation.
- ❖ The related diseases and health conditions may be acute or chronic.
- ❖ They include, but are not limited to, thermal burns from infrared heat radiation, beta and gamma burns from beta and gamma radiation, radiation sickness or “atomic disease”, leukaemia, lung cancer, thyroid cancer and cancer of other organs, sterility and congenital anomalies or malformations, premature aging, cataracts, and increased vulnerability to disease and emotional disorders.
- ❖ Statistics include morbidity (incidence and prevalence) due to toxic substance-related or radiation-related diseases and conditions, as well as measurement of the associated impact on the labour force and on the economic costs.





Questions, comments for Component 5?





Thank you for your attention!

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