Soil fertility, clean water and climate change: the role of soil organic matter and the World Atlas of Desertification

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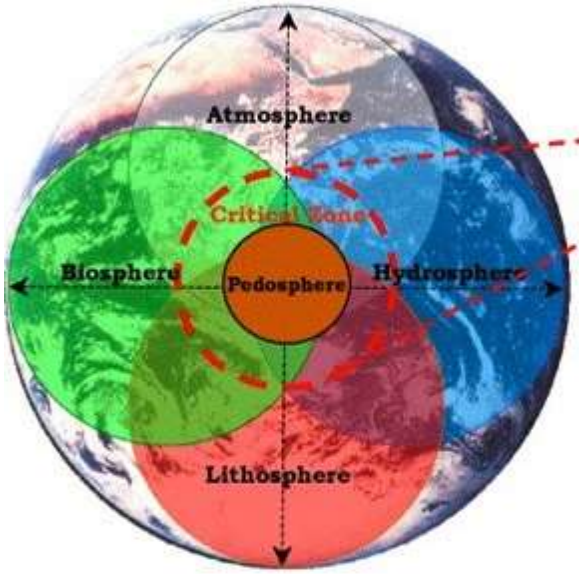
European Commission

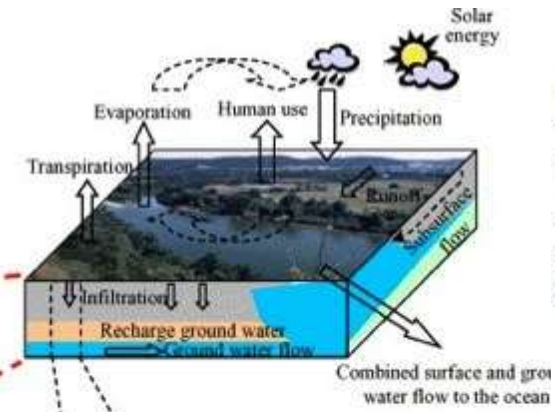
Soil, the skin of the earth

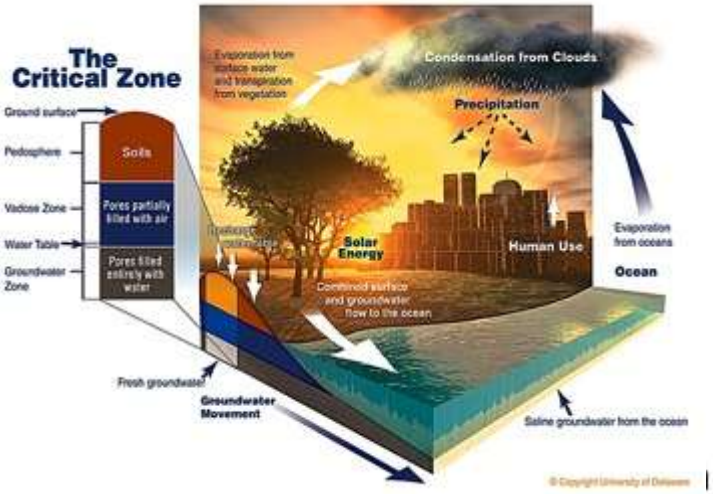
Soils at the interface between Atmosphere, Hydrosphere, Lithosphere and Biosphere

