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KEN - Knowledge for Ecological Networks: Catalysing Stakeholder
Involvement in the Practical Implementation of Ecological Networks

Current status of the practical implementation of ecological networks in the Netherlands

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Rob Jongman
Marion Bogers

Alterra, Wageningen UR



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Executive Summary

The Netherlands is strongly industrialised and the Dutch landscape is strongly influenced by man. There is almost no remaining natural habitat. However, the fragmented nature of the small remnant natural areas can function within an ecological network.

In a desk study and through interviews an overview is made of the implementation of ecological networks in the Netherlands.

The main responsibility for nature conservation in the Netherlands lies within the Ministry of Agriculture, Nature Conservation and Food Quality. The implementation of ecological Networks is the responsibility of the 12 provinces. In 1993 the national government started a decentralisation movement from the national government to the provincial government level. As a consequence, nature conservation tasks have been decentralised.

In 1990 the Dutch parliament approved the Nature Policy Plan (*Natuurbeleidsplan*), in which the long-term nature policy of the government is put forward. This policy principally aims at the sustainable conservation, rehabilitation and development of nature and landscape. In this policy plan, the government introduced the National Ecological Network. This is now being implemented through existing instruments but also with national funding from the Ministries involved in the Investment Fund for Rural areas (ILG, the fund from which among others nature development projects are financed). The fund is managed by the provinces that implement the national policy in their territory. Robust Corridors link core areas. Presently, the provinces have planned for 19.816 hectares of ecological corridors of which 4.464 hectares has already been realized.

From the beginning of the twentieth century, the number of organisations and societies founded for nature conservation purposes has grown steadily. Non Governmental Organisations are strongly involved in the implementation of the National Ecological Network. Stakeholders appear to have common visions on the way forward. Most interviewees agree that for the implementation of the National Ecological Network (NEN) the most difficult aspects are still to come as the areas which were easiest to implement have been realized, leaving the areas which are more difficult to convert. Most of the corridors are situated along water systems of small rivers to create the largest benefit.

There is no legal obligation to involve stakeholders in the planning phase of a corridor, apart from the installation of an area commission; however, even without a legal obligation, the early involvement of different organizations is ensured as their acceptance of policies and plans is recognised as having major importance to the successful implementation of area-based policies. In general the decentralization of the ILG funds has caused a trend of creating more involvement of more stakeholders.

One of the conclusions is that collaboration is “beautiful, but hard”. Collaboration between different government layers is less difficult, because the partners really need each other and it is clear what position they have in the hierarchy.

In cross border communication different cultural attitudes have to be taken into account; in relation to both organisations and people. So, it is apparent that the Dutch tend to ‘rush into action’ before having contemplated the plans sufficiently (according to a German policy maker). A good communication strategy is also seen to be essential for success. This needs to be clear, consistent and transparent to ensure support and prevent mistrust.

An important key to success is the design/plan, which needs to be carried out in a professional manner. Identification of the issues and what is at stake, in terms of economics and livelihoods, is essential and means more than simple dialogue. More attention needs to be given to professional planning. This aspect needs expertise, not simply the identification of the different interests of the stakeholders.

1 Introduction

The Netherlands is one of the most densely populated countries in the world. It covers 41528 km² (land surface including water) and it is inhabited by over 16 million people. Due to its favourable position along the North Sea at the estuaries of the rivers Rhine, Meuse and Scheldt, the Netherlands has been playing an important role in international transport for centuries. It is strongly industrialised. Historically urbanisation has been concentrated in the western part of the country where the historic towns of Holland are situated in a circle around the lowland peat area. More recent urbanisation has taken place in the southern part of the country (Noord Brabant, Arnhem-Nijmegen, Maastricht-Heerlen-Aachen-Liege region). In addition, over 60% of the Netherlands is in agricultural land use; indeed, this area represents the most intensive agricultural use in the EU.

The Dutch landscape is strongly influenced by man. There is almost no natural habitat remaining. Free meandering rivers are rare, semi-natural forests are small in area and number and all the natural bogs have disappeared. There has been a decline in linear features (Koomen et al 2007). However, there is still some nature left, mostly in small areas (Bischoff & Jongman, 1993). Large parts of the country are wet and flat resulting in the presence of a large number of small wetlands of international importance. Its largest natural area is the Wadden Sea. The fragmented nature of all of the other small remnant wetlands is a significant problem for the Netherlands; individually they are too small to sustain important plant and animal populations. They only can function in a network.

The Netherlands has a long history of nature conservation and environmental concern. This is partly a result of land availability, the need for continuous reclamation and drainage of land and the need for freshwater to safeguard drinking water and the quality of reclaimed land, all of which have driven the national interest for several centuries (Bromley, 1997). Since the end of the eighteenth century, the interest and appreciation of nature has undergone a strong increase. From the beginning of the twentieth century, the number of organisations and societies that were founded for nature conservation purposes has been steadily growing. The foundation of the Dutch Society for Nature Conservation (*Vereniging tot Behoud van Natuurmonumenten*) took place in 1905. Originally, the Dutch government concentrated its policy on the exploitation and afforestation of wildlands. The National Forest Service (*Staatsbosbeheer*), the Dutch public organisation for forest management, was founded in 1899 in order to manage forests and natural lands and to provide management examples for private landowners. Although the state did not officially participate in nature conservation until 1929, the National Forest Service co-operated with the Dutch Society for Nature Conservation (Gorter, 1986). Many state nature reserves were designated during this time. Although there was no law to govern nature conservation and protection was only administrative, it proved to be an effective means of nature protection (Bischoff & Jongman, 1993).

After 1945, the traditional idea of preserving nature areas grew into a broader concept that embraced the conservation of all semi-natural areas. At the same time public authorities became more involved in nature and landscape conservation. The number of public reserves grew and grants became available for private nature conservation organisations. In the 1960s there was a growing pressure on nature and environment due to economic activity. The nature conservation movement broadened its activities into the conservation of nature and the environment. From the 1970s onwards, a great variety of environmental organisations were founded and the science of ecology established an increasing influence on nature conservation and policy making.

2 Materials and methods

A desk study and interviews were carried out in order to construct an overview of the situation in relation to the implementation of ecological networks in the Netherlands. Use was made of official documents that reflect the development of the National Ecological Network (NEN) and the implementation of regional projects in the Netherlands. Most of the publications that were used are publicly available on the Internet. However, many of them are only published in Dutch and are therefore not easily accessible for a non Dutch speaking audience.

Structured interviews were held with a number of people involved in the development of ecological networks in the Netherlands. Specifically with a:

1. Representative of an species protection NGO
2. Regional manager of a nature management NGO
3. Civil servant from a water board
4. Civil servant, project manager NEN of one of the provinces
5. Civil servant, programme leader Nature of the Ministry of ANF, regional directorate

The above interviewees were considered most appropriate for the situation in the Netherlands, and the questions were adapted accordingly. The questions were used to guide the interviewees through the interview.

3 Knowledge areas of ecological networks in the Netherlands

3.1 Institutional Framework: tasks at national and regional level

The Netherlands has three levels of government: national, provincial and municipal level. In 1993, the national government began a decentralisation initiative in order to pass administrative responsibilities for rural areas from national level to the provinces, and to improve cooperation. This process ended in 2006 following the decision that the budgets of the Investment Fund for Rural areas (ILG) for management of rural areas should be managed by the provinces in cooperation with the regional services of the Ministry of ANF. ILG is a mechanism to improve cooperation between state, provinces and municipalities.

