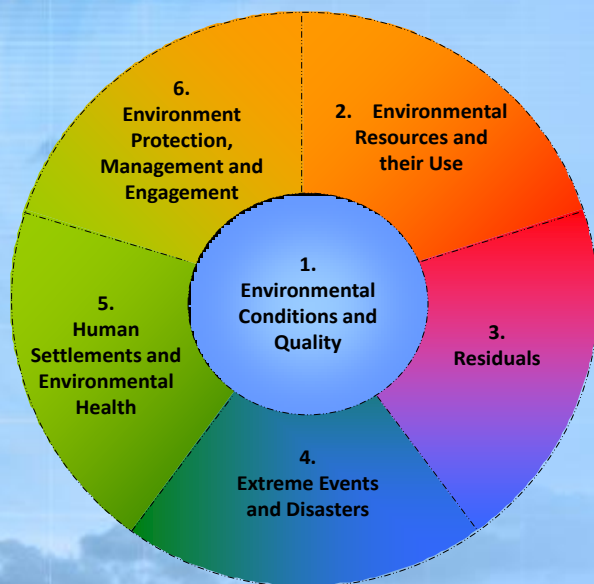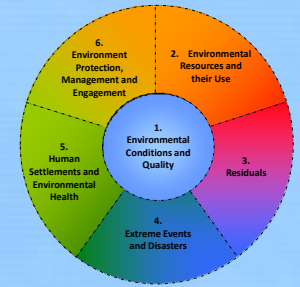# Components, sub-components and statistical topics of the FDES 2013

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)
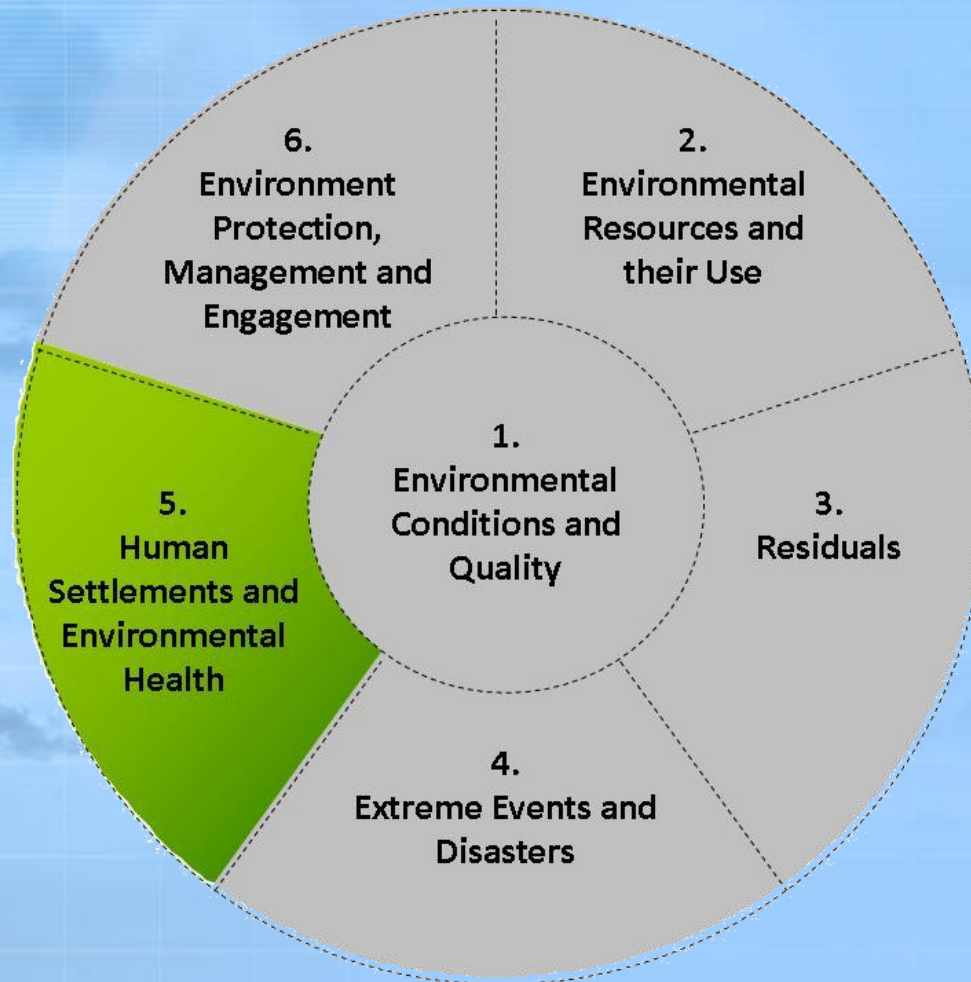**(Arusha, Tanzania, 6-10 July 2015)**

