Session 4: Environmental Health Indicators

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Workshop on Environment Statistics
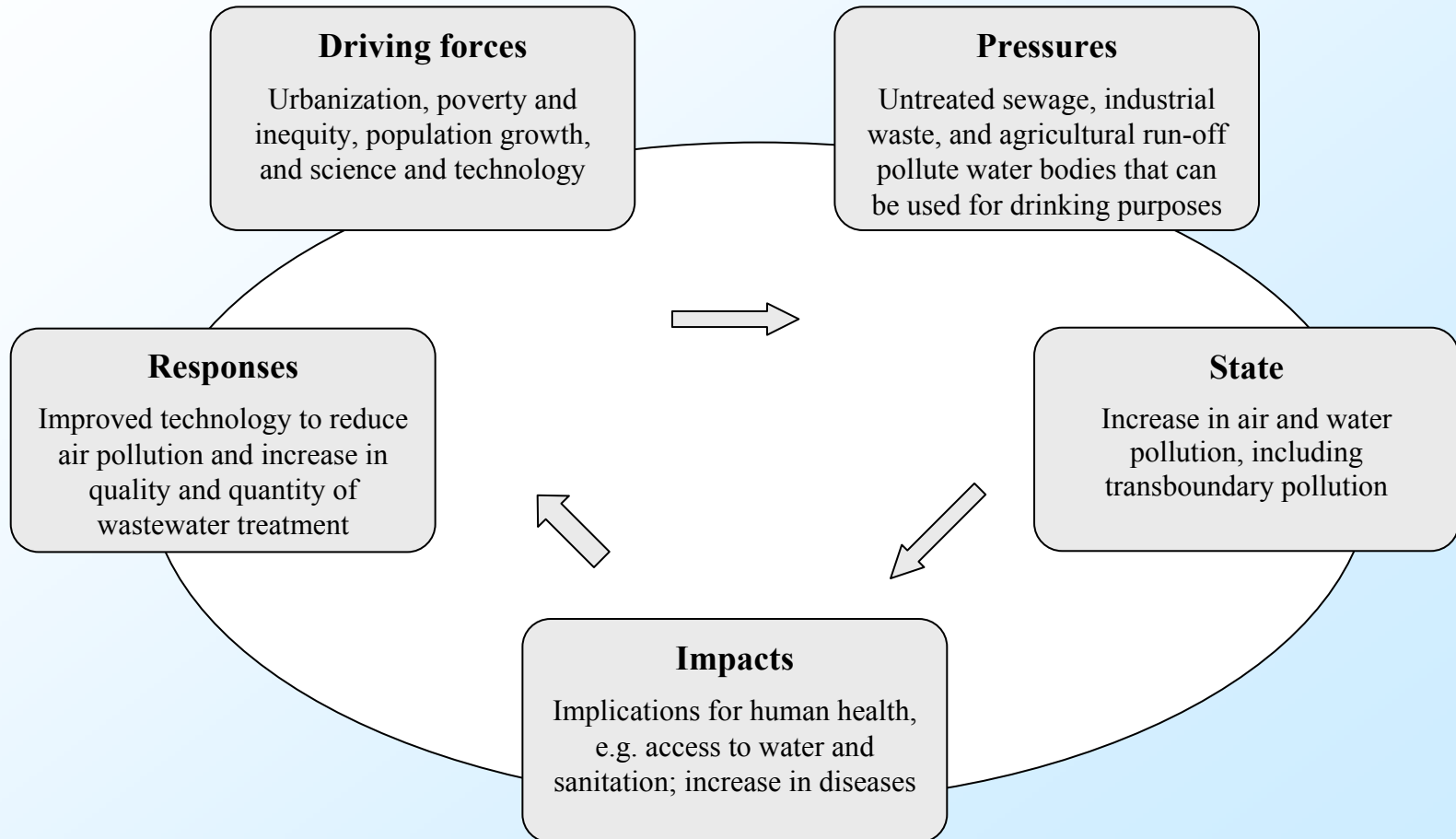(Abuja, 19-23 May 2008)