At national level three ministries have influence over the conservation of nature. The most important of these is the Ministry of Agriculture, Nature conservation and Food Quality. This Ministry cooperates closely with the Ministry of Housing, Physical Planning and the Environment. The third Ministry with responsibilities is the Ministry of Traffic and Water Management.

The Ministry of Agriculture, Nature and Food Quality is responsible for agriculture, nature management and food supply. Their tasks in relation to rural areas are focused on nature and landscape conservation, open-air recreation, acquisition and management of nature areas, agricultural areas and forests.

The Ministry (of Agriculture, Nature and Food Quality) consists of a number of Directorates with different functions. The Nature Directorate advises the Minister on matters concerning Nature policy, it has responsibility to the European Commission and it supervises the development of Biodiversity policy in the Netherlands. The Directorate mainly focuses on the development and evaluation of policy and is responsible for the development and application of policy instruments including: legislation, regulations and subsidies. The regional Directorates are responsible for the development and elaboration of national policy and collaborate closely with the provinces in policy implementation.

The Ministry of Housing, Physical Planning and the Environment represents the Netherlands in international affairs concerning the environment. Its mission is to take care of sustainable living surroundings. The Ministry is responsible for the execution of the 4th report on spatial planning. At the international level this Ministry is leading on Environment and Biodiversity. It is supported by the Ministry of Agriculture, Nature and Food Quality (ANF). The Spatial Planning Act has been renewed. From analysis of the new instrument it can be concluded that the role of regional government (provinces) is becoming more important. They can also use the new law for Nature development and renewal of rural areas; including the establishment of ecological networks (Kistenkas 2007).

The Ministry of Traffic and Water Management is responsible for water quality and the integration of nature conservation with road planning. They are strongly involved in planning and carrying out measures for safety and nature management in river areas, estuarine and coastal waters; as well as the planning of roads and their integration in the landscape through the planning and construction of ecoducts and culverts. The Ministry has developed the Multi Annual Plan for Defragmentation (Ministerie Verkeer en Waterstaat 2004), which contains a programme and budget to implement measures for defragmentation and, in this way, to improve the coherence of the NEN and the Natura 2000 areas embedded in it.

Implementation of ecological Networks in The Netherlands is the responsibility of the 12 provinces. In 1993 the national government began a decentralisation movement from national to provincial government level. This movement is also taking place in the field of physical planning and nature policy. The aim of decentralisation was to re-distribute responsibilities for nature conservation

between the State and the provinces in order to enlarge the accessibility and participation of citizens and to adapt policy to specific regional situations.

Nature conservation tasks have been decentralised. This means that the former national funds are now decentralised and provinces and the decentralised Directorates of the central government jointly implement the Ecological networks. All provinces develop ecological networks within their borders, exchange information and cooperate with neighbouring provinces and, if appropriate, with German regions (Niedersachsen, NordRhein-Westfalia) and the Belgium-Flemish region.

3.2 Current policy and Legal framework for Nature Conservation

3.2.1 Natuurbeleidsplan 1990

In 1990 the Dutch parliament approved the Nature Policy Plan (*Natuurbeleidsplan*), in which the long-term nature policy of the government is put forward. This policy aims principally at the sustainable conservation, rehabilitation and development of nature and landscape. The Government introduced the National Ecological Network (*Ecologische Hoofdstructuur*, NEN, Figure 1) in this plan. The aim of NEN is to develop a coherent network of natural areas (core areas and nature development areas) that are connected by ecological corridors. By introducing the concept of a NEN, the government launched a new approach to nature conservation, replacing the traditional protection of natural areas in their original status, with an active form of protection and nature development, setting clear priorities in a wider (inter)national context. The *Species Policy* is an important policy concept in addition to the Nature Policy Plan. It provides measures for the protection of specific species and deals with the application of legal regulations with regard to the protection of animal and plant species.

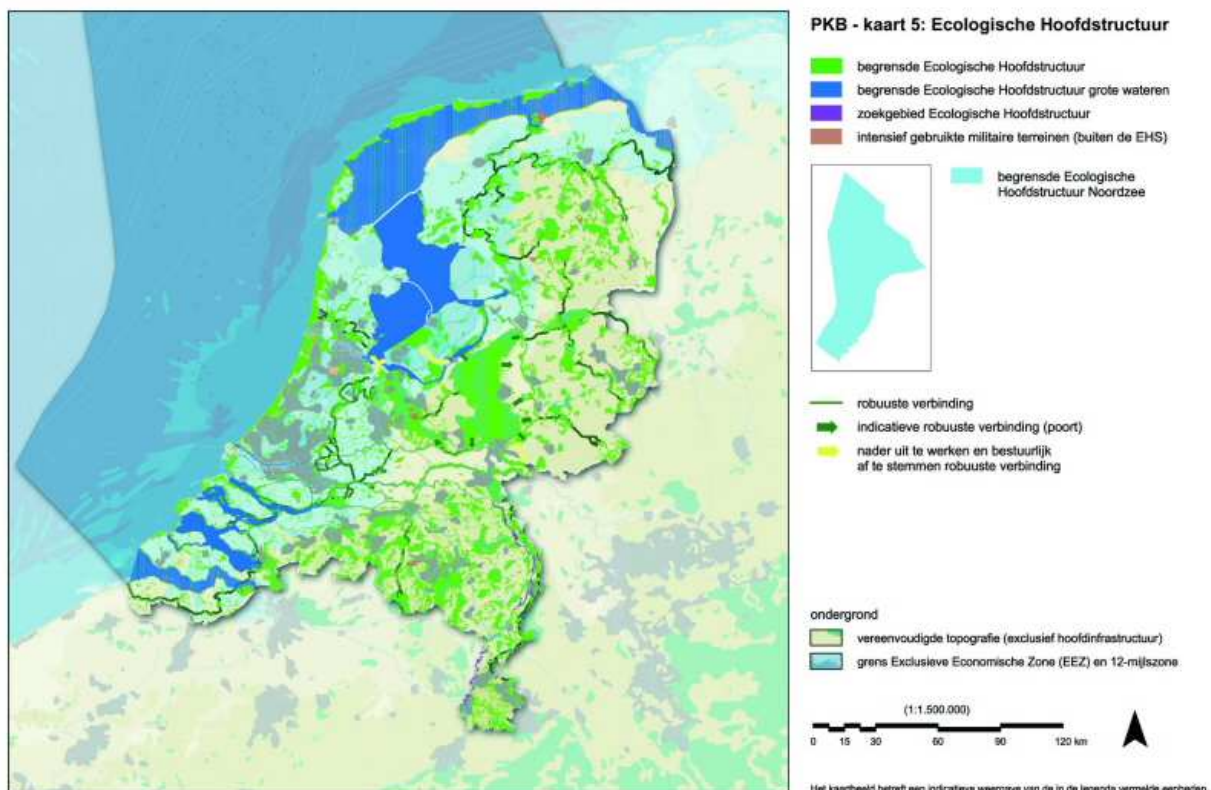


Figure 1. The National Ecological Network of the Netherlands

The plan for the NEN has been developed as a response to ongoing external pressures on nature and biodiversity, which include: urbanisation, infrastructure development and intensification of agriculture. In this context, the Ecosystem Services that are considered to be provided by nature, such as clean air, recreation, silence and experience of nature, have been given equal weight to the maintenance of biodiversity itself. A budget has been made available for nature conservation development and the recreation of wildlife areas in a coherent system, becoming the NEN. The target for the realisation of the NEN has been set for 2018. The NEN is a network of protected areas linked by ecological corridors. It will consist of the large existing coastal wetlands and the large lakes and estuaries, terrestrial nature reserves, new nature to be restored/recreated, robust corridors and agricultural areas with natural values (to be managed by farmers).

