Environment Statistics Production Process

Workshop on Environment Statistics for South East Asia Countries
Hanoi, Viet Nam, 5-7 December 2011

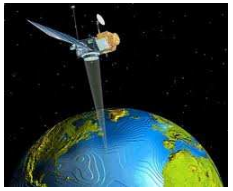
United Nations Statistics Division

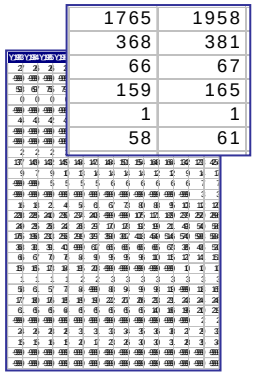
Contents have been updated according to current developments in the revision process (August 2012)

Statistical processes: from raw data to statistics

- Statistical processing is needed to transform data and microdata into statistics and indicators, as well as other type of integrated results.
- These operations follow regular statistical standards and procedures that are implemented into the environment statistics domain, in a similar manner as in demographic, social and economic statistics.
- Environment specific sources require different processes of collecting and compiling data and metadata
- Description of the statistics and indicators in metadata is important to enable comparability trough time and register possible differences with international definitions and standards
- The use of relevant and specific classifications (under development) is necessary in the domain of environment statistics.

Statistic production

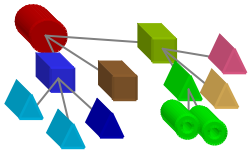




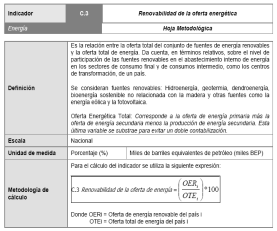
1765	1958
368	381
66	67
159	165
1	1
58	61

Data and microdata

Validation

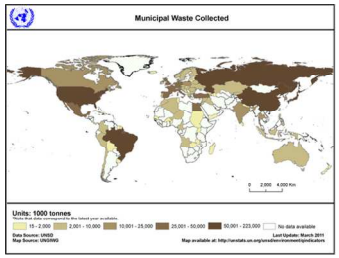


Structure



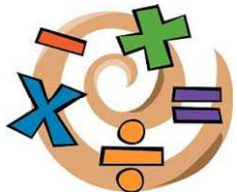
Indicador	C.3	Renovabilidad de la oferta energética
Energía		Hoja Metodológica
Definición		Es la relación entre la oferta total del conjunto de fuentes de energía renovables y la oferta total de energía. Da cuenta, en términos relativos, sobre el nivel de participación de las fuentes renovables en el abastecimiento interno de energía en los sectores de consumo final y de consumos intermedio, como los centros de transformación, de un país. Se consideran fuentes renovables: Hidroenergía, geotermia, dendroenergía, bioenergía sostenible no relacionada con la madera y otras fuentes como la energía eólica y la fotovoltaica. *Oferta Energética Total: Corresponde a la oferta de energía primaria más la oferta de energía secundaria menos la producción de energía secundaria. Esta última variable se sustrae para evitar un doble contabilización.*
Escala		Nacional
Unidad de medida	Porcentaje (%)	Miles de barriles equivalentes de petróleo (miles BEP)
Metodología de cálculo		Para el cálculo del indicador se utiliza la siguiente expresión: $C.3\ Renovabilidad\ de\ la\ oferta\ de\ energía = \left(\frac{OER_i}{OTE_i}\right)*100$ Donde OER = Oferta de energía renovable del país i OTEi = Oferta total de energía del país i

Metadata (description)

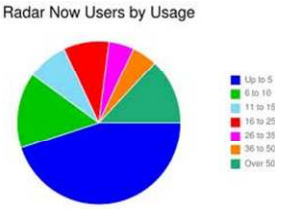


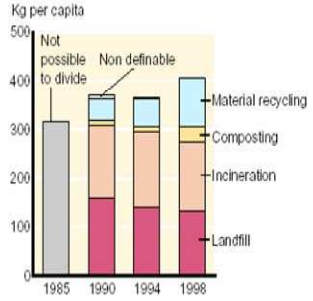
Statistics

(Compendia, databases)



Statistics selection & processing





Indicators

Forest - example

Monitoring: observation of forest extent

Processing

Dissemination

Primary Sources

Satelite image Remote Sensing

Line Ministry (Agriculture, Env)

