



Recommendations of the meeting of the European Platform for Biodiversity Research Strategy

held under the Hungarian Presidency of the EU
Budapest, Hungary, 27-29th of April, 2011

concerning

ECOSYSTEM SERVICES

The new strategy of the Commission of the European Communities to halt biodiversity loss and the degradation of ecosystem services in the EU by 2020 and the new strategic plan of the Convention of Biological Diversity and its Aichi targets for 2011-2020 reemphasize the importance of biodiversity for ecosystem services which ensure human well-being. In order to safeguard and restore these services, the participants of this meeting place high priority on research to:

Generic recommendations applicable to all ecosystems:

1. Discover, develop and promote innovative services provided by ecosystems and to use them sustainably.
2. Take into account the potential for changes in values under future scenarios, including a fossil-fuel constrained world, in further developing and testing appropriate non-monetary and monetary methods to value ecosystem services in various spatial, temporal and cultural contexts.
3. Understand the ecological, economic and social aspects of the multiplicity of ecosystem services, identify trade-offs and synergies occurring between services, and develop management mechanisms and innovative uses to address intra- and inter-generational conflicts.
4. Identify and characterize linear and non-linear social and ecological dynamics (including tipping points) and their interactions, to foster ecosystem service resilience. This research should focus on interactions between all appropriate socio-economic and Earth system compartments.
5. Improve existing and develop innovative management techniques to reduce or eliminate drivers of dangerous change in ecosystem services or disservices such as biological invasions, chemical pollution including pharmaceuticals, and eutrophication.
6. Take into account uncertainty, complexity, and all relevant knowledge including local and traditional knowledge, in developing tools and methods to support the integration of ecosystem services into management and decision making in public and private sectors.
7. Assess the impacts on ecosystem services of novel or emerging pressures, such as alternative energy production, abrupt changes in management regimes in an oil-constrained world, and pollution by light and noise, nano-particles and micro-plastics.

8. Better understand the disruption of ecosystem services, at various scales in time and space, caused by natural and anthropogenic drivers operating through phenomena such as mismatch in processes related to phenology, trophic interactions, and migration.
9. Develop standardized methods and criteria for the measurements, mapping and monitoring of biodiversity and ecosystem services at various temporal and spatial scales to better assess the sustainability of ecosystem services.

Freshwater and marine ecosystem services:

10. Understand and evaluate ecosystem services provided by poorly known ecosystems such as ice-caps and glaciers, groundwater, aquatic microbial communities, and deep oceans.
11. Better understand ecosystem services provided by deep sea environments, and how deep sea processes interact with and influence services provided by surface water and coastal ecosystems.

Soil ecosystem services:

12. Identify the main threats to soil biodiversity (including to specific functional groups) and quantify their impacts on ecosystem processes and services¹:
13. Develop sustainable land management to achieve multiple benefits from soils, their biodiversity and their linkage to aboveground communities (e.g. in terms of efficient nutrient use, carbon storage and ecosystem restoration)².

To develop the necessary high quality and policy relevant research on ecosystem services, particular attention should be paid to:

- Making use of long-term data (dynamics of ecosystems, ecological and non ecological historical data lessons).
- Ensuring long term management and open access to databases, including appropriate information technology for monitoring
- Promoting interdisciplinary research: ecological, social, geo-physical
- Reinforcing education on biodiversity and ecosystem services
- Improving Science, Policy and Citizens interfaces and engagement

¹This includes work on understanding: effects of global changes on soil dynamics and provision of ecosystem services (e.g. arid and grassland systems); source-sink dynamics for greenhouse gases of tundra ecosystems (including melting permafrost) and identify mitigation options; soil pollution and the role of biodiversity mitigating it; the role of soil biodiversity and soil ecosystem services in urban environments

²This includes work on: the relationship of soil biodiversity to different agricultural management; linking soil biodiversity and food security taking into account low carbon approaches; better integrating and linking soil and biodiversity sciences with agricultural and crop breeding sciences in order to develop new technologies; developing methods to maintain and make available traditional knowledge and agro-biodiversity for future land management options.