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 3 of the Framework for the Development of Environment Statistics (FDES) 2013.

Component 5: Human Settlements and Environmental Health

Contents of Component 5

❖ 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: Human Settlements and Environmental Health

❖ Refers to 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 dangerous environmental conditions.

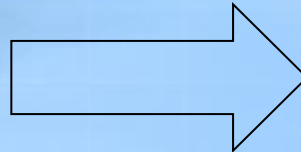❖ Includes statistics on basic services and infrastructure of human settlements.

Component 5: Overview

Component 5	Sub-Component 5.1	Topic 5.1.1: Urban and rural population
Human Settlements & Environ-mental Health	**Human Settlements** (five 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

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 being produced.

Topic 5.1.1: Urban and rural population

Includes:

❖ Rural, urban and total population, area of urban and rural settlements, urban and rural population density.

Relevance:

❖ 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.

❖ In combination with housing, water and sanitation statistics, they can provide telling determinants of the environmental sustainability of human settlements and environmental health.

❖ Relevant statistics are from demographic statistics, and geospatial information sources.

Sources:

❖ Censuses

❖ Household surveys

Topic 5.1.2: Access to selected basic services

Includes:

❖ 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; using an improved sanitation facility; supplied by the water supply industry; connected to a wastewater collecting system and wastewater treatment; served by municipal waste collection; and with access to electricity.

Topic 5.1.3: Housing conditions

Includes:

❖ Access of population 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 either safe or hazard prone areas.

❖ Housing sufficiency statistics such as number and proportion of individuals or families that do not have access to an adequate dwelling and the homeless population.

❖ Common statistics describing the quality and the location of houses in either safe or hazard prone areas include:

- Urban population living in slums, population living in informal settlements, as well as the number of dwellings with adequate building materials as defined by national or local standards; number of homeless.

Relevance:

❖ Housing access and conditions exert a direct effect on human wellbeing and health, and these data therefore serve as critical measures of those attributes.

❖ Housing condition statistics need to be described according to national conditions and priorities. Distribution of income directly influences the access to dwelling, the quality of the homes that different social groups can have, and their location.

Sources:

❖ Censuses

❖ Household surveys

❖ Urban planning and housing authorities

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.

Statistics for this topic include the number of people exposed to air pollution or noise in specific areas and the proportion of the exposed population to the total population of the city or region

Topic overlays data on pollutant emission and concentration onto geographic and demographic data to create a more detailed understanding of the size and location of populations currently being exposed to pollutants and those most at risk of future exposure.

Sources:

❖ For Demographic statistics ➔ NSOs carrying out Censuses and Surveys

❖ For Point pollution emissions and concentrations➔ environmental authorities

❖ Geographic or cartographic authorities.

Topic 5.1.5: Environmental concerns specific to urban settlements

Content:

❖ Organizes issues of specific relevance to the population living in urban areas such as urban sprawl; the availability of urban green areas, conditions of roads, vehicles and transport etc.

Sources:

❖ Administrative records, and remote sensing; common partners of the NSO include municipal authorities, urban planning and housing authorities responsible for zoning, as well as transport authorities and urban research centres.