A legal basis and several instruments exist for the realisation of NEN. This can be divided into instruments for the realisation of core areas and instruments for the enlargement and connection of nature areas. The main legislation is the Nature Conservation Law. This law aims to regulate the main directions of nature conservation as well as its financial consequences by means of a Nature Conservation Plan that is valid for eight years. In this plan the policy for nature and landscape is formulated in relation to European policy, national environmental policy and water policy. All government bodies, institutions and NGOs are involved in its preparation.

For the creation of core areas the government has the following options:

- acquisition of nature areas by the enforcement of the *Nature Conservation Law*
- creation of National Parks
- acquisition of nature areas by the enforcement of EU Directives and International Conventions

For the enlargement and connection of nature areas, the government has the options:

- acquisition of land to create nature reserves and management agreements with farmers according to the *Policy Document on Agriculture and Nature Conservation*
- ‘*Strategische Groen Projecten*’ (Strategic Green projects): an instrument provided by the ‘*Structuurschema Groene Ruimte*’ (*Structure Plan of Green Space*), in which specific areas realise specific projects in order to reach a certain goal regarding the quality of nature and biodiversity.
- Creation of robust ecological corridors through planning, acquisition and agri-environmental measures.

3.2.2 Programma Biodiversiteit 2008-2011

In 2008 the Dutch biodiversity programme (Programma Biodiversiteit 2008-2011, Ministry of ANF) was published. Its objectives are to develop an active role for the Netherlands in the international and European arena, within the context of the international objectives of the CBD, the Millennium Development Goals (MDG’s) and the EU goal of halting the loss of biodiversity by 2010 and beyond. The concrete goals are among others:

- Actively contribute to the diminishing decline of biodiversity outside the EU;
- Contribute to reaching the Millennium Development Goals;
- Integration of biodiversity in economic sectors;
- Halting the decline of Biodiversity in the Netherlands by 2010 and developing conditions for the long term survival of natural species.

Ecological networks are one of the priority themes of the biodiversity programme. Quality decline and fragmentation of habitats are among the major threats for biodiversity. By creating ecological networks and simulating their further creation world-wide, these threats can be challenged. Within the Netherlands the NEN is the main network. It includes the Natura 2000-sites. Ecological networks within and outside the Netherlands are considered to be one of the factors that will insure the maintenance of biodiversity for future generations. The government of the Netherlands considers the integration of biodiversity into other sectors and coping with climate change as two of the big challenges for the future.

3.2.3 Multiannual Defragmentation Plan - Meerjarenprogramma Ontsnippering (MJPO)

The Multiannual Defragmentation Plan - Meerjarenprogramma Ontsnippering (MJPO) is a programme that aims to mitigate the fragmentation caused by roads and railways (<http://www.mjpo.nl/>).

Roads and cars cause pollution, fragmentation, noise and other problems for nature, in particular fauna. Animals are often road victims and fragmentation causes metapopulation effects: populations are dissected into smaller isolated subpopulations that only can survive by exchange with other groups. Ecological networks are intended to repair fragmentation and the MJPO contributes to this objective.

The MJPO is based on collaboration between various authorities to develop and implement defragmentation measures; (such as the connection of two areas on either side of a motorway by a fauna bridge or fauna tunnel). These are specific fauna facilities for specific species groups such as badger tunnels and amphibian tunnels. This helps to enlarge the area available for a population and a network system of habitats is developed allowing species to pass obstacles such as roads and railways.

For every province the main obstacles have been mapped and prioritized. Regional task forces have been set up for the priority problem areas consisting of all the authorities that are involved. The Ministries of Traffic and Water management (V&W) and Agriculture Nature and Food Quality (ANF) are jointly responsible for the implementation of the MJPO. Every four years the MJPO is evaluated and revised. Both the Ministry of V&W and the Ministry of ANF are financially responsible. In the implementation process regional partners are also involved, such as the provinces, regional directorates and the railway infrastructure management organization (ProRail).

The provincial platform is meant to discuss and decide on solutions for identified priority problems; the provinces are responsible for the organization of financing and supervision on the implementation.

3.2.4 Agenda voor een Vitaal Platteland (The Agenda for a Vital Rural Area)

Rural areas represent approximately 80% of the Netherlands and real investments are made here, including 700 million Euros for the NEN and reconstruction of agriculture. However, a vital rural area requires more than a budget. Rural vitality is achieved through a good economy, good living conditions, a strong identity, a well functioning ecosystem and an attractive landscape. An agenda for a vital rural area integrates this with European policy in the fields of nature, environment, water and rural areas. The vital rural areas agenda focuses on the three aspects of people, planet and profit in a balanced vision and implementation programme. The national policy is implemented by the provinces through the ILG budget for rural areas, which aims to make a more effective implementation through the inclusion of regional partners.

The Agenda for a Vital Rural Area is the national framework for policy programmes in the present and future years. The guiding principles are for the Netherlands are:

- A vital agricultural sector
- Sustainable management of agricultural landscapes
- Sustainable management of soil, water and nature
- Social services for land users; and
- Vitalisation of the rural economies

In the international context agreements have been made on the conservation on ecosystems and species. Natural values are under pressure and the species abundance is under pressure. Human activities should be better adjusted to natural processes. New activities in the rural areas are needed for the improvement of ecological quality and the Vital Rural Areas Agenda sets the programme for future development and investment.

3.3 Instruments for nature conservation implementation

3.3.1 Financial instruments: ILG and Groenfonds

The State, provinces, municipalities and water boards have made joint agreements to develop and maintain the rural areas. The ultimate aim is to carry out development according to the vision and ideas which exist at region level, and to combine objectives and finances in innovative ways in order to achieve better and quicker results. The Investeringsbudget Landelijk Gebied (ILG) was founded in 2007 and brings all the different investment regulations and subsidy regulations together into one fund, managed by the twelve provinces and supervised by the State. The needs of the region are now central within the scope of the objectives of the ILG. The Provinces are the directors of delivery and their guidelines are provided by the National Agenda for a Vital Rural

Area. This means that ILG provides funding for its execution in a way it is tailored to the needs of a region or province.

Their own objectives, but also those of municipalities, water boards and social organisations, can be carried out in contracts between State and provinces that are valid and financially guaranteed for periods of seven years. The objectives must be achieved, but there is a level of freedom about how this is done and when targets are realized.

The state budget that can be used by the provinces is merged into one fund, although the means can be from Agricultural funds, water management, cultural funds or spatial planning. Environment is an important theme for investment. What is agreed between State and province is concrete: hectares of nature redevelopment, kilometres of footpaths, hectares of soil purification, etc.

