

Applying GIS and remote sensing to measure disaster risk: Example of Ecosystem Accounts

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Indicators

Accounts

Basic Statistics
(Data)

What is national accounting?

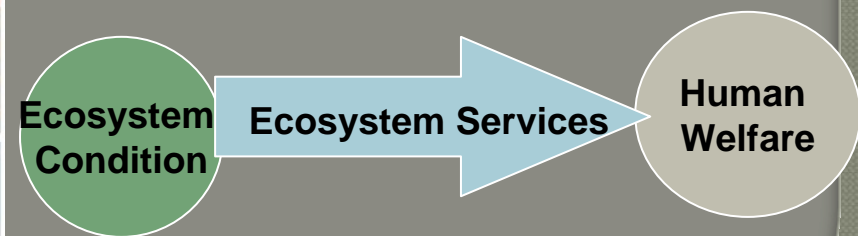
- Systematic approach to compilation of basic data for the production of reliable and coherent indicators
- Integration of data from multiple sources
- Verifying information and filling gaps by balancing tables
- System of National Accounts (SNA) is the UN standard for producing economic statistics such as GDP, GNI, value added, etc.
- System of Environmental-Economic Accounts (SEEA) is the UN standard for integrating economic and environment statistics to produce indicators such as: resource efficiency and decoupling indicators, resource depletion, and production, income and employment in environmental goods and services.

Ecosystem services

- Welfare benefits derived from ecosystem functioning
- In Japan: Satoyama and Satoumi are the concepts for mosaic ecosystem types providing bundles of services



"Satoumi", Source: Japan Satoyama-Satoumi Assessment, 2010 (UNU)



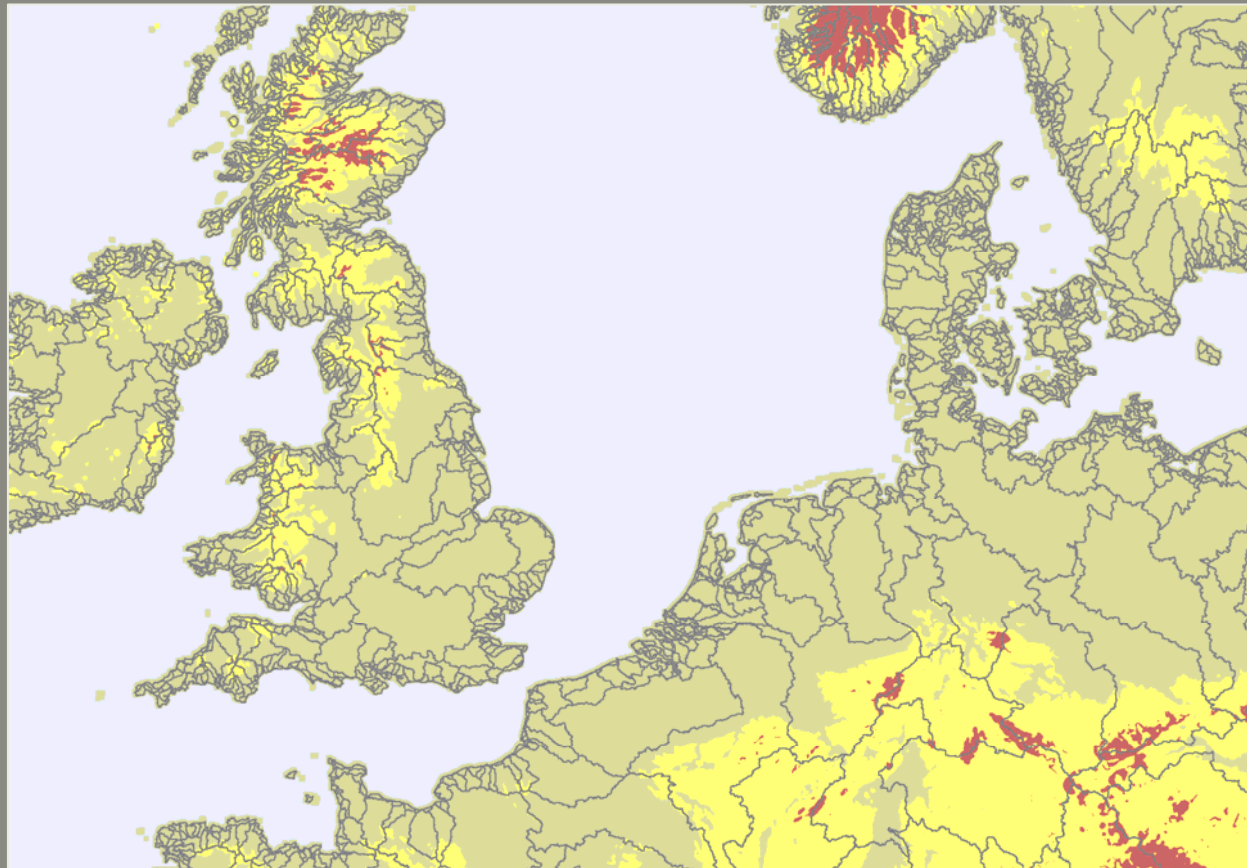
Examples of ecosystem services

- Provisioning of water, uncultivated resources (fish, timber, etc.)
- Bioremediation, pollination
- Recreation, research
- Natural protections from disasters (air, water, and mass flow regulation)