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

Content:

- ❖ Common measures of health problems of 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.

- ❖ Estimations of premature death, the loss of work days and estimation of the economic cost in monetary terms (i.e., loss of wages or costs of treatment).

Scope:

- ❖ Environmental health can be defined as an interdisciplinary field that focuses on analysing the relation between public health and the environment.

- ❖ Primary epidemiological data can be selected and further processed for transformation into the environmental health statistics. The resulting statistics are usually produced using national and sub-national data. They include descriptive epidemiological data that can usually be updated on a yearly basis.

Sources:

- ❖ The sanitary or health authority in a country
- ❖ Regulatory agencies
- ❖ Environmental protection agencies.

Topic 5.2.1: Airborne diseases and conditions

Includes:

❖ All airborne diseases and conditions that are caused or worsened by exposure to unhealthy levels of pollutants (such as respirable PM, SO_2 or O_3).

❖ Health statistics on morbidity (such as incidence and prevalence) and mortality of these diseases or conditions, as well as measurement of the associated loss of work force and on the economic costs.

❖ Where available, the attributable portion and burden of diseases, premature deaths and DALYs (disability-adjusted life years) associated with pollution are to be included in this topic.

Examples of airborne diseases and conditions include:

❖ Upper and lower respiratory disease

❖ Obstructive pulmonary disease

❖ Asthma

❖ Allergic rhinitis

Topic 5.2.2: Water-related diseases and conditions

Relevance:

❖ Water-related diseases and conditions are still a considerable public health problem in developing countries.

❖ Prolonged exposure to organic or inorganic chemical contamination of water (e.g., from arsenic, cadmium, chromium, copper, etc.) can provoke different health problems

- Examples: increased risk of cancer, organ damage and malfunction, increased blood cholesterol and pressure, among others.

Topic 5.2.2: Water-related diseases and conditions

Includes:

❖ All water-related diseases and conditions that result from micro-organisms and chemicals in the water humans drink as defined by the WHO.

❖ Diseases caused by biological contamination such as gastroenteritis infections caused by bacteria, viruses and protozoa, and water borne parasite infections.

❖ Diseases and health problems associated with the (organic or inorganic) chemical contamination of water (e.g., from arsenic, cadmium, chromium, copper, etc.)

❖ Health statistics such as 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.

❖ The attributable portion and burden of diseases, premature deaths and DALYs associated with water related factors.

Topic 5.2.3: **Vector borne diseases**

Includes:

❖ Vector borne diseases that are transmitted by vectors (e.g., insects and arachnids) that carry viruses, bacteria, protozoa and other pathogens, as defined by the WHO.

❖ Health statistics such as 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.

❖ Attributable portion and burden of diseases, premature deaths and DALYs associated with vector-borne environmental factors.

Relevance:

❖ Some vector borne diseases are being directly affected by climate change, notably by the change in rain patterns and floods.

❖ Examples: common vector borne diseases include: malaria, dengue fever, yellow fever and Lyme disease.

Topic 5.2.4: Health problems associated with excessive UV radiation exposure

Content:

❖ Statistics on the incidence and prevalence of melanoma and other skin cancers, the incidence and prevalence of cataracts associated with excessive and prolonged UV radiation exposure.

❖ Statistics on work days lost and economic costs in monetary terms.

❖ The attributable portion and burden of diseases, premature deaths and DALYs associated with excessive UV radiation exposure.

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

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).

❖ <u>Toxic substance-related diseases and health problems</u> include: chronic illnesses of the respiratory system (such as pneumonia, upper respiratory diseases, asthma and chronic obstructive pulmonary diseases), cancer, infertility, and congenital anomalies or malformations.

Sources of epidemiological data:

❖ The sanitation or health authority

❖ Nuclear regulatory agencies

❖ Environmental protection agencies.

Questions, comments for Component 5?