Environmental Health - definition

as characterized by WHO

"aspects of human health, including quality of life, that are determined by physical, chemical, biological, social and psychosocial factors in the environment"

focus of the presentation on the physical, chemical and biological

Driving force-Pressure-State-Impact-Response Framework for Env. Health

Driving forces

Urbanization, poverty and inequity, population growth, and science and technology

Pressures

Untreated sewage, industrial waste, and agricultural run-off pollute water bodies that can be used for drinking purposes

Responses

Improved technology to reduce air pollution and increase in quality and quantity of wastewater treatment

State

Increase in air and water pollution, including transboundary pollution

Impacts

Implications for human health, e.g. access to water and sanitation; increase in diseases

Impacts on Environmental Health

- **Access to water and sanitation**
- **Increase in diseases**
  - **Water-related diseases**
  - **Diseases related to air quality**
  - **Diseases relating to climate**
  - **Epidemic-prone diseases**

Access to Improved Water and Sanitation

- **Proportion of population using an improved drinking water source (MDG)**
- **Proportion of population using an improved sanitation facility (MDG)**

data source: Joint Monitoring Programme for Water Supply and Sanitation –WHO/UNICEF

Environmentally-related Diseases

- **Water-related diseases**
- **Diseases related to air quality**
- **Diseases relating to climate**
- **Epidemic-prone diseases**

Water-related Diseases

- **Waterborne – drinking contaminated water containing microbial pathogens/chemicals**
- **Water-washed – lack of sufficient quantities of water for washing/personal hygiene**

Examples: cholera, typhoid fever, dysentery, diarrhoeal diseases, polio

- **Water-related diseases can also be transmitted through vectors (such as insects) which carry disease-causing pathogens, passed on to humans**

Examples: malaria, dengue fever, yellow fever, schistosomiasis

Diseases related to Air Quality

- Inhalation of indoor and outdoor air pollution which can cause acute or chronic health effects

- Pollution sources include vehicles, industries, cooking fuels, environmental tobacco smoke

- Pollutants: NO_2, SO_2, CO, VOCs and SPM and diseases include asthma, bronchitis, acute respiratory infections

- Exposure to lead and asbestos which can cause neurological damage, cancer/lung disorders, etc.

Diseases related to Climate

- Climate and infectious diseases are related because disease agents and vectors are sensitive to meteorological factors, such as temperature, rainfall and humidity.

- Due to global temperature rises, disease-carrying insects may have ability to thrive at higher altitudes and in more northern regions. Mosquitoes transmit malaria, dengue fever and yellow fever; sandflies transmit leishmaniasis; tsetse flies transmit trypanosomiasis.

- Diphtheria (airborne bacterial infection) is also linked to climate; it is more likely to be seen in the form of skin infections throughout tropical countries, and as nasopharyngeal infection, a more severe form of the disease, in cooler climates.

Epidemic-prone Diseases

- Disease epidemics can result in sudden decreases of human populations

- Earlier disease epidemics were unavoidable but today they can usually be prevented or alleviated by promoting health education, ensuring early detection of disease cases, and maintaining national disease surveillance programs.

- Examples include: Avian influenza, yellow fever, meningitis, and anthrax

African List of Environmental Indicators: Health & Environment

Priority Areas	Agreed Set of ECA Regional Indicators
Infant and child mortality	Under five mortality rate (MDG) Maternal mortality rate per 100,000 live births (MDG) Mortality rate (Eurostat)
Burden of ill health	% of population with access to primary health care facilities (CSD) Public expenditure in health (as % of GNP) (CSD – earlier set) Proportion of population using an improved sanitation facility (MDG)
Informal settlements	Proportion of urban population living in slums (MDG) Informal settlements, area and percentage of population (N/A)