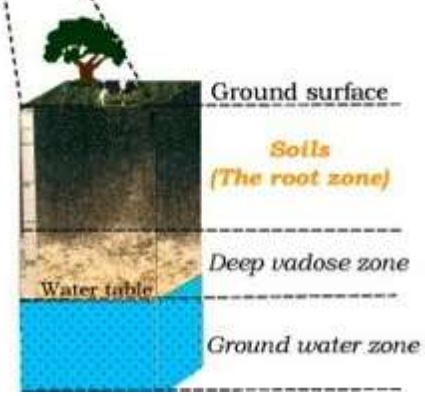
European Commission

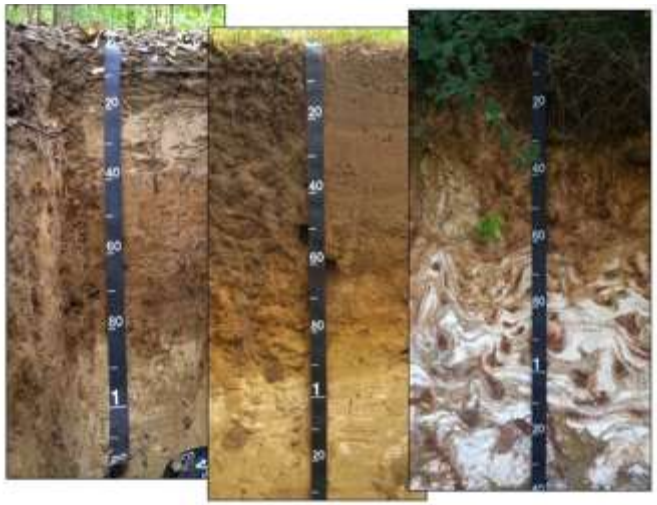
Soil defined as the top layer of the earth's crust situated between the bedrock and the surface.











source: L.P. Wilding & H. Lin, 2006

source: E. Micheli

SOILTREC

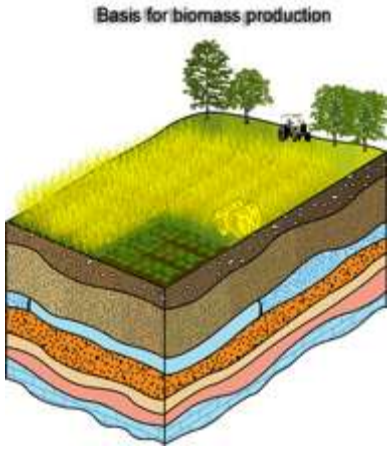
PLANET UNDER PRESSURE 2012 MARCH 26-29 LONDON

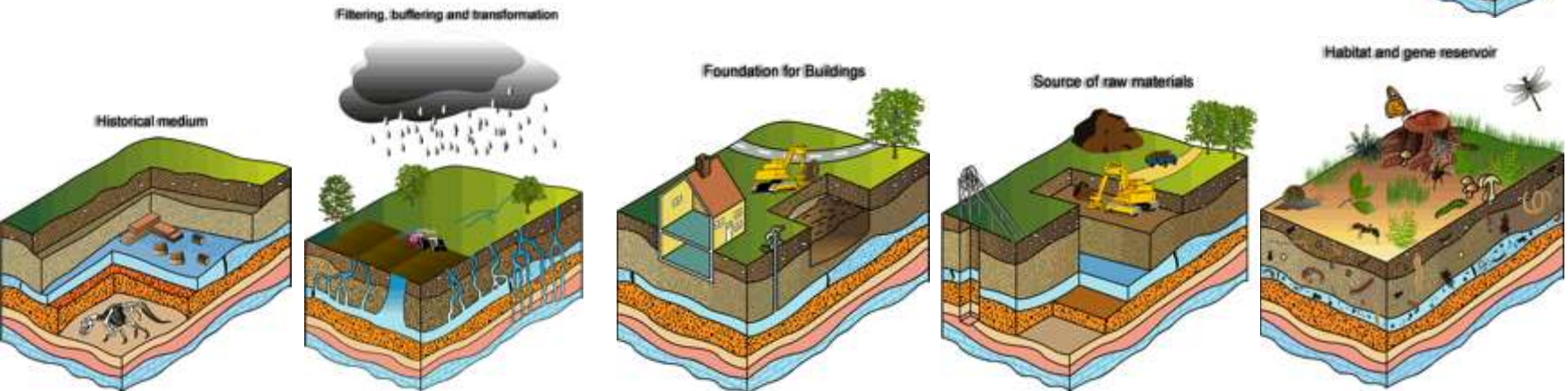
Proposed EU Soil Framework Directive: Article 1: Subject-matter and scope

Soil *defined as the top layer of the earth´s crust situated between the bedrock and the surface, excluding groundwater.*

Soil functions *to be protected:*

Biomass production, including in agriculture and forestry;
Storing, filtering and transforming nutrients, substances and water;
Biodiversity pool, such as habitats, species and genes;
Physical and cultural environment for humans and human activities;
Source of raw materials;
Acting as carbon pool;
Archive of geological and archeological heritage.





