

The 2010 biodiversity target: measuring and monitoring progress

Rik Leemans, Morning lecture, 02-09-2007

“What simple is wrong, what complicated is useless”

Summary, Franz ESSL

Rik Leemans' personal background: 50 years; Grew up in a rural background; 45 later this place is a city & commercial area → illustrates the widespread changes that happened in the European landscape

Master thesis: diatoms in the floating leaves of the waterlily → scale of millimetres

PhD in Sweden: forest ecology → scale of meters to tens of meters

IIASA (1988-91): east European & west European scientists worked closely together → working on global change

RIVM (1991-2003): head of climate impact group, developed models for land use, energy use, greenhouse gas etc → development of IMAGE-model, which was much used in different programs and assessment; participating in scientific assessments for policy reports

Rik's lesson learned: build bridge to policy makers early, and ask what they want!

Ecosystems: dynamic complex of different species and nonliving components; strong interaction within the components, weaker interactions with outside world; they change over time, including changes on evolutionary timescale; biodiversity is essential for energy and water etc. fluxes; integrity of ecosystems is threatened when processes are degraded.

Biodiversity protection – why?

- intrinsic values (right to exist!)
- Cultural heritage
- Insurance – ecosystem integrity
- Ecosystem functioning
- Economic value

One main problem for assessing trends in biodiversity: data on species abundance and trends are extremely noisy, thus to guess real trends is difficult;

Biodiversity Indicators: summarize data on complex issues to indicate status, trends, performances → signal key issues; they are information tools; they serve as reference points and can be used to assess target fulfillment (2010 goals)

Criteria for good indicators:

- shall be relevant
- shall cover important aspects of the system indicated
- shall be policy relevant:
 - o widely accepted & easily understood
 - o scientifically credible and not too data hungry
 - o not too expensive

Indicators can be presented and communicated in different ways (numbers, graphs...)

Hierarchical indicators framework: indicators work on different levels and can be integrated, if levels and interactions are properly understood; BUT: partial indicators or badly assembled indicators can depict wrong pictures

History and importance of 2010 goal:

Millennium development goals: adopted by head of states in 2002 at the world summit in Johannesburg; sustainable development is one of the goals agreed on.

→ 2010 goal: significantly reduce the loss of biodiversity by 2010:

- strongly related to implementation of Convention on Biodiversity
- measuring the goal is hard (but indicators are developed, eg. by EEA – SEBI 2010-project)
- politically influential statement; however: goal is unlikely to be achieved

Convention on Biodiversity (CBD)

- most important international agreement for nature conservation
- focus: sustainable use AND conserving biodiversity, fair sharing of benefits from ecosystem services
- however implementation is partly hindered by non-binding character, lack of funding and by the fact, that some important countries (eg USA) have not ratified the CBD

CONCLUSION:

- indicators are essential for assessment & monitoring
- changes in biodiversity affect ecosystem functioning
- for deriving indicators: conceptualize and define your concept clearly
- integrated management approaches (eg ecosystem approach by CBD) are being developed, but are not successful so far

Important websites: www.greenfacts.org, www.millenniumassessment.org, www.IPCC.ch