The Multi-annual Plan "Vital Rural Areas Agenda 2007-2013" is the basis of the agreement between the State and provinces and the budget of the ILG is made according to this programme. There are eight main themes:

- Multifaceted Nature: Acquire nature for the NEN, develop land and manage it. Funding of management and realisation of agrobiodiversity, environmental conditions of nature, Natura 2000 sites, National Parks.
- Vital Agriculture to improve the position of agriculture
- Attractive country for recreation, outdoor recreation around towns, walking, cycling, sailing, etc.
- Landscapes with quality: improve the characteristics of the National Landscapes
- Sustainable soil use: proper use, soil purification if needed
- Water management: keep the water system up-to-date in quality and quantity
- Special areas
- Socio-economic vitality: improve the social and cultural structure of rural areas.

The National Groenfond (Green Funds) has business finances as its core. It is a bank for financing activities in the rural areas. It takes care of the cash flow and the financing tasks in the ILG funding system. It also takes care of the finances of the special projects of the different governmental bodies and agencies; also for nature projects and landscape development projects such as: financing forest planting, moving farms from (new) nature areas. It is also involved in Public-Private Partnership projects.

The "National Groenfond" supports authorities in various themes such as:

- Integrated development of a region
- Landscape funds
- Land acquisition
- Moving farms from NEN areas
- Financing Green development projects

The National Groenfondts also support private Enterprises and private persons in investing in nature and landscape, such as development of nature on agricultural land, development of nature in or with an enterprise and forest establishment.

If private land is part of the NEN then there are provincial regulations for land management for compensation for the loss of land value. This is achieved through the National Groenfondts. It also provides cheap loans for these special areas and advises on issues of nature and landscape development.

3.3.2 Area protection

There are several types of protected areas that can be designated in the Netherlands. The 1969 *Nature Conservation Law* is the legal framework for internal and external management of designated protected areas. It has been revised and adapted to conform with the EU regulations (Birds Directive, EC Directive 79/409; and Habitats and Species Directive, EC Directive 92/43). It aims to protect all nature areas that have not yet been properly protected or managed and to secure the existing protected nature conservation areas and to provide a framework for the designation of protected nature monuments. It requires the preparation of a nature management plan for nature reserves.

Land acquisition is carried out by the Government Service for Land and Water Use (*Dienst Landelijk Gebied voor inrichting en beheer, DLG*). In the Nature Policy Plan and the Policy Documents on Agriculture and Nature Conservation, an amount of hectares is reserved for nature reserves, nature development and other types of protected areas. For each province a plan of acquisition is drawn up in which the Government, provinces and involved organisations consider which areas must be acquired and managed. The State Forest Service (*Staatsbosbeheer*) is a state agency that carries out management of Nature areas, as do the Non Governmental Organisations (NGOs) such as the *Society for Nature Conservation (Vereniging Natuurmonumenten)* and the *Provincial Landscape Foundation (Provincial Landscape Foundations)*. Usually, the acquisition of land is financed through own income, support from the state and, additionally, provincial grants, provided that the *Society for Nature Conservation* and the *Provincial Landscape Foundations* participate. Under the Nature Conservancy Act the following can be established:

- Natura 2000 sites based on EC Directives 79/409 and 92/43.
- Protected nature monuments/protected state monuments:
- National Parks.
- Protected landscapes.

The designation of National Parks serves the purpose of preserving and developing natural values and nature-related education, recreation and research. A national park must cover at least 10,000 hectares. The establishment of a National Park takes place following a procedure in which the government consults a consultative body with representatives of national government, provinces, municipalities, landowners and land managers.

3.3.3 Realisation of Robust Corridors

The Nature Policy Plan in the Netherlands (Ministry of ANF, 1990) proposed the realisation of an ecological network consisting of existing nature areas, nature development areas and ecological corridors. Ecological corridors are envisioned to connect fragmented nature areas throughout the country, to enable the migration of species and to improve the overall ecological quality of all Dutch nature areas. Connectivity was analysed as most important in the Netherlands in relation to the issue of habitat fragmentation.

The corridor policy has been criticised in the media and in the parliament as being insufficient for realising the objective of effective connectivity. However as the concept was well received by policy makers and civil servants at several levels the policy has been implemented in the regions. It was not only new and appealing, but it was also seen to be bringing nature to the people.

When the evaluation that ecological corridors were not functional was made in 1998, the alternative, Robust Corridors, was proposed: larger and wider zones with better protection status (Figure 1). An assessment was made in which ecological corridors were evaluated as making a significant contribution to the realization of robust corridors. Those ecological corridors are being financed through the ILG budget. At present the situation is that the provinces have planned 19.816 hectares of ecological corridors of which 4.464 hectares have already been realized. Of the remaining 15,352 hectares, 6.039 will be realized by the ILG budget. The remaining 9.000 hectares should be realized in another way.

3.3.4 Management of biodiversity outside reserves

The 1975 *Policy document on agriculture and nature conservation (Relatienota)* is a policy plan which deals with relations between agriculture and nature. The aim of this document is to protect valuable areas by stimulating extensive forms of farming. It was later integrated in the European Commission Agri-environmental schemes and is at present part of Axis 2 of the Common Agricultural Policy (CAP).

Within Axis 2 'improving the environment and the countryside' of the second pillar, 'Rural Development Programme' of the current CAP 2007-2013, there are a number of options to encourage sustainable farming practices and protect farmland biodiversity from further intensification, abandonment or other changes to land use, such as industrial and residential areas, that are considered detrimental to the objective.

Less Favoured Areas (LFA) payments in the Netherlands have been coupled with specific agri-environmental measures; as a result the utilisation of this scheme has been fairly low among farmers. To encourage more farmers to apply for LFA payments, the Netherlands will decouple compensation payment from a number of agri-environmental measures, such as for deep marshy pasturelands (approximately 40.000 ha). The total area of agricultural land designated as less

favoured areas encompasses 225,001 hectares, these areas include deep marshy pasturelands; flood plains; streams and flood plains; hill slopes; small scale (sand soil) landscapes. The LFAs will be expanded to include the preservation of characteristic marshy pastureland, characteristic small-scale landscapes, and the hilly country in southern Limburg, bringing the total LFA to 232.945 ha (Ministry of ANF, 2007).

In the Netherlands **Natura 2000** areas cover an area of roughly 1,120,000 ha, of which approximately 5% is devoted to agriculture. This is mainly grazing land that is designated as a feeding area for geese, swans and widgeon. When the Dutch Rural Development Plan (RDP) was submitted, the Natura 2000 payment scheme was not yet completed; it is therefore unknown to what degree Dutch farmers will be compensated to meet the legal requirements for the Natura 2000 areas. Farmers will be encouraged to practice farming in a manner that is conducive to nature, which may include compulsory requirements for raising the water tables of agricultural land (Ministry of ANF, 2007).

Table 1: Financial expenditure CAP 2007 - 2013

	Pillar 1 (SFP)		Pillar 2 (EAFRD)	
	EU funding (million euro)	Share of budget (%)	EU funding (million euro)	Share of budget (%)
Hungary	6493	63	3806	37
Ireland	9383	80	2340	20
Italy	26973	76	8292	24
Lithuania	1868	52	1743	48
Netherlands	5946	92	487	8
Sweden	5321	74	1826	26
United Kingdom	27827	94	1910	6

source: www.rlg.nl/cap/index.html

For the **agri-environmental payment/subsidy schemes** farmland managers are encouraged to manage their land to benefit nature, environment, landscape and climate by providing green services. Agri-environmental payments are made for activities such as postponing the mowing date for pasture birds or the management of field borders focusing on specific species to benefit biodiversity. The State and the provinces have made a catalogue of green services, in which all activities have been classified with the corresponding maximum compensation. The catalogue consists of various work packages including pasture bird management and landscape work packages (such as the maintenance of orchards). In the future, the Netherlands would like to implement the catalogue to its whole territory, but for now the catalogue is linked to subsidies. The financing of agri-environmental measures has a spatial focus, concentrating on the NEN and the National Landscapes. Currently land management is successfully conducted on 121.414 ha, of which 50.000 ha is HNV, the objective is to increase its area to 193.800 ha (HNV target 90.000) by 2013 (Ministry of ANF, 2007). From Table 1 it is clear that Pillar 1, the Single Farm payments, still receives a lion's share of the CAP budget in the older EU member states such as The Netherlands. This means that the realisation of the NEN is not carried out through agricultural subsidies, but predominantly through Nature Conservation budgets.

