GEM-CON-BIO

Governance & Biodiversity: A Multinational Analysis

The research project "Governance and Ecosystem Management for the Conservation of Biodiversity" (www.gemconbio.eu) was completed in April 2008. Co-funded by the European Union under the theme "Citizens and Governance in a Knowledge-Based Soci- ety" of the 6th Framework Programme, its aim has been "to explore the interactions between governance modes and sustainable development objectives in view of iden- tifying what governance processes and institutions can best contribute to the conservation of biodiversity".

The 12 partners[*] in GEMCONBIO agreed a set of govern- ance types and used a set of 70 standard questions to gain data from 26 case studies of local areas (15 in 8 EU coun- tries, 2 in the USA, 9 in different southern countries). Eight further cases involved international use of specific ecosys- tem services (organic agriculture around the Baltic Sea, North Sea fisheries, and a 27 country EU-wide survey of 6 recreational activities dependent on wild resources). The 70 questions addressed issues of initial capacity, management objectives, governance processes and potential impacts (on ecosystem services, sustainability and biodiversity) for a new multi-scale analytic framework (Figure 1).

Variables from the Capacity-Objectives-Processes-Impacts (COPI) framework were then subject to staged multivariate analyses. Case study reports were synthesised and a govern- ance matrix derived, out of which policy conclusions and recommendations were formed. Statistically significant findings support the following conclusions.

1. Biodiversity, ecosystem services and sustainability were best where regular consultation of a single individual or organisation indicated strong knowledge leadership (fig- ure 2).

2. Biodiversity was best where ecological objectives were emphasised and where regulatory tools dominated so- cio-economic processes but there was also trust between stakeholders.

3. Ecosystem services were best where socio-economic ob- jectives were emphasised, and correlated negatively with regulations and regulatory compliance costs.

4. Services were most sustainable where local knowledge and monitoring of biodiversity resulted in adaptive man- agement (figure 3).

5. Uses of wild biodiversity create a large but diffuse socio- economic sector across Europe, in which awareness of regulations and market opportunities is important for conservation.
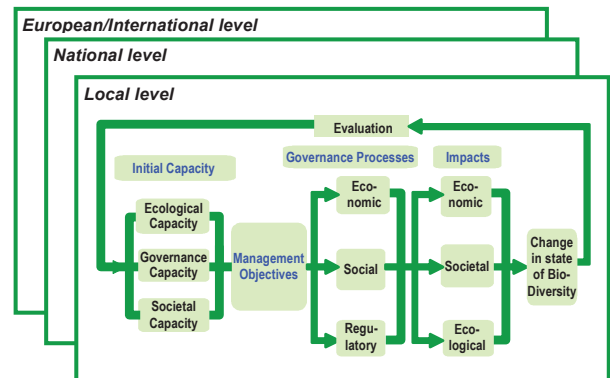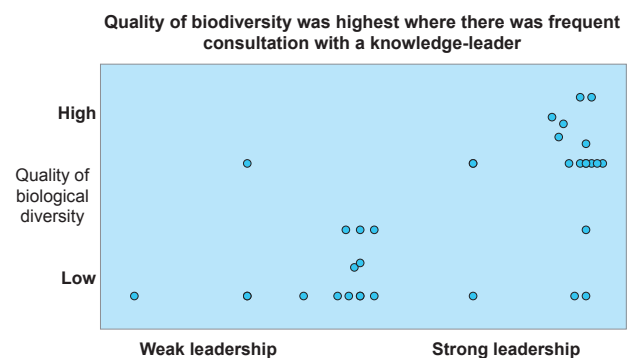

Figure 1. GEM-CON-BIO multi-scale analytical framework

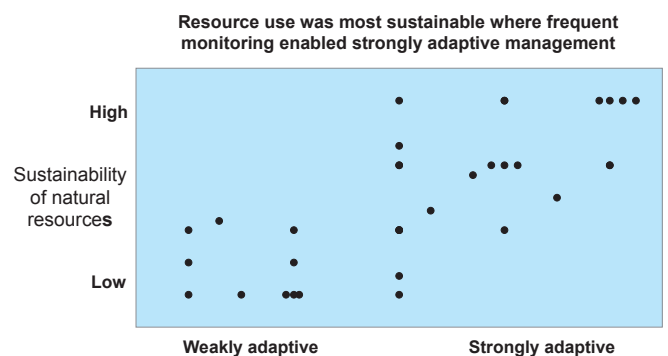

Figure 2. Dependence on knowledge leadership in each case

Figure 3. Application of adaptive management in each case

Consequently, it was considered that:

a. Governance and biodiversity are improved by employing and co-ordinating a variety of natural, social, cultural, economic and institutional resources and capacities.

b. Biodiversity conservation needs participatory processes as well as regulations; conserving by use may also need market tools and/or quasi-market measures (e.g. agri-environmental payments).

c. When developing and implementing management plans, all the ecological, social, economic and cultural functions provided by ecosystems should be taken into account.

d. There is a need to raise awareness (i) among European citizens of biodiversity value for socio-economic activities and (ii) among local stakeholders of decisions taken at national and international levels to promote ecosystem management and biodiversity conservation.

e. There is a need to monitor economic indicators, perhaps through a vehicle such as Eurostat, to understand how thriving or declining biodiversity impacts European economics and changes with time. New monitoring tools could also promote adaptive governance.

The findings indicate that a dual approach for conservation, of protection complemented by sustainable use of biodiversity, will benefit from great care in objective-setting and framing regulations. Strong findings on adaptive management and devolved governance endorse recent CBD guidelines for sustainable use within an ecosystem approach and favour community-based or policy-network governance. There is probably much scope to exploit the strength of benefit from institutional leadership, especially for guiding local decisions.

Particular need of support was identified for:

- assessing remote drivers and governance that operate locally (e.g. climate change, CAP);
- decisions affected by interactions between local and national/global governance levels;
- helping national/global policy makers to integrate knowledge at the regional and local levels (e.g. numbers of species, biotopes quality, etc) into the decision making process;
- helping local people to collectively maintain and restore these ecosystem services that are required at the national/global scales;
- systems that link local and higher levels of governance for the benefit of biodiversity.

Systematic collection of data for monitoring biodiversity, resource use and governance measures at different levels, could also aid:

- defining critical ecological thresholds for sustainability of socio-economic activities;
- studying resilience of modern institutions in the face of socio-economic change;
- development of scenario analysis for raising public awareness;
- promulgation of best-practices for governance and conservation;
  and
- timely action to alleviate adverse effects of climate change, alien invasive species and other environmental, social and economic emergencies.

Further information and component reports
can be obtained from
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