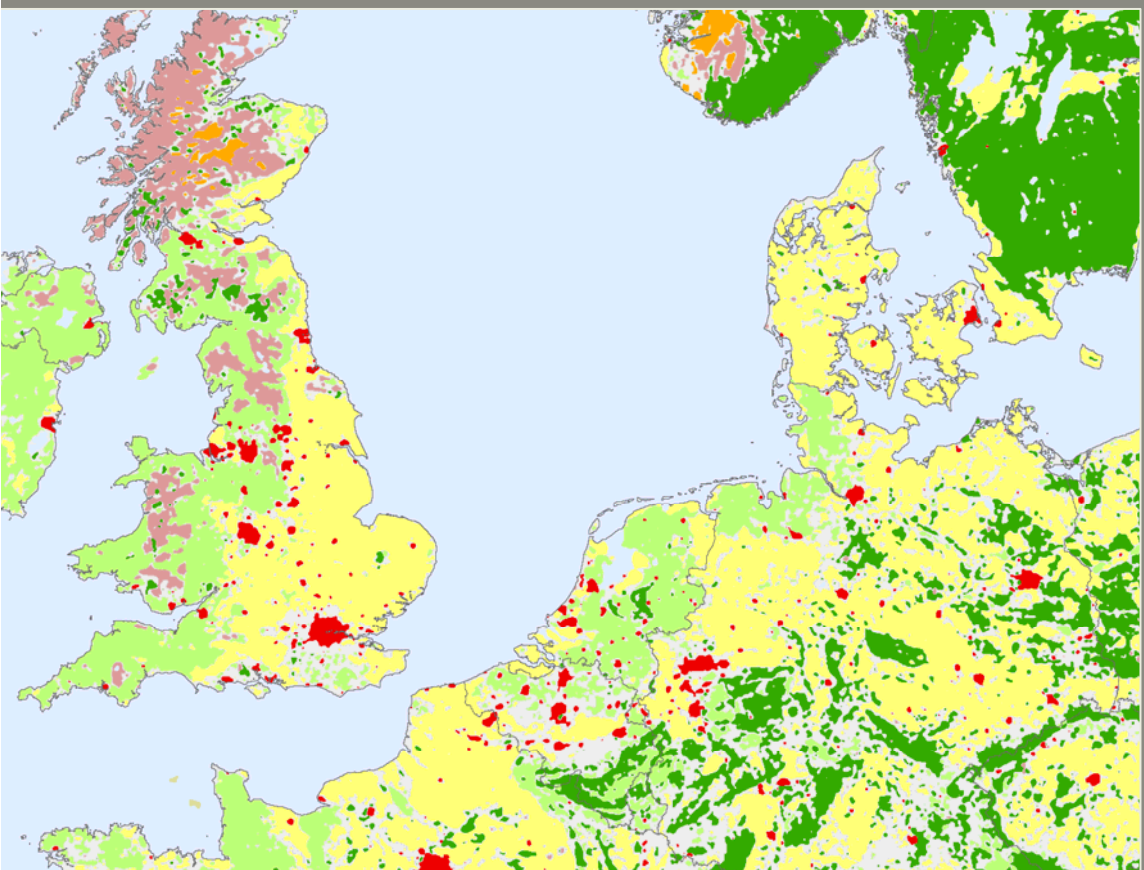
Ecosystem Condition/Capacity

- There are certain measures of processes or characteristics of ecosystems that can be good indicators of capacity for a bundle of ecosystem services, for example:
 - **The carbon cycle**: net changes in the amount of carbon sequestered and the amount of biomass left in the system for the other life forms and for the system's own regeneration
 - **Biodiversity**: across species, across specializations, and across habitats, which can sometimes be approximated from information on certain species or other characteristics of the systems
 - **The hydrological cycle and water quality**: the availability of freshwater, the timing and duration of that availability, and the presence of pollutants or eutrophication in water bodies
 - **The distribution of land cover**: changes in land cover happen gradually but drastically alter the bundle of ecosystem services.

Map of river basins



Dominant land cover



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https://www.yunbaogao.cn/report/index/report?reportId=5_7138