3.3.5 Species protection

Several plans exist for the protection of species, for which habitats are situated inside and outside the NEN, containing specific measures for species protection. These measures form a supplement to the day-to-day management.

The 1998 *Flora and Fauna Act* legally protects plant and animal species. In this act, the former *Bird Law*, *Hunting Law*, *Law for threatened exotic animal species* and the chapter on species protection of the *Nature Conservation Law* are merged. The Flora and Fauna Act aims to protect all animal and plant species. It contains prohibitions for killing or catching certain species and removal of species from nature. It protects all bird species that occur naturally in Europe and it contains a list of species that may be hunted. The Flora and Fauna Act meets the requirements of the EU. Special species protection plans exist for various species. There are traditional species protection plans (Table 2) and new plans based on recent threats.

Table 2: Traditional species protection plans

Species (Group)	Year established
<i>Meles meles</i>	1984
Bats	1988
<i>Lutra lutra</i>	1989
Threatened wall plants	1990
Butterflies	1990
<i>Tetrao tetrix</i>	1991
<i>Perdix perdix</i>	1991
<i>Platalea leucorodia</i>	1994
<i>Tyto alba</i>	1996
<i>Athene noctua</i>	1999

However, nowadays there is also attention for less obvious species such as weeds in arable fields (*Legousia speculum-veneris*, *Agrostemma githago*). The main cause is intensification and better seed selection in agriculture. A protection plan for agricultural weeds 2000-2004 covers 14 species. The protection plan for *Hyla arborea* 2001-2005 contains measures for the tree frog. This species mainly occurs outside protected areas and outside the NEN. Special measures are therefore required. For *Bombina variegata* and *Alytes obstetricans* a species protection plan has been developed for the period 2000-2004 to restore its habitat and population (only a small area in the southern part of the country), because the species are strictly protected and the population was declining.

Marsh birds are important in the Netherlands, but many of them have declined due to unfavourable water management, fragmentation of marshlands, disappearance of natural dynamics, decline in water quality and succession due to lack of management. The species protection plan for marshland birds covers eleven species (Table 3).

Table 3: Species in the Marshland bird species protection plan 2000-2004

<i>Panurus biarmicus</i>
<i>Luscinia svecica</i>
<i>Circus cyaneus</i>
<i>Acrocephalus arundinaceus</i>
<i>Netta rufina</i>
<i>Nycticorax nycticorax</i>
<i>Platalea leucorodia</i>
<i>Porzana porzana</i>
<i>Ardea purpurea</i>
<i>Locustella luscinioides</i>
<i>Ixobrychus minutus</i>

3.4 Participation of Non Governmental Organisations (NGOs)

The Netherlands has a long tradition of voluntary sector or non-governmental organisational involvement in nature conservation. The Dutch Society for Nature Conservation was the first NGO to be established, in 1905. Nowadays, the non governmental sector is firmly embedded in Dutch nature conservation. The Dutch NGO sector contains a range of organisations with a diversity of functions. Some of the large NGOs are involved in the acquisition and management of natural areas; others support, advice and/or oppose government agencies. Participation in policy making occurs on many levels, ranging from local development plans to negotiations at ministerial level. There are frequent meetings between the NGOs with private enterprise, public citizens and members of the national cabinet and there is also much communication between the NGOs themselves (Lankester, 1994).

Besides the national and regional NGOs there are many local NGOs active in the field of nature conservation, management of cultural heritage including the landscape and farmer's organisations. They all belong to the stakeholders involved in implementation and all are allowed possibilities to present their views and influence developments. This can make implementation a rather slow and delicate process. Mutual trust is essential.

A special group is formed by the NGOs that collect data and carry out nature studies and education. These are bird, mammal, amphibian, reptile and insect oriented organisations.

In a study on the development of the NEN in Gaasterland in the north of the Netherlands the development of policy including involvement of stakeholders was analysed (Kuindersma et al 2005). Farmers, nature managers and private owners all have different approaches and objectives. It appears that initial resistance by part of the population changed in a cooperative and active attitude to realise nature in the region. The process of cooperation between NGOs and local and regional authorities developed slowly. Bosk en Greide, one of the local nature management organisations and the national nature NGOs are developing an attitude of mutual trust after a crisis in 1995. In addition the relationship between the Province and local people has improved slowly in which the municipality was an important facilitator. The Ministry of ANF did not play a prominent role.

Concrete measures that benefit people and nature were major tools in developing trust and cooperation. The local NGO plays a crucial role in the relationship of farmers and provincial authorities. The challenges for the coming years are further development of the NEN structure in this region and development of less productive habitat types in cooperation with the NGO and the farmers.

Table 4: Overview of a number of Dutch NGOs and their focus.

NGO	Activities and objectives
Society for Nature Conservation	Large NGO with many members, the largest private land owner in the Netherlands (over 900.000 members)
Society for Nature and Environment (Natuur en Milieu)	A federation with technical expertise and lobbying staff at national and international level
World Wide Fund for Nature, The Netherlands	National and international protection of flora and fauna. Emphasis on international protection (over 900.000 members)
Provinciale Milieufederaties	Provincial organisations with technical expertise and lobbying staff coordinating environmental participation and local organisations
Dutch Society for the Protection of Birds	Protection of birds and their habitats in co-operation with national and regional governments, other organisations, farmers associations, etc.
Provinciale Landschappen	Regional landowner of protected areas and cultural objects (one in every province)
Greenpeace	Environmental and Biodiversity action Worldwide
Milieudefensie	The Dutch version of Friends of Earth
Vlinderstichting	Organisation focusing on collection distribution and abundance data of butterflies. It is a volunteer organisation supported by professionals. The foundation gives advice carries out research and exploits a national monitoring network.
RAVON	Volunteer organisation for research on reptiles, amphibians and fishes. It is a volunteer organisation supported by professionals. The foundation gives advice carries out research and exploits two national monitoring networks.

3.5 Results of the structured interviews

3.5.1 Theme 1: stakeholder involvement in different sectors

The Dutch ecological network is called the "Ecologische HoofdStructuur" (EHS in Dutch) or National Ecological Network (NEN) consisting of larger areas (core areas) and robust corridors. In a few cases the nationally defined NEN has, and is being extended by the creation of additional, smaller areas that have been defined by the provinces, based on regional policy objectives. This is because the "Agenda Vitaal Platteland" (Vital Rural Areas Agenda) omitted ecological zones as an objective and they are therefore no longer financed by the national government. Some of the ecological zones were then, therefore, rescheduled through the robust corridors programme; others (25%) were backed by regional financing. The NEN can be seen from three different perspectives: financial, spatial and planning. The current philosophy and aim is now is to merge these views as much as possible.

