

# Pilot Set of Indicators for Monitoring of Integration of Global Environmental Concerns into the Regional Development and Spatial Planning

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## Structure

- Role of the indicators
- Basic principles
- Criteria for the indicators
- Pilot list
- Problems and perspectives
- Conclusions and recommendations



## Role of the indicators

- A pilot list of indicators needed for the training programme
- The list may serve as a basis for further development of a **working system of indicators** for practical use



## The role of the indicators in the context of the Rio Conventions project

- Description: Identification and selection of a set of indicators for monitoring and evaluation of the progress of Bulgaria at a sub-national level in regard to the Rio Conventions:
  - Biodiversity
  - Desertification
  - Climate change
- Evaluation of the indicators systems used by the EU, UN (UNEP, UNDP, UNSD) and other international projects
- Responsible partners: CEU with the support of SU



## The role of the indicators in the context of the training course

- The trainees will acquire knowledge about:
  - Main sources of numerical information
  - Practical abilities for use of numerical information
  - Methods and techniques for transformation of primary data into scientifically valid indicators
  - Generation of data and information through the use of GIS
  - Above all:  
**Provision of support for decision-making based on numerical information with maximum objectivity**



## Main principles

- Indicators are used for simplification, evaluation and ordering based on complex primary data
- They need to present the information for the decision-makers and the general public in a understandable way
- Indicators provide ability for monitoring of tendencies over time and space
- Development of good indicators is a complex task, requiring collection and systemizing of large quantities of data
- During the development of indicators large quantities of data are aggregated into small and simple characteristics representing the real, complex world.



## Main principles

- Indicators are supposed to be used during the whole process of policy implementation including regional policy for:
  - Identification of problems
  - Definition of solutions
  - Progress monitoring

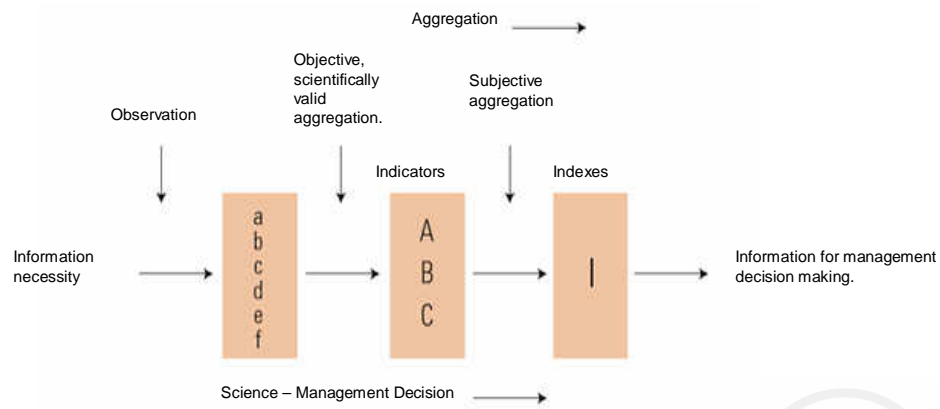


## Main principles

- Indicators must comply with a whole set of criteria which limit the indicators implementation and options for their development
- The same indicators are often expected to satisfy conflicting interests, therefore, the creation of an indicator system is a maximizing task, limited by the time, recourse and funding at hand.



# Transformation of data into indicators.



Source: Lorenz, 1999



# Definition approaches

- Bottom - Up
- Top - Down



## Definition steps

1. Determination of information necessity
2. Development of a concept model
3. Formulation of potential (pilot) indicators
4. Evaluation of the selected indicators based on definite criteria



## Criteria for the indicators

- Thoroughness
- Comprehensiveness
- Accessibility
- Stability
  - In time
  - In space
- Plainness
- Representatives
- Transparency in the development



## Pilot List of Indicators

- The Pilot List of Indicators includes a maximum number of available indicators about the three Rio Conventions:
  - 17 standard statistical indicators monitored by NSI in 2007
  - More than 70 indicators from established and recognized international sources

