

# The UN Framework for the Development of Environment Statistics and the Canadian Approach: a Comparison

**UNSD**

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# Outline

- What do we mean by “framework”?
- The UN Framework for the Development of Environment Statistics
- A Framework for the Development of Environment Statistics – the Canadian Approach
- Comparison of the two frameworks
- Conclusions

# ***What do we mean by “framework”?***

## **UN FDES:**

- A framework is a tool to assist in the development, coordination and organization of environment statistics.
- This is achieved through the identification of the statistical topics that constitute the contents of the framework.
- The framework identifies the fields of concern with an illustration of classifications, selected statistics and indicators for application
- Statistical concepts, definitions and classifications or tabulations are not part of the framework but described in separate guidelines.

## **Canada:**

- The FDES is a basic organizing structure to guide environment statistics

# The UN FDES

The FDES was designed for the following applications:

- Review environmental problems and concerns and determine their quantifiable aspects;
- Identify variables for statistical descriptions of the quantifiable aspects of environmental concerns;
- Assess data requirements, sources and availability;
- Structure databases, information systems, statistical publications and methodological guidelines.

# The UN FDES

Main properties of the UN FDES:

- Flexibility
- Consistency
- Comprehensiveness

# The UN FDES

The FDES evolved from:

- the Stress-Response model adapted for environment statistics by Statistics Canada (Tony Friend and David Rapport) during the late seventies and early eighties;
- the careful review and analysis of approaches used in countries

# The UN FDES

- The UN FDES is a broad framework that relates the components of the environment to information categories
- The components of the environment define the scope of environment statistics while the information categories reflect the fact that environmental problems are the result of human activities and natural events.

# The UN FDES

The basic components of the environment are:

- (i) flora;
  - (ii) fauna;
  - (iii) atmosphere;
  - (iv) water (freshwater and marine water);
  - (v) land and soil (surface and subsurface); and
  - (vi) human settlements.
- Please note that the basic components are those of the *ecosystems*.

# The UN FDES

- The information categories represent:
  - (i) the social and economic activities, and natural events that exert impacts on the environment;
  - (ii) the environmental impacts of these activities or events;
  - (iii) the socio-economic responses to environmental impacts; and
  - (iv) inventories, stocks and background conditions.
- Please note that the information categories reflect (a) *stocks and flows*, (b) *drivers, pressures, impacts, state and responses*.

# The UN FDES

- The contents of the framework are the statistical topics.
- These are determined as the statistically quantifiable aspects of general environmental concerns (*link to environmental policy*).
- The statistical topics are listed in the framework tables.
- The list is not necessarily exhaustive:
  - the framework's generality and flexibility allows for additional topics as well as for additional details (aggregation or disaggregation) within the topics.

# The UN FDES

- The two technical reports, *Statistics of the Natural Environment* and *Human Settlement Statistics*, further elaborate FDES by presenting the statistical topics in the framework format and identifying the statistical variables required for the development of environment statistics. They propose concepts, definitions and classifications for these variables.
- The variables were selected on the basis of policy relevance and user needs; their relevance to environmental issues and to corresponding FDES topics. The aspects of data availability and international comparability were also taken into account.

# The Canadian Approach

- Objective: to propose a **conceptual** framework for environment statistics.
- Identifies the maintenance (measuring and monitoring) of environmental quality as the single high level policy objective that guides the framework.
- The purpose of the proposed framework is to provide high quality statistics for ecosystem-based management with its focus on ecosystem quality and on the human role in influencing it.

# The Canadian Approach

- Specifies ecosystems as the *key target variables* for a framework focused on the maintenance of environmental quality. Ecosystems are the interactions of the principal spheres that constitute the earth's environment.

# The Canadian Approach

- The key target variables have to be further broken down into relevant *stock* and *flow sub-component variables* that describe the interactions within and between the ecosystems and the human sphere.
- The relevant stock and flow sub-components will ultimately be the targets of measurement and the principal outputs of the statistical system.

# The Canadian Approach

- Broad categories that illustrate the component variables associated with each of the key target variables are presented. The elaboration of the stock and flow variables of the three key target variables proposed for the environmental statistics framework requires consultations with stakeholders.

# The Canadian Approach

- The framework allows cross-links to other frameworks. It also allows grouping of the sub-component variables into broad categories based on other commonly used analytical models such as the PSR, DPSIR etc, or the divers-impacts-mitigation-adaptation model used in climate change.

# Comparison of the two frameworks

- Both frameworks aim at the level of basic environment statistics.
- The main properties of both frameworks are flexibility, consistency and comprehensiveness which makes them “umbrella frameworks” for environment statistics.
- By identifying a single high level policy objective (the maintenance of environmental quality), the Canadian proposal links the framework directly to environmental policy. This link is missing in the FDES.

# Comparison of the two frameworks

- The Canadian proposal identifies ecosystems as the key target variables of the framework. Ecosystems are the interactions (combinations) of the components of the environment (flora, fauna, atmosphere, water, land and soil etc), which are the key target variables of the FDES.
- The sub-component variables (stocks and flows) of the Canadian approach introduce the “information categories” of the FDES into the framework.

# Comparison of the two frameworks

- The broad categories that illustrate the component variables associated with each of the key target variables in the Canadian proposal correspond to the “statistical topics” in the FDES.
- Both frameworks are to be applied for identifying individual component variables (and the related concepts, definitions, classifications, sources and methods) but these are not part of the framework but are to be elaborated in a process with stakeholders.

# Conclusions

- The main properties of the UN FDES, namely its flexibility, consistency and comprehensiveness makes it still a valid framework. However, the FDES was prepared in 1984 and has to be revised to take the dramatic changes of the past 25 years into account.
- The similarities between the FDES and the Canadian approach make it reasonable to join forces, widen the scope of the Canadian initiative and turn it into an intergovernmental work on the revision of the FDES as the umbrella framework for the development of environment statistics.

# Questions

- Do you agree with the conclusions?
- Should the revision include the conceptual framework, AND the concepts, definitions and classifications related to the target and component variables as well as the process for the development of environment statistics?
- Should the FDES recommend a “minimum/core set” of environment statistics to the countries for compilation?

Thank you.