The above definition of the concept is known and accepted in relation to policy. However from a scientific perspective an ecological network can also be seen as the basic infrastructure needed for a certain species. In the implementation of the NEN there is a consistent approach.

The practical implementation of the EHS in the Netherlands is already well advanced. In six of the twelve provinces the targets are incorporated in the regional plans. However in the new Spatial Planning Act (WRO, 2006) the regional plans are no longer binding for the municipal plans. A 'sub-law' (AMVB) is therefore being prepared in order to ensure that the national targets are implemented in the municipal plans (bestemmingsplan). From a legal spatial planning point of view it will therefore take another 5 to 7 years for the EHS concept to be fully incorporated. Provinces have a major role in delineating the NEN through the Regional Plan. The NEN is the structure to be realized and the "Programma Beheer" (policy delivery framework/programme management process) is the tool for its realization. In Gelderland it is in total 200.000 ha of a total area of 500.000 ha including hydrological buffer zones and robust corridors. The Veluwe is the largest terrestrial nature area in the Netherlands. There are eight "nature portals" planned in the Veluwe that have special landscape and ecological qualities such as high-low gradients and forest-open gradients. They link the Veluwe with other core areas for biodiversity. The Renkum stream valley is one, which links the Veluwe with the Rhine.

Provincial governments are aiming at a realization of the NEN by 2018. However realisation is and will be a difficult process as there are potential conflicts with other land uses such as agriculture and road planning. In addition there are problems in financing land acquisition as land prices have increased more than planned in the original financing.

There are several projects on-going in different stages of implementation from design and study to actual implementation and evaluation. The area which still needs to be realized is: 37.000 ha, to be bought for nature purposes, 40.000 ha for agricultural nature management and 42.000 ha for private nature management. This is according to the original targets.

There is a slight slowing down of the process due to the recent decentralization (ILG) which made the regional provinces responsible for implementation. However this is most likely only temporary. It is expected that in 2013 most contracts under the ILG-agreement will have been earmarked for concrete projects. After 2013 acceleration is needed in order to reach the targets set. In the province Gelderland, there is some concern that the targets will not even be met by 2018. The execution is now about halfway complete, so a lot of areas will need to be purchased. There are people who would like to use the instrument of disownment more often.

Most interviewees agree that for the implementation of the EHS the hardest parts are still to come. The areas which were easiest to implement, because they already were earmarked to become nature or because they were economically marginal areas, have been realized. The remaining areas are those which are more difficult to convert. However this view is not shared by Gelderland: they feel that it has always been difficult. Of course the establishment of robust corridors is harder than enlarging the existing nature areas, especially where the corridor is crossing an agricultural area. Most of the corridors are situated along water systems of small rivers in order to create the largest benefit.

The Veluwe is like the 'hub' or 'roundabout' of the EHS, with the Nature portals in Gelderland acting as the 'roundabout exits'. An average ecological corridor is 200 ha. The ecological corridor of the Utrecht's heuvelrug is most developed. The planning already started during the 'reconstruction' process and it is now formalized in the area plan (gebiedsplan) 'Nature and landscape'. An area plan is a more detailed plan than a regional plan, focusing on the nature targets, exact locations for practical action and giving available budgets.

For some Cultural Landscapes no financial backing was found to strengthen these areas and they are now outside the EHS. However, areas which need a strict water management regime and which have High Nature Value have been given buffer zones. It used to be unclear if these buffer zones would remain agricultural areas and where farmers had to adopt different water management practices. Now these areas are part of the EHS and the land can be bought. Most of these areas are high quality Natura 2000 areas.

The current rise of land prices due to recent developments in food prices (and consequentially) land prices is also obstructing the implementation process and has in some cases led to a renewed discussion and a deterioration of the acceptance of the principle by landowners and, in some cases, by civil society as well.

Financing is also still a concern for Gelderland. There is no problem in financing eco-passages, but there are little means to buy land. About 3000 ha has been bought by the Dienst Landelijk Gebied (DLG, Rural areas service) which can be used to trade areas with farmers. However, they are not in the right location now. Only 200 ha can be bought for nature areas and only 850 ha for the corridors. If financing for the period between 2013 and 2018 could be guaranteed by LNV, the Province could borrow money for pre-financing, but this is not the case.

It is recognized that a different approach is now needed; where the possibilities for a combination of land use functions must be explored, (multi-functionality). However, there has not yet been a change in strategy; rather the discussion is now on a more active use of disownment.

Gelderland is developing active acquisition strategies at the moment. There used to be no strategy at all and land was only bought if offered by a farmer. Now in 39 areas a buying strategy has been formulated by DLG, as requested by Gelderland. This means that a close look will be given to the exact areas which need to be bought. The landowner will be contacted and assessed if the land can be acquired relatively easy or not.

There is no discussion on the original concept of the EHS, on the contrary it is still becoming stronger and accepted more widely. When the concept of the EHS was launched there was little financial backing. Over time the concept has received more support from scientific proof and evidence. Now the EHS is accepted throughout, possibly with the same status as other infrastructure, and implemented with sufficient funds. In the future (after 2013) the means for financial backing is still unclear, but there is a feeling that there is "no reason to start worrying about that at the moment".

There is also much commitment for Gelderland. The province has therefore installed four regional offices and allocated staff to these locations. In every regional bureau there are also some delegates from the water boards, and the recreation boards are present. They take an active role in implementing not only the EHS, but the whole rural area policy.

The main stakeholders in the process are the provinces. They control the budget to buy the necessary land (Investerings Landelijk Gebied, ILG) and are seen as the director of the process. Often they delegate this task to Dienst Landelijk Gebied (DLG) or they contract an outside consultant bureau as programme manager.

The number of stakeholders involved has increased considerably in the last few years. Integration into sectors can improve this even more. In the delimitation of the NEN by the province a new procedure has been carried out for which the ministry of LNV and the Inter-Provincial board (IPO) have made an agreement (in the form of guidelines). The NEN delineation is the subject of public participation. In Gelderland 300 reactions have been given that will be included in the final decision. Some were stating that the plan was too extended, others found it too narrow. In October 2008 the final approval is expected by the Provincial parliament for a now robust delimited EHS of around 200.000 ha. Realisation, especially of the Nature portals is particularly important and is preferably carried out in cooperation with all actors involved. Some partners in this process have a different focus such as the water boards. Their main focus is quantitative and qualitative water management, but ecological water quality and coordination with nature policy is important as well. The most important parties that are overlooked are the smaller groups of local experts in ecology and local agricultural organisations. They know the region, are known by the public and are often able to spend time in a project and convince others when they are convinced.

Other stakeholders always include the landowners, who are mostly farmers, and land managers or larger nature organizations, such as Natuurmonumenten and Staatsbosbeheer. They are often responsible for land use and land management. Municipalities and local (nature) organizations are also present. Due to the fact that much of the area covered by the EHS is related to water and because of the implementation of the Water Framework Directive (WFD, EC Directive 2000/60), the relevant water board(s) and the Directorate-General for Public Works and Water Management (Rijkswaterstaat) are also important stakeholders.

Gelderland has recently signed long term contracts (until 2013) with the larger land management organizations (Natuurmonumenten) and has therefore, in a way, re-directed the ILG financing. For the receiving organizations this will also enable them to carry out long term planning.