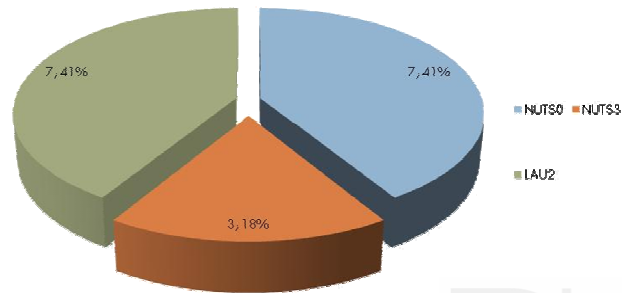


## Sources of Primary Data

- NSI
- Eurostat
- UNEP
- UN CSD
- Executive Environmental Agency
- European Environmental Agency
- UNDP / GEF
- Organization for Cooperation and Security in Europe
- Expert information
- Other sources



## Standard Statistical Indicators in the National Plan for Statistical Research for 2007



## Examples

- GIS based indicators



## GIS-based Indicators

- The Dynamics in the Structure of the Land Cover based on Corine 2000 for the period 1990 – 2000 (*data from EEA and ExEA*)
  - ▣ Structure of land cover in 1990
  - ▣ Structure of land cover in 2000
  - ▣ Share of territories that underwent a change
  - ▣ Direction of the change

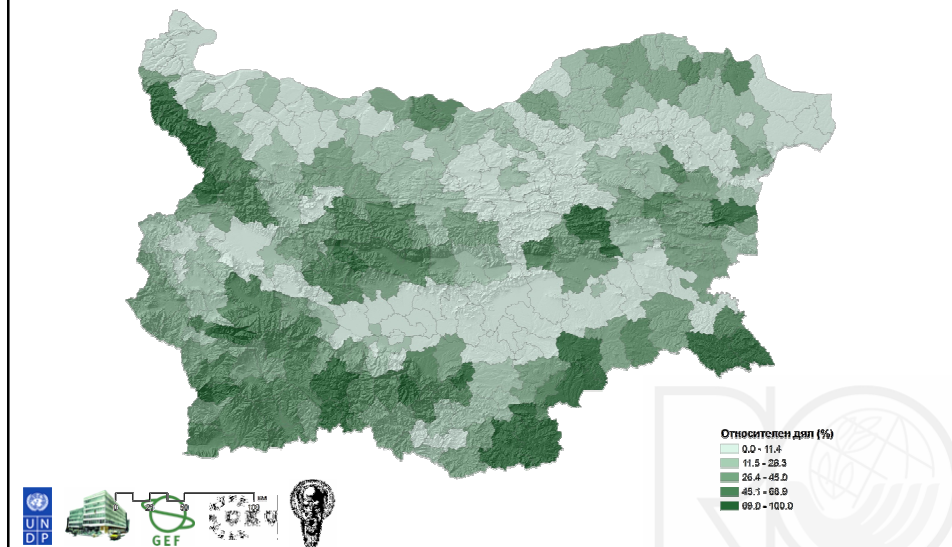


## GIS-based Indicators

- Relative share of the given administrative and territorial unit falling within N2000 boundaries:
  - ▣ Protected areas under the Birds Directive
  - ▣ Protected areas under the Habitat Directive



# GIS-based Indicators



# GIS-based Indicators

- GIS based expert evaluation of the harmful emissions in the atmosphere based on:
  - Emission data (NSI)
  - “Wind Rose” (NHMI)
  - Other meteorological and climate data
  - Numerical model of the relief (MoEW, Ministry of Agriculture and Food, other sources)
  - Evaluation Algorithms (EEA, scientific institutions, MoEW, ExEA)



## Problems and Perspectives

- Existence of primary data at the lower planning levels (municipalities and residential areas)
- Territorial division (water catchment area, administrative units?!) )
- Openshaw's MAUP – Cadastre Agency, MAF, State Forestry Agency dispose with different data about the territory of administrative and territorial units
- Confidentiality – Statistics Law
- Quality of primary data
- Dynamics



## Recommendations

The development of a working system of indicators is a complicated task which requires a number of activities, including:

- Involvement of practitioners with statistical background in the process of indicators definition
- Involvement of other “players” – municipalities, private companies and NGOs
- Institutionalization of indicators for monitoring and evaluation purposes in the so-called “regions for deliberate impact”



## Recommendations

- Seeking feedback from the “users” of the indicators
- Broad participation of the scientific and research sectors in finalization of the Indicators List (e.g. Statistics Faculty at UNWE, Sofia University, Association of Bulgarian Statisticians, etc.)
- Taking into consideration the indicators in decision-making process at all levels



## Recommendations

- As a preliminary step we propose:
  - The organization of a **round table on the indicators development** with the participation of key “users” and “generators” of quantitative information in Bulgaria



Thank you for your attention! 😊