NSO + line ministry

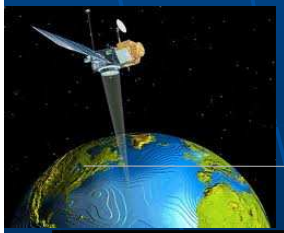
Transforms raw data into statistics

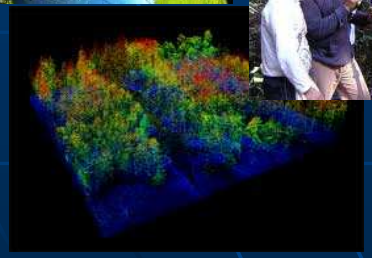
Forest Inventory

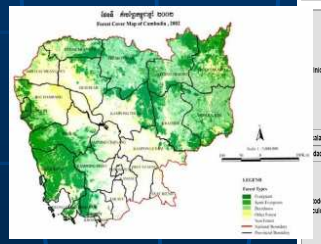
Metadata

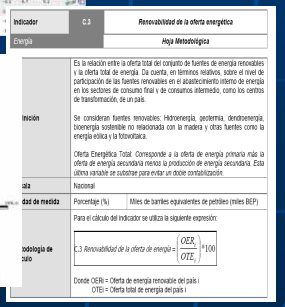
Statistic:
forest extent (hectares)

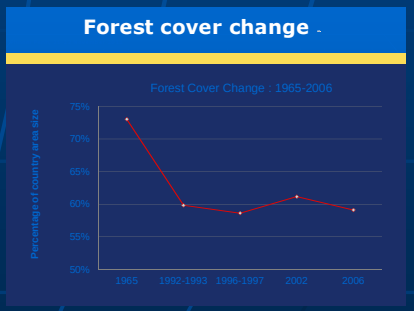
Indicator:
forest cover (%)







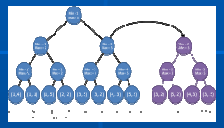




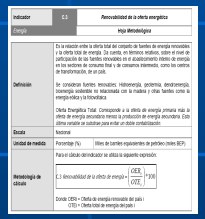
Processing

After collection, further processing of these data and microdata sets are required:

a) Validation, interacting with sources and experts

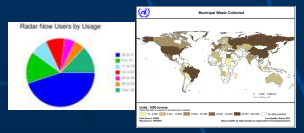


b) Structuring, to make sure that the sets of statistics are presented in an organized way using defined criteria



c) Thorough description of each statistic series, using metadata formats such as methodological sheets

d) Tabulation and construction of the disseminating tables and possible maps



e) Dissemination

Key concepts

- Data: Observations, measurements originated through a data collection process.

- Statistics: Statistics are sets of data that has been properly validated, structured and described according to statistical standards and procedures.

LINK Transaction Volumes (millions)

Month	2007	2008	2009	2010	2011
Jan	208.00	214.00	224.90	224.00	232.90
Feb	204.50	224.00	216.40	224.20	229.90
Mar	236.10	234.00	245.20	253.90	259.79
Apr	226.30	232.00	241.06	252.20	259.70
May	237.90	251.50	255.19	262.00	262.20
Jun	233.80	235.90			
Jul	231.60	244.70			
Aug	236.00	244.21			
Sep	229.00	237.22			
Oct	239.00	250.40			
Nov	234.00	236.70			
Dec	230.00	237.20			
Total	2,746.20	2,841.83			

Statistical Information Obtained From Sample	
Mean (sec)	2.3427
Standard Deviation (sec)	0.1180
Variance (sec²)	0.0139
Assuming a Normal Distribution with 99% Confidence Interval:	
Time Between Batches (sec)	2.34 ± 0.0542
Data Shall Fall Within:	
$2.286 \leq \bar{x} \leq 2.394$ seconds	

- Indicator: It is a selected, refined and meaningful statistic (or combination of statistics), that is communicated within a context for the final users.

Data compilation/collection

The process of transforming selected data sets into statistics requires a careful integration of the following steps:

a) Careful definition of the types of magnitudes to be captured according to the information needs (type of magnitude, scale, coverage, time and space configuration, etc.).

b) The resulting key environment statistics need to be statistically feasible to be actually produced as statistical series within a country's statistical system

c) Assessment of data sources and the quality of potential and current data sets is key

a) Collection of data according to standard statistical procedures , (i.e. Using Questionnaires or Compiling data from primary sources)

Developing indicators

To produce indicators, the procedure to be followed according to the information needs the following standard procedures:

a) Carefully determining which indicators best serve the information demands (policy, priorities)
b) Selecting the required statistics that are needed to calculate those indicators
c) Processing or combining the statistics to produce the indicators
d) Properly describing each indicator, producing metatada
e) Constructing the dissemination formats using graphs and possible maps
f) Dissemination

Starting from statistics, a careful selection process takes place to produce indicators, sometimes requiring the use and combination with additional statistics such as demographic, economic and social.

Environmental indicators can be produced either from statistics databases or compendia, and also using the information contained in available tables of the SEEA in the countries.