In the new Spatial Planning Act (WRO) an amendment has been included, which enforces the installation of an area commission (gebiedscommissie), where all relevant stakeholders are present. An area commission is a planning commission that comprises all those parties willing to put energy into the project. Area commissions were first installed during the 'reconstruction' of the areas with intensive animal husbandry holdings. Many decisions made at that time are still in the process of being implemented. A large part of the ILG is therefore tied up in agreements still to be realized. Unfortunately, due to the set-up of the ILG, there is no longer flexibility to transfer funds from one province to another. There is however flexibility for provinces to spend their budget over a longer time span.

It is not uncommon that it becomes clear during the process that certain stakeholders were missing. This often concerns the farmers association, and local (nature) organizations, which have been overlooked in the starting-up phase. But it is also possible that certain stakeholders, like municipalities, only become interested in the process when it is already well underway. The involvement of the farmers' organizations, like LTO, can be problematic. Often there is little for them to gain in an area to be converted to nature.

It is recommended that the process should start with a thorough analysis of the stakeholders: who is involved and to what extent they are involved (direct or indirect). It is no use involving stakeholders in finding a solution for problems they do not experience. It can be useful to know how these stakeholders are organized.

The national strategy for involving stakeholders is not strictly defined, as it is the responsibility of the regional government. There is also no obligation by law to involve stakeholders in the planning phase, except for the installation of an area commission; however, even without the legal obligation, early involvement of different organizations is ensured, as their acceptance is of major importance to a successful implementation of area-based policies. There can be changes in strategy during the process which are mostly caused by political developments, (for instance, rising food prices). In general the decentralization of the ILG funds has caused a trend of creating more involvement of more stakeholders.

The major change in stakeholder involvement occurred five years ago, with the start of the reconstruction process; at which point an area commission with all interested parties became obligatory. For the province of Gelderland the main change is the installation of the regional bureaus, which has enlarged the number of actively involved stakeholders. This process is appreciated very much by the different regions. For the province it has the drawback of being more difficult to manage. It is possible that the regional bureaus will each develop a different view and even start competing with each other.

The timing of involvement of stakeholders is important; an early involvement will enhance the acceptance of the decisions made in a later stage. The planning process and stakeholder involvement cannot be separated and it is important to have all stakeholders present at the start. However not all stakeholders have the same interest in the different stages of the process. Their involvement needs to be targeted and efficient. They have to be involved in crucial steps of the process; being involved in the whole process is often not feasible due to time constraints.

Problems with stakeholder involvement can occur easily; the process takes a lot of energy and time. If a local stakeholder organisation has been overlooked in the starting phase, this can severely delay the process in a later stage. Local organizations often have a very different view from government and larger nature organizations. The local population values their cultural-historical landscape and want to protect the environment as they value it. Cultural-historical values are still underdeveloped and should be looked at more closely. The stakeholders involved need to have something to gain in the process. There are good experiences with the area-based processes which have a broad target and where there are opportunities for all involved stakeholders.

Some stakeholders can be problematic as they are more capable of obstructing a process. They are familiar with laws and rules. They are also capable of influencing members of parliament to ask questions to the Minister on the issue.

3.5.2 Theme 2: socio-economic interests and ecological connectivity

The acquisition of land for the EHS is financed through the ILG, a provincial fund which is set-up by three ministries: The Ministry of Agriculture, Nature and Food quality, the Ministry of Housing, Spatial Planning and the Environment and the Ministry of Transport, Public works and Water management. The management of the areas is often done by the larger nature organizations like Natuurmonumenten and Staatsbosbeheer. They have their own funds and can apply, like local land managers, for subsidies such as the (Regional) subsidy for agri-environmental measures: (Provincial) Subsidy regulations such as Agricultural Management and (Regional) Nature management.

The ILG finances are an improvement in the implementation of the EHS. However, a funding shortage is expected in the long run; (but presently it is felt to be too early to complain). Gelderland will first finish the available budget and look for additional funding later when needed.

The cooperation with the water boards is becoming closer, especially due to climate change. The water board is interested in holding water in the area as long as possible, improving the sponge function. A pilot project has been set up along the Baakse beek (Stream), where the water retaining capacity can be easily combined with the function of an ecological corridor. The water board which has its own finances from tax payers is investing in this project. At the same time the agricultural sector can also benefit from the project. Part of the area has been designated for agricultural development with better water management and new companies.

The cases of Schieveen and Tiengemeten can be mentioned as an example of "best practice", showing that a balance between the socio-economic interests of individuals and the interests of society to maintain and restore ecological connectivity can be achieved.

In Schieveen, a green zone north of Rotterdam, a new business park has been developed with an interest in green space. The development has been implemented in cooperation. This combines the lack of industrial area with the need for nature and recreational area in the vicinity of Rotterdam.

In Tiengemeten the farmers had to leave and there was a loss of function. This was replaced with a new recreational function with many visitors and new private investors. Employment is probably higher now, but it still needs to be explained well. Due to the fact that Tiengemeten is an island, it is easier to monitor and successes can therefore be highlighted with greater ease.

In Schieveen the stakeholder participation is crucial. The municipality of Rotterdam is leading the effort, but sub-municipalities are involved.

In Tiengemeten it became clear that it was necessary to get the participation of stakeholders who were interested in the new functions of the island. These were not necessarily stakeholders originally present in the area.

In Twickel, the project 'Farmers for Nature' is an excellent example. Biological farming and cultural landscapes can be combined easily with managing nature. It is important to compensate the farmer sufficiently; provinces, water boards, private recreation investors need to contribute to a fund which can then pay the farmer. The contract needs to be of sufficient length to be attractive for the farmer, (e.g. 30-years). Acceptance is not a given fact but needs to be acquired. Often the quality of the plans is lacking and their scope has been too narrow.

Another example of best practices is the Renkumse Beekdal. There was a complete set of measures; however, the analysis of what was needed in the area was well done. Not only the industry was removed from the area, but also three eco-passages were planned. 250 ha of agriculture will be replaced by nature. Agriculture had little to gain in this process. In spite of this, it was made possible because some larger farmers in the area were ready to retire or to change

from being a farmer to becoming a manager of a natural area. This caused a snowball effect and others followed.

3.5.3 Theme 3: Synergies between regional, national and international level

"Collaboration is beautiful, but hard". Collaboration between different government layers is less difficult, because the partners really need each other (so there is a clear driver for collaboration) and it is clear where you are in the hierarchy. The National Government considers themselves delegators of the tasks to the provinces; they will keep track of the results through reporting, but leave practical decision making to the regional authorities. Provinces and national government have a shared responsibility for national targets.

In some case the delegation of the responsibilities to the provinces is seen as too rigid. For example the collaboration between Gelderland and Flevoland was very difficult. By installing a task force led by LNV it was possible to overcome differences and after a decision was made it has now been possible to disband the task force.

Collaboration between equal government layers is more difficult, such as with three municipalities of three provinces. There is more competition between these layers and a different organizational setup of the different partners is often not so easily accepted. In some case like 'Room for the River' the three involved ministries have facilitated the process by setting guidelines and combining finances in one location. This leaves room for focusing on the details of the implementation without having to negotiate financing from different ministries. This should be done more often and could be an example for areas dealing with two or more provinces. A point of concern in this aspect is that the delegation of responsibilities to a lower level may lead to a watering down of the original goals. Too many local interests may lead to not achieving the original objectives set (at the international level).