Cost of soil erosion in Europe

Water erosion: 115 Million ha

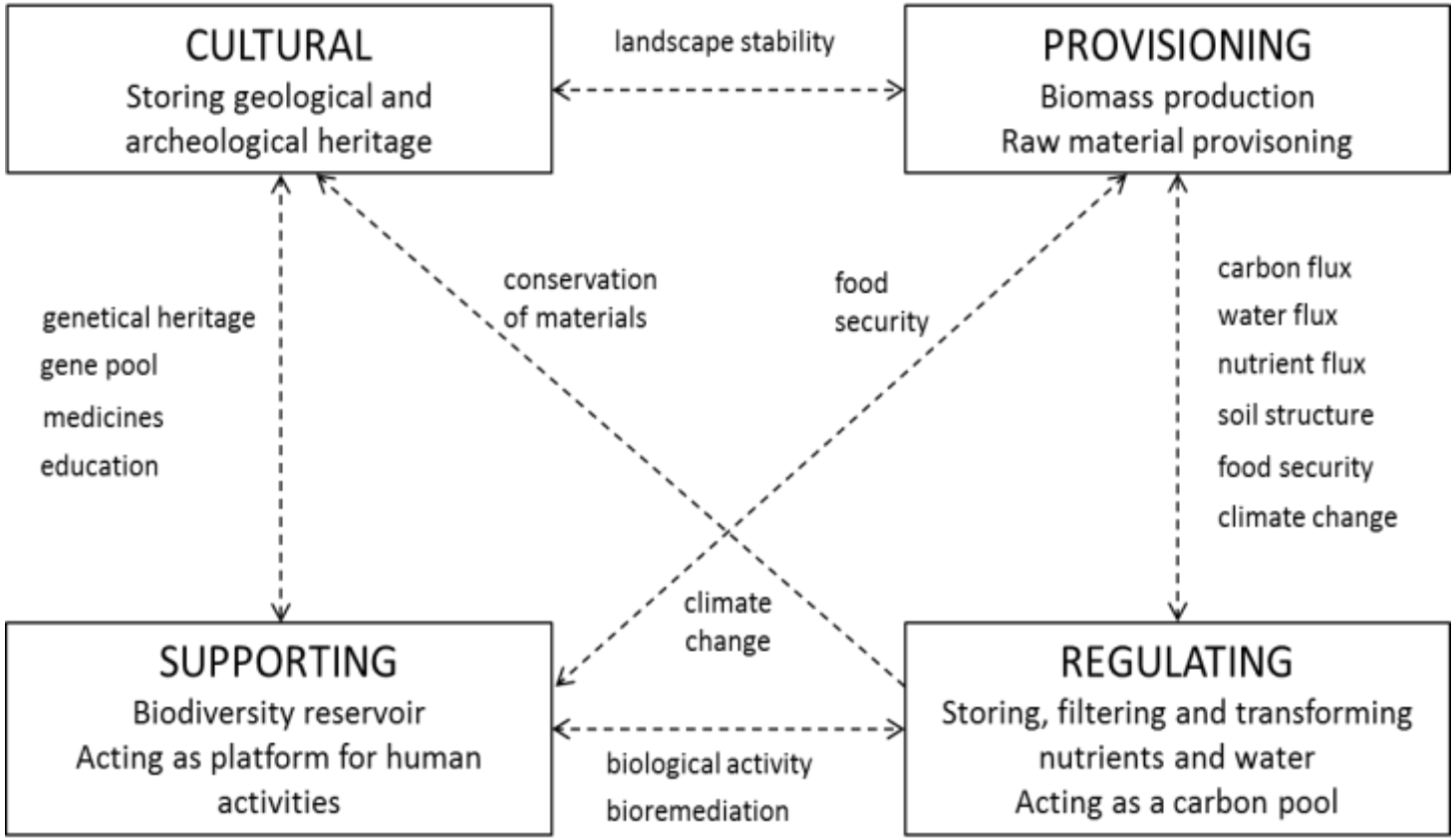
Wind erosion: 42 Million ha

***Table 1*: Estimated total annual cost of soil erosion (million € 2003)**

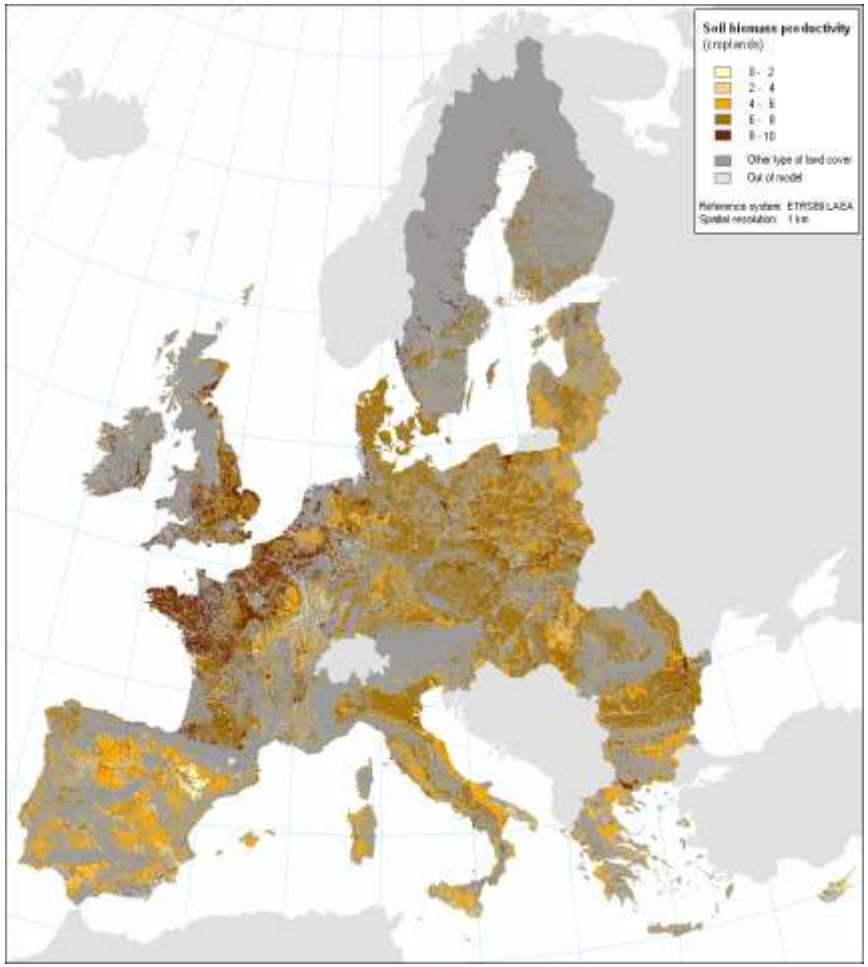
	On-site costs	Off-site costs	Total estimate
Lower bound	40	680	**720**
