Ecosystem Based Management

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Summary

The following subjects will be lectured:

1. Ecosystem Based Management (EBM): the concept of EBM against economic management of the environment and its resources

2. Ecosystem goods and services:

   Description of goods and services within the following sections: biodiversity, coastal and marine ecosystems, wetlands and freshwater ecosystems, land (desertification, land degradation and deforestation) will be described. Monetary valuation methods will be presented to value ecosystem goods and services.

3. The basics of industrial ecology: major concepts and their implementation.

4. Material Flow Analysis (MFA) as a tool within the EBM: examples for sensitive metals and contaminants.

5. Air quality management systems:

   The AIRQUIS system will be described to exemplify the possibilities for air quality system development and application on local, regional and global scale. Advantages and disadvantages of the system will be discussed and further steps of AIRQUIS development presented.

6. Global, regional and local change in aquatic ecosystems:

   Major drivers of the aquatic ecosystem change will be defined and their environmental consequences described. Management system for limiting these consequences will be presented. Information on the EU Water Framework Directive will be provided.

7. Coastal zone management:

   Description of the Drivers-Pressures-State-Impact-Response (DPSIR) framework will be given with application to the coastal zone management (CZM) on global, regional and local scale. The examples of the CZM worldwide will be given through the introduction of the approach developed within the IGBP Land-Ocean Interactions in the Coastal Zone (LOICZ) program.

8. Waste disposal management:

Various management options and technologies for solid wastes and wastewater will be described with focus on environmental and economic aspects. Special attention will be given to the use of wastes for the production of electricity, heat, as well as liquid fuels (renewable energy sources). Relevant policies will be discussed.

9. Economic and technology aspects of environmental management systems:

Description of the concept of best available technology (BAT) for the reduction of air and water pollution and waste will be given with examples for various international strategies for the improvement of environmental quality. Major aspects of economic and environmental scenario development will be presented.

10. Social aspects of environmental change:

The focus will be on describing various models of energy demands, population rate change, and employment index. Relations between the environmental management and employment change will be discussed.

11. Implementation of international agreements on pollution reduction:

Global and regional agreements on the reduction of environmental pollution will be presented and the efficiency of their implementation discussed. Major factors hampering this implementation will be defined. Marine environment conventions will be presented.