



Recommendations from the International Conference:

Ecological Networks: From Spatial Strategy to Implementation

Oisterwijk (the Netherlands), 1 and 2 October 2008

Seventy participants from 18 European countries gathered in Oisterwijk, The Netherlands, to discuss the planning and implementation of ecological networks in Europe. The two-day international workshop: **"Ecological Networks: from Spatial Strategy to Implementation"** as organized by ECNC-European Centre for Nature Conservation, with the active collaboration and support of the Dutch Ministry of Agriculture, Nature and Food Quality, the French Government and Alterra.

The aims of the conference were:

- To present and discuss the preliminary results of two international ecological networks projects financed by the Dutch Ministry of Agriculture, Nature and Food Quality (ANF), which address the links between spatial planning and ecological networks (the SPEN project) and the practical implementation of ecological networks through stakeholder involvement (the KEN project). The workshop sought to take stock of recent advances in the research, planning and implementation of ecological networks and to formulate clear recommendations to the relevant policy makers. The results will be integrated into research results of the SPEN en KEN projects.
- To provide an input into the Conference in the framework of the EU French Presidency of the European Union on "Biodiversity and Agriculture: Today's Challenges, Tomorrow's Research for More Sustainable Farming"(Montpellier, France, 4-5 November 2008). The second day of the workshop provided specific input for this conference.

The workshop resulted into a number of conclusions and recommendations, which are listed below. The Recommendations will be communicated to the following bodies and frameworks: relevant Directorates within the European Commission; the European Conference of Ministers Responsible for Regional Planning (CEMAT); CBD; all Pan-European governments and NGO's involved, via the Council of the Pan-European Biological and Landscape Diversity Strategy (PEBLDS); (in modified form to) the French EU Presidency Conference on Biodiversity and Agriculture, Montpellier, France, 4-5 November 2008; the next meeting of the Council of Europe's Expert Committee on the Pan-European Ecological Network, Strasbourg, France, 17 October 2008.

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Key Recommendations

A number of recommendations emerged from the presentations, the moderated discussions and two facilitated workshop sessions involving all of the delegates.

Day 1: Planning, practical delivery and stakeholder involvement

Policy Frameworks and Spatial Planning

- Develop an appealing and challenging European vision on ecological networks, linking to spatial planning frameworks and taking into account the dynamics of society and land use;
- Give a legally binding status to ecological networks at all geographical levels;
- Ensure coherence between the planning and establishment of ecological networks at all the above levels (while taking into account current decentralization processes in terms of the widespread devolvement of responsibilities from national to regional governmental levels);
- There is a need (emphasised by the above), for a cross-sectoral approach on ecological network and landscape connectivity implementation, including at the EU level (e.g. DG Environment, DG Transport, etc)
- Make more effective use of existing scientific knowledge to underpin the argument for ecological networks;
- Integrate ecological networks in key processes and land use sectors and operations including:
 - Common Agricultural Policy (CAP): with priority to agricultural management, connectivity, land abandonment and biofuel production;
 - Transport sector: with priority to fine tuning the green and grey networks;
 - Climate change: with priority to adaptation measures and connectivity requirements;
- Marine and coastal issues: with priority to marine protected areas and marine corridors.

Practical Implementation

- Adopt a stakeholder approach based on situation analysis and cultural settings (and where appropriate involve them as early as possible in the process) particularly when implementing ecological networks;
- Adopt an approach that integrates ecological networks as a key element within multifunctional landscapes that deliver a range of ecosystem services;
- Quantify the economic benefits of ecological networks and make them explicit for stakeholders at all levels, but in particular for involved land users and local actors;
- Create an ecological network knowledge base with inspiring best practice cases and methodologies including wider countryside applications; and identify and fill any gaps in the science/knowledge base.
- Create specific budget lines and innovative funding schemes for the establishment and management of ecological networks at all geographical levels;
- “Hold up the mirror” – rather than always looking at other sectors and suggesting that they are not doing enough (e.g. spatial planning) we should consider a greater level of integration of such issues when framing our own policy and practice;
- Develop targeted European, national and sub-national communication plans for the establishment and management of ecological networks, and the involvement of the public, the various governmental levels, the spatial planning sector, land use sectors and other vital stakeholders, including NGOs.

Day 2: Costs and Benefits of Delivering Ecological Connectivity in Multifunctional Landscapes

Costs and benefits of ecological networks

- Develop a better understanding of the costs and benefits of ecological networks to society in order to support effective decision making regarding activities and projects with a possible impact on ecological connectivity;
- Invest efforts and resources into research which accurately describes and quantifies the costs and benefits and the ecological impacts of economic activities;
- Develop an interdisciplinary knowledge based approach (in order to ascertain the above);
- Develop sound methodologies to assess and monitor the effectiveness of policies in relation to the planning of rural areas, including the implementation of ecological networks;
- Monitoring and assessment programmes for ecological network planning and implementation should be defined at the earliest possible stage of policy implementation and be as SMART (Simple, Manageable, Achievable, Realistic, Timely) as possible.