Intermediate	588	6,676	**7,264**
Upper bound	860	13,139	**13,999**

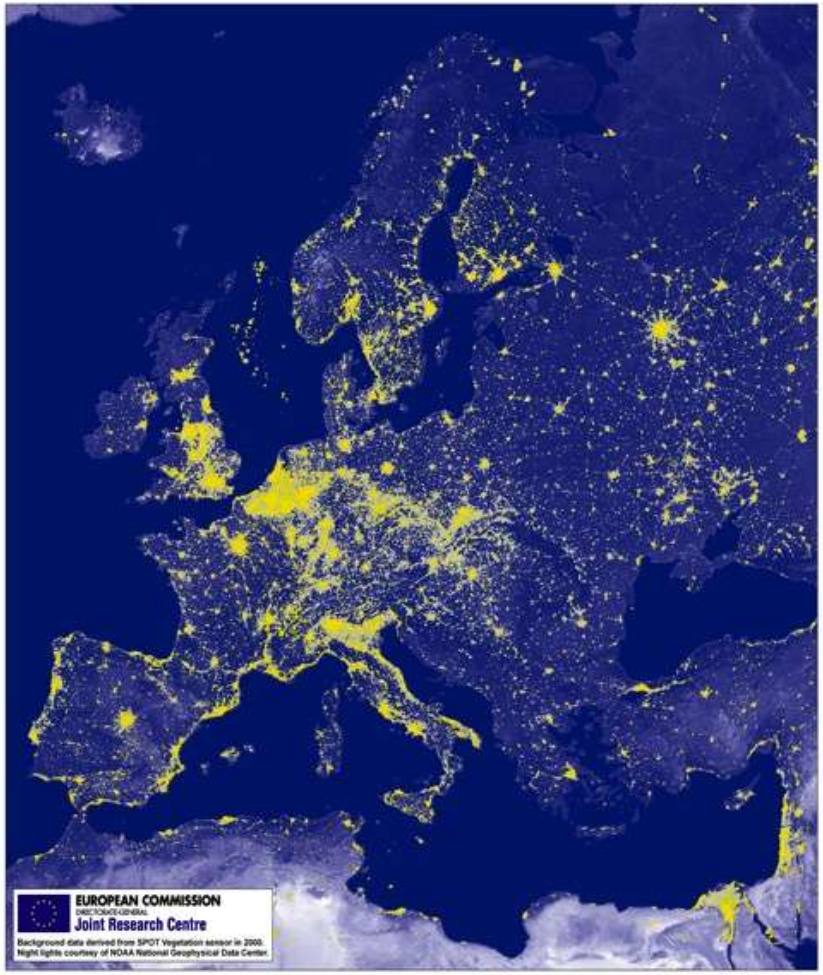
Note: These estimates are taken from the Ecologic study and relate to the surface affected by erosion in 13 countries and to five land use categories covering a surface area of 150 million ha

Soil ecosystem services

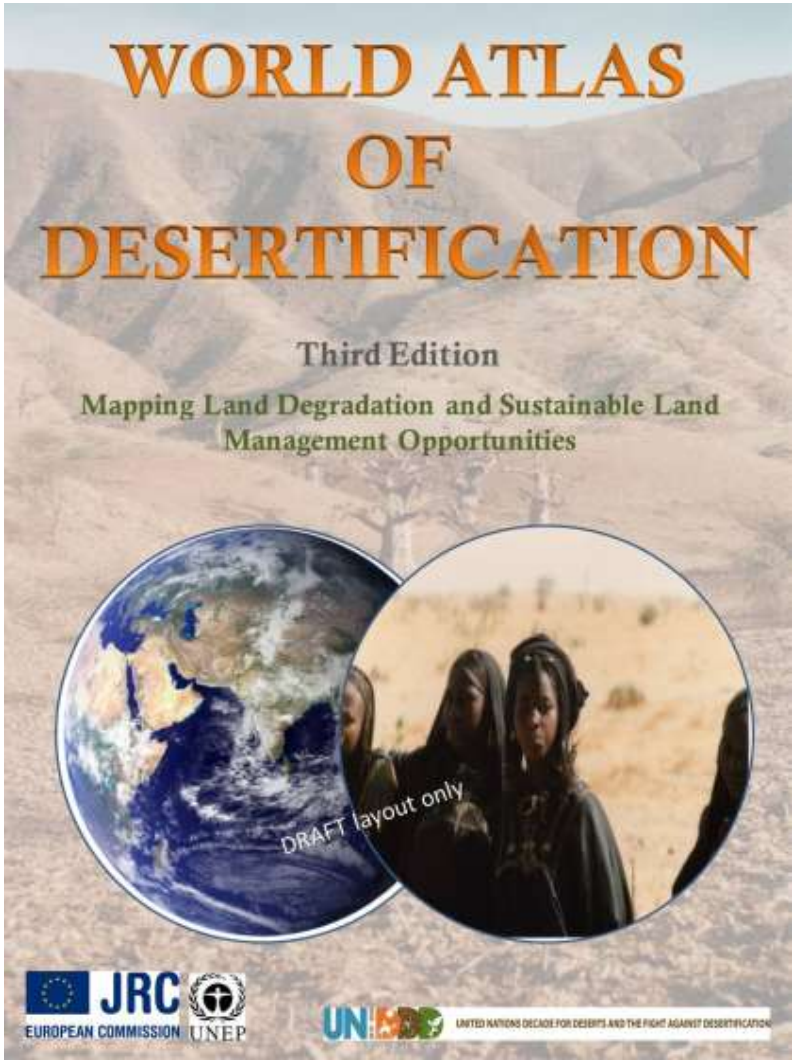


Conflicting Soil Functions
e.g. Biomass productivity vs. Soil Sealing





WAD



- foundation to address the global challenges related to desertification and land degradation
- global reference and contribution to the target of zero net land degradation
- crucial aspect in the discussion on food security, poverty-reduction, resource efficiency, land-market issues

Coordinated by JRC
In collaboration with UNEP, FAO and an extensive global network of experts