The role of ecological networks in multifunctional landscapes

- The planning of rural (and urban) space, and the role of ecological networks within them, needs to reflect the major changes in society that are presently taking place; (these changes include: a strong urbanization; increasing urban lifestyles disconnected from nature; land abandonment; communication technologies; increased transport and travel; etc);
- The design of ecological networks and their role in multifunctional landscapes needs to take into consideration the dynamic nature of ecosystems and animal and plant populations; (these dynamics can be exacerbated by climate change and therefore call for adaptation strategies);
- The planning and implementation of ecological networks should compensate the loss of ecological connectivity (which is the result of homogenization and intensification of land use, increased fragmentation, and the disappearance of traditional land uses - such as transhumance);
- Approaches and solutions (both practical and scientific) to the sustainable development of Europe's landscape should inherently reflect the dynamic nature of the landscape and its biotic and abiotic components;
- Knowledge and information of ecological pressures such as habitat fragmentation through road construction and their quantification, linked to location, should be part of standard assessment procedures, land use and spatial planning;
- Fragmented areas, with high pressure on the limited available space, call for innovative, creative, inclusive and participative approaches to restore multifunctional landscapes; the development of knowledge about ecosystem services and other benefits to society can help define roles for ecological networks in such approaches.

Key Research Priorities

The second day also focused on generating research priorities related to ecological networks and the specific questions of: "How can the intrinsic dynamics of biodiversity in relation to the dynamics caused by land use change, landscape fragmentation and climate change, expressed in multiple states balances as responses to climate change succession etc, be integrated into (species & habitat) oriented conservation policies?" and, "How can biodiversity conservation policy be integrated in other sectors?", with a priority theme around: "scientific knowledge and its application to ecological networks as a tool for nature conservation/sustainable development". In terms of elaborating on these issues, core **theories and concepts** were based around:

- How do the dynamics of agricultural landscapes and the heterogeneous quality of intervening habitats affect the local and regional dynamics of populations and communities at the genetic, species, population and habitat level?
- How are the dynamics of agricultural landscapes influenced by market developments (WTO, national, local, special products), policy decisions (EU, national), farmers decisions, related to novel policies, technologies or the internal evolution of farms, and what are their social, ecological and financial consequences (e.g. through the CAP)? Can we develop models of the evolution of farmland landscapes, including connectivity and ecosystem services?
- How can scenarios of potential future change in land use be used to consider the impacts of trends and change in land use on the viability and coherence of biodiversity in protected areas and outside?

Empirical knowledge & experimental tests:

- Develop a set of ecological indicators (species, communities) reflecting different states of landscapes (varying in acceptability for nature conservation) and suggest related monitoring schemes/methods that can be used across Europe
- Which landscape configurations allow effective dispersal, by which organisms? Using long term, landscape scale research and monitoring such as in LTER sites, in association with field experimental designs comparing new situations (connected) and existing landscapes (cf. Mader); Use these long term experiments to evaluate effectiveness of connectivity and their consequences for ecological networks.
- Develop a research line on assessing the economic and social values of ecosystem goods and services in agricultural landscapes
- What social processes determine character and the levels of stakeholder involvement, the impact of cultural backgrounds, the role of NGOs, of political organisation? Comparative studies between different social and cultural environments can make us understand the success and failure of top-down planning, bottom-up processes and the acceptance of networks.
- What are the methods that make it possible to monitor and assess changes in land use matrix, land cover as well as in the intervening natural structures on their impact for biodiversity?
- How do landscape configuration and land use and management techniques interfere? The suite of techniques used to grow crops influence biodiversity and many species live in fields. Therefore, protecting "green veins" out of the productive space is not sufficient.
- Which species of conservation interest would benefit from ecological network measures?
- What are the relative costs and benefits arising from ecological network implementation?
- How might we select protected areas in the future to accommodate environmental change?

Application of scientific knowledge

- How to use communication science in the awareness, development and implementation process
- How to integrate bottom-up and top-down approaches

- How can scientific knowledge be embedded in decision making processes
- How can trans-disciplinary methods be used to produce more robust outcomes
- How does this measure benefit biodiversity.....magic bullet or poison chalice?

Facilities

- Development of Communities of Practice
- Need for education and recruitment of ecological researchers
- Use of LTER sites for research on population dynamics as related to land use and policy changes. Too often the diverse disciplines study a subject in different areas and connections are difficult to build between results. Among the numerous research networks LTER networks are the only ones that are site based.
- Building of bridges between science and practice (policy making and landscape management)
- Explicit identification of the elements of the conservation toolkit
- Application of ecological triage – leave it, manage it, move it....
- Adoption of adaptive management paradigm – see North America
- Pressure, state, response models...

Policy knowledge

- Policy science research on the organization of biodiversity conservation of public institutions and stakeholder interaction
- Cross-sectoral and multi-scale analysis of mechanisms and messages, e.g. what are the key messages for different sectors and what works best at different scales in different countries.
- Apply SWOT analysis to DG Environment policies in order to realize what for ecological networks??.
- What works where – best practice from different countries.