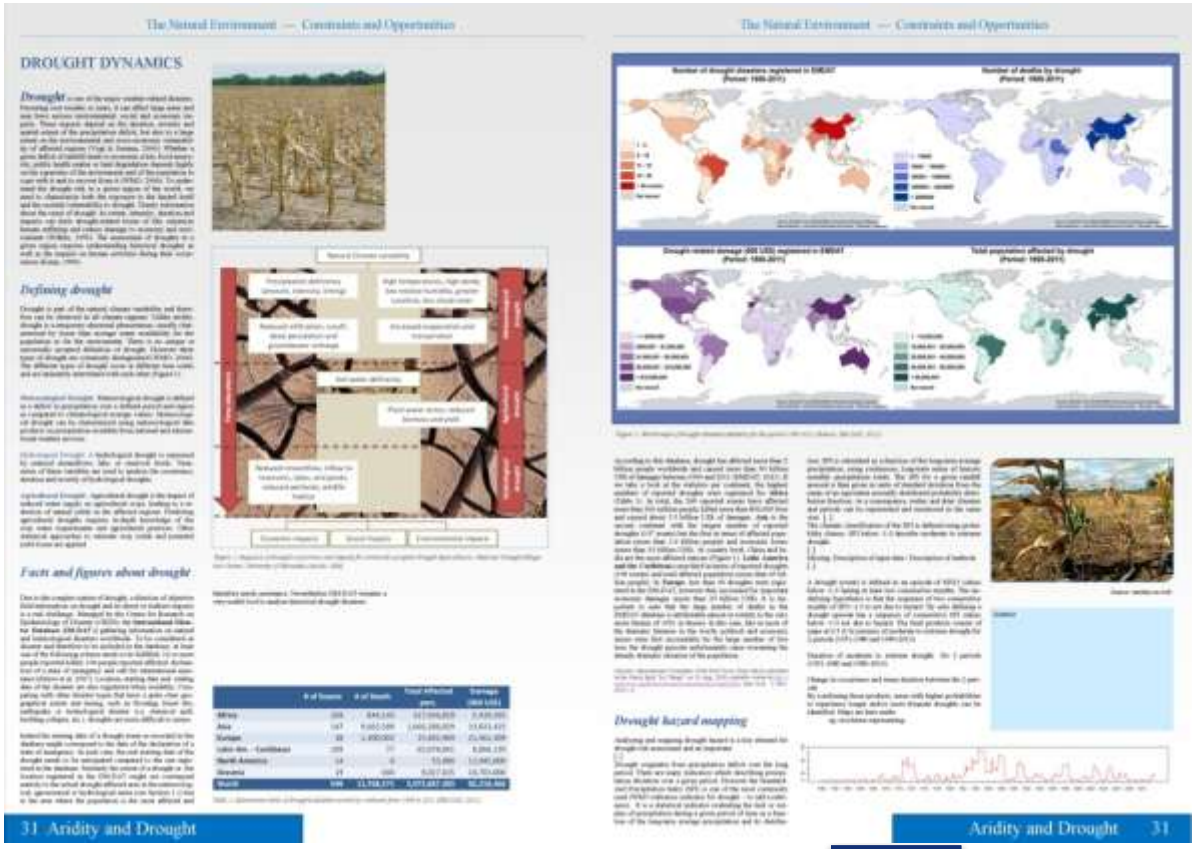
WAD

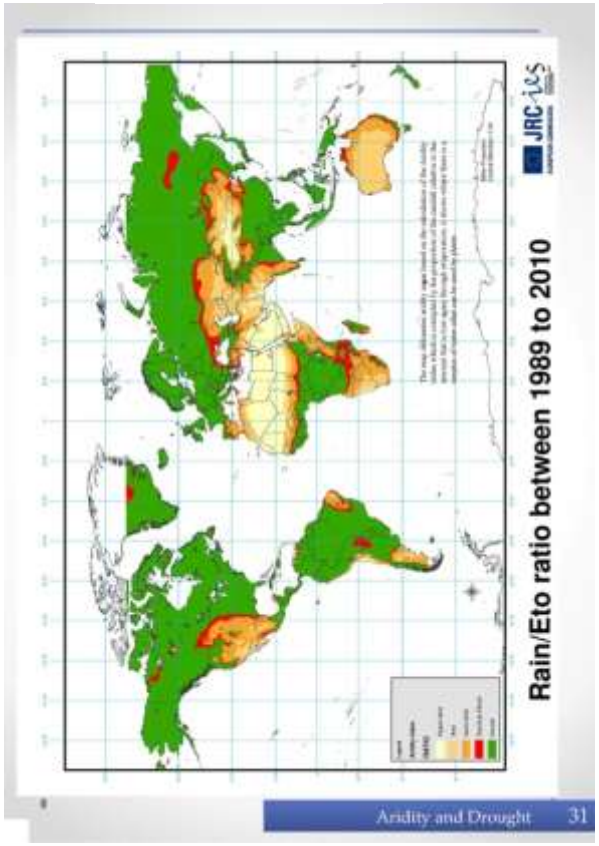
WAD illustrates adapted assessment and mapping concept
how this can be applied at various scales

WAD contains considerations on SLM options, economic aspects

WAD builds on science advancements and brings it into policies

Participation in ELD and OSLO





WAD

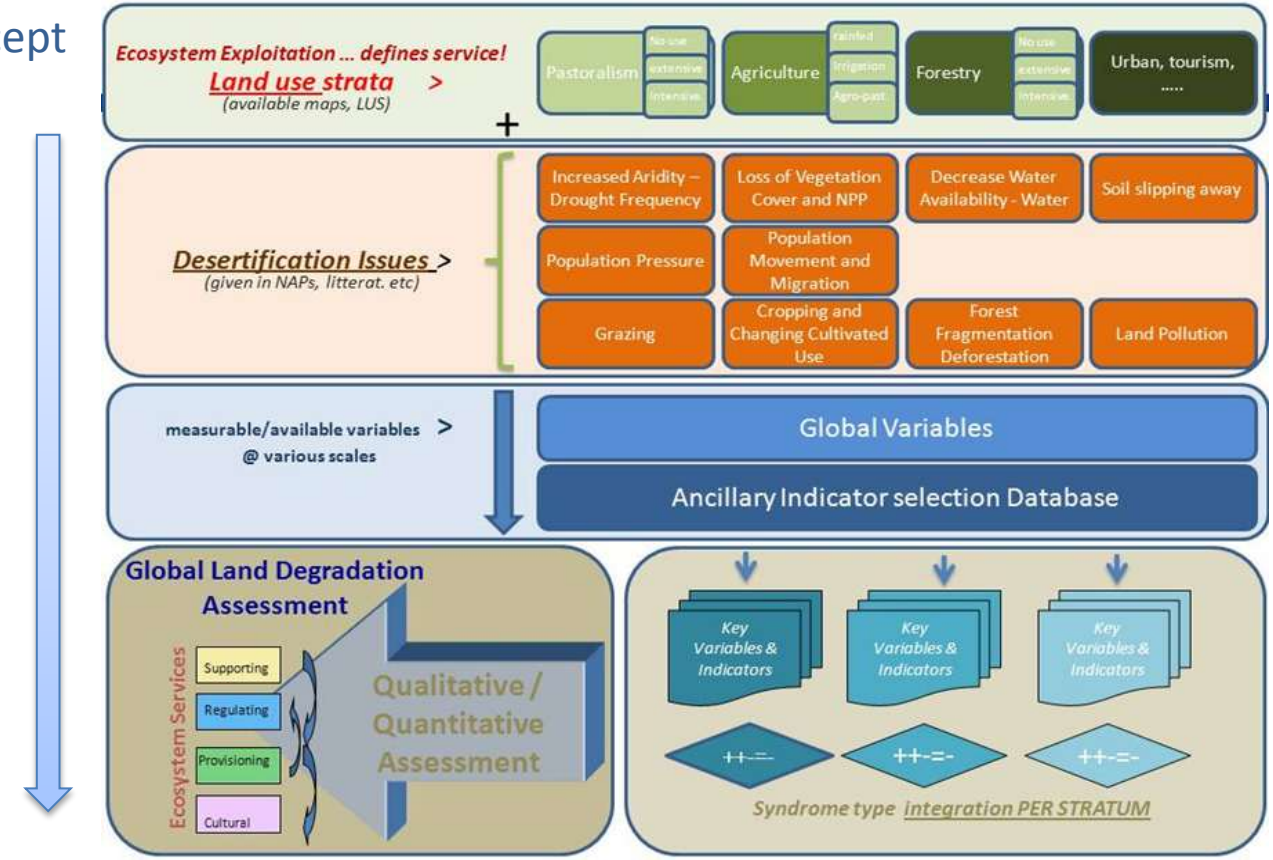
WAD structure based on concept

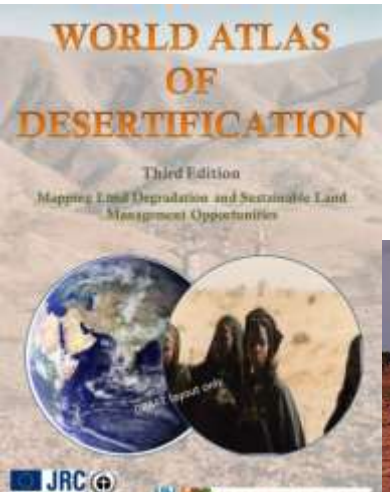
Wad ISSUE chapters:

Basic facts
Messages

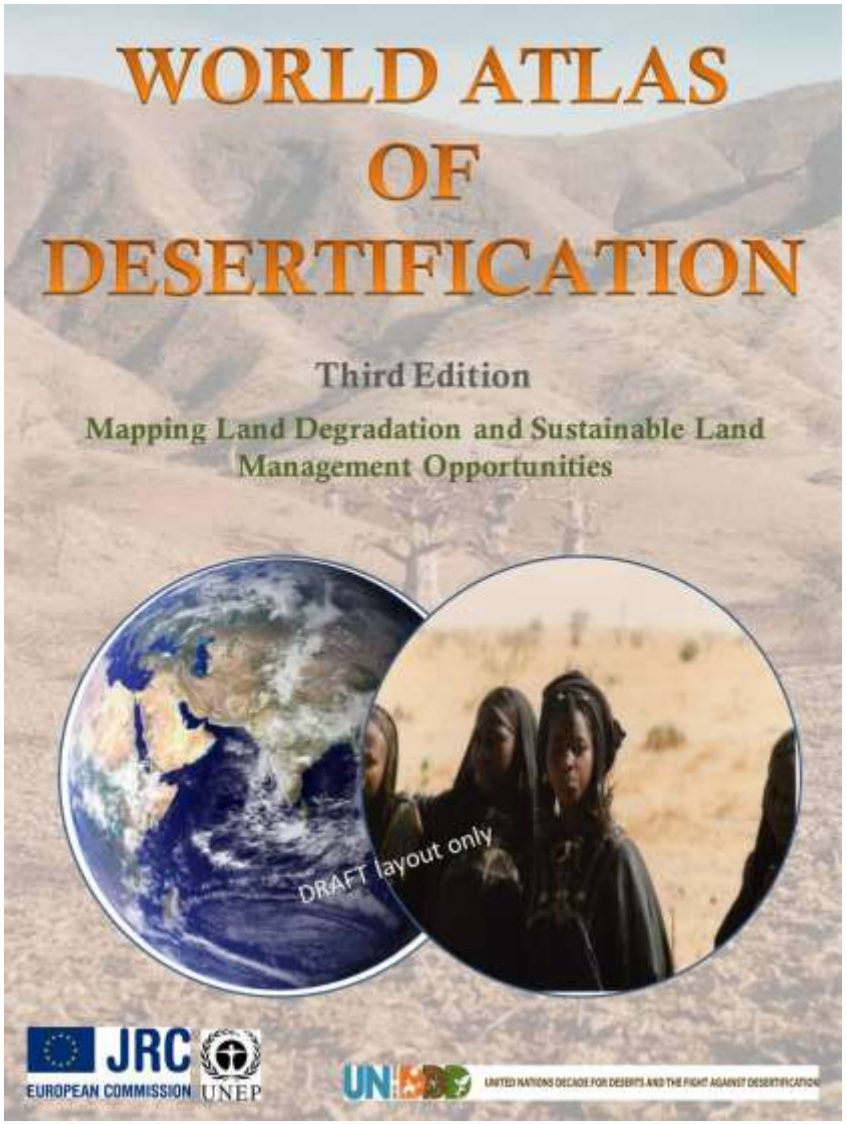
"story line" written with
Maps and examples

how it can be integrated
for multi-scale
assessments





Planned for first half 2013
Paper and Digital portal (http://wad.jrc.ec.europa.eu/)



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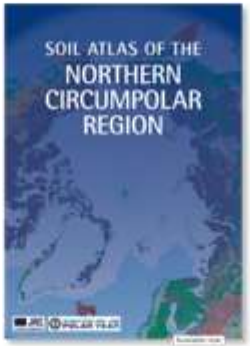
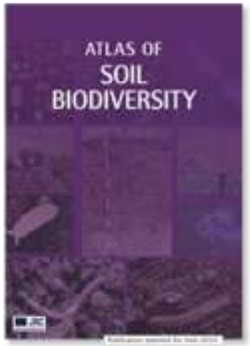
JRC Soil Atlas Series

The European Commission Joint Research Centre is collaborating with soil scientists and researchers from all over the world to develop a series of soil-related atlases. To obtain a copy or for further information, please consult the Publications Office of the European Union (http://publications.europa.eu/) or the JRC SOIL Action's web site (http://eusoils.jrc.ec.europa.eu).





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