Collaboration between the provinces should be improved by organizing more exchange of ideas on the implementation of the national policies. This could be facilitated by LNV. Provinces all have their own approach and much can be learned from each other. For example, by organizing a two day congress with presentations from the provinces.

Collaboration on an international level can be greatly facilitated by official declarations between governments. In November 2007 the ministry of LNV signed a memorandum with Nordrhein-Westfalen and Niedersachsen, two German states. This has allowed much room to develop a collaboration agenda, where the focus will be on Natura 2000, the Water Framework Directive and Spatial Planning. The process is still in the initial phase, getting to know each other and exchanging ideas. On the Dutch side representatives from the organizations usually involved (e.g. Natuurmonumenten, water boards) are present in this process.

In cross border communication different cultures have to be taken into account, in organisations and with people. Some examples: 1) In Germany the actual implementation is done on a much

lower level (Kreise) than in the Netherlands; 2) In Germany there is also more emphasis on recreation; 3) The Dutch tend to rush into action before having contemplated the plans sufficiently (according to a German policy maker).

A good communication strategy is essential for success. This needs to be clear, consistent and transparent to ensure support and prevent mistrust. One communication strategy is to inform stakeholders and create acceptance for a certain solution. Another strategy can be to start a dialogue and accept that the outcome might be different than originally planned. To identify the communication strategy needed, stakeholder analysis can be beneficial. Note that the analysis will probably need to be updated during the process.

Improvement of the implementation process: an important key to success is the design/plan, which is crucial and needs to be done professionally. Stakeholders are a too widely used notion; more study should be done to identify the stakes in the area and to only involve those people who really have an interest in the area or can develop an interest. This means more than just talking. This is difficult if many stakeholders will find their stakes deteriorate in the process and will lead to them defending their interest and halting change. Often only after accepting the unavailability of change it is possible to develop something new and to start building new functions. So people who can do this need to be involved as well.

More attention needs to go to professional planning. This needs expertise, not just to identify the different interests of the stakeholders; a good plan is more than that. You need to work with good landscape architects and good planners as part of the facilitation process, because they can create order and images.

It is important to create a new goal together or a vision which inspires people to put their energy in. This is more than the facilitation of a group or leading a process. The province is too often not committed enough, just organizing the process and not taking sufficient responsibility.

Balanced land use: due to the pressure on land possible combinations of land use functions need to be investigated.

More synergy: Prevent stagnation of the process; the implementation process is a long term involvement. Frustration often occurs if the stakeholder responsible for directing the process (in most cases the provinces) is delaying due to lack of decision making power. Governments should have the courage to make clear decisions in case of difficulties, because stagnation will lead to polarization.

4 Example resulting from policy: Renkumse Beekdal

4.1 Introduction

The Renkum valley links the largest Dutch Nature area, the Veluwe with the river Rhine. However, traditionally the valley had a paper mill at the lower end that developed into a large paper factory.

The Renkums Beekdal is a narrow valley at the southern Veluwe shaped over 100.000 years ago by Saalien land ice. Water from the Renkumse beek has been used for many purposes but its main function was driving water mills for corn, oil (rape seed) and paper. In the 1930s the paper mill was transformed into a paper factory. The paper factory moved in the 1970s to a site, where more space was available for development. In that period the possibility of returning the area of the paper factory back to nature was discussed, but direct economic development was more important at that moment.

The industry that replaced the paper factory has moved elsewhere for the same reason: more space for development; smaller industries have remained. Now the decision has been taken to remove the industrial activities and return the area back to nature to make it the corridor that was planned for within the NEN (Figure 2).

The industrial Estate Beukenlaan is being removed at present, defragmenting measures are being taken concerning the road system and the water system is being restored. In this part of the Veluwe there are grasslands that will be used to enlarge the habitat of the red deer that can even reach the river now. The industrial estate measures 12 ha and still comprises 19 companies, mostly smaller, that will have to move elsewhere. It is crossed by several local roads and the provincial road Arnhem-Wageningen (N225).



Figure 2. Stream valley of the Renkum Stream and in the central area the industrial Estate Beukenlaan between the village of Renkum and the Veluwe Nature area.

The realisation of the corridor for fauna (red deer) means not only the removal of the industrial estate, but also defragmentation in the wider surroundings. Ecoducts have to be realized over the motorway A12 (west-east, Utrecht-Germany), A50 (north-south direction), N225 and the rail track between Utrecht and Arnhem/Germany. Speed reduction on other regional roads and

transformation of intensive grasslands into natural grasslands (225 ha). The project is one of the priority projects in the MJPO.

The benefits are thought to be a better functioning of the area for nature, a better environment in the village (no trucks going through it), attraction of outdoor recreation and tourism and improved facilities for education.



Figure 3. Announcement of the project Renkums Beekdal at location Beukenlaan (see also <http://www.renkumsbeekdal.nl/>, in Dutch)

4.2 Involved parties and partners

The working process and its results are dependent on the many engaged authorities, individual persons, the financing mechanisms that are available as well as the economic climate. The timing was appropriate; transforming industry into nature was not possible in 1978. It could be done now, because there was a political momentum caused by the political situation in which a convergence developed between economic development, industrial activities, policy objectives and cultural and social values. The agenda was set, the financial instruments available. Crucial factors were the engagement of the Municipal Council, engaged civil servants, individual citizens, involved scientists and lobbyists. Crucial factors are the facts that there is a policy vision, good networking, crossing borders between organisations and ambitions of those involved.

The future of the valley of the Renkum stream has been decided by policy, by weighing of costs and benefits of recuperation and robust ecological connection. Involved in this process were:

- Supervising national authorities:
 - Ministry of ANF
 - Ministry of Transport and Water Management
 - Ministry of Environment and Spatial Planning
- Initiating and coordinating regional and local authorities:
 - Province of Gelderland
 - Municipality of Renkum
- Implementing and future management organisation:
 - Dienst Landelijk Gebied

- Water Board Vallei en Eem
- Staatsbosbeheer (National Forestry Service)
- Other organisations:
 - Milieueducatiecentrum (Environmental Education Centre)
 - Village forum Renkum,
 - Association of the five villages in the Green Area
 - Institute for Nature Education
 - KNNV Wageningen
 - Foundation for Sustaining the Veluwe Brook systems
 - Neighbours of the project area

4.3 Evaluation and decision making

The decision making on the Renkumse Beekdal has been guided by Dienst Landelijk Gebied. The decision making on this project was done after a study and open discussion among national, regional local authorities, NGOs and local representatives. Three scenarios have been proposed:

- Scenario 1: reconstruction as industrial area
- Scenario 2: rearrangement as high quality natural brook valley landscape
- Scenario 3: reorganisation as a green industrial estate

Scenario 1, the industrial estate, would mean a complete rearrangement of the industrial area, removal of asbestos (2 ha), the streams remain in their present unnatural configuration and the Infrastructure has to be improved. There would be space for 22 local businesses and 25 starting business in a multiple business complex

Scenario 2, the recovery of a high quality brook valley landscape, implies the purchase of land 12 ha, removal of businesses (10 ha), soil upgrading, landscaping into a brook valley, restoration of the water system and land transfer to the State Forestry service (that would become the managing organisation).

Scenario 3, the sustainable industrial area, would mean purchase of land (9.5 ha), removal of businesses (10 ha), soil upgrading, landscaping as a brook valley (9.5ha) and the redesign of the industrial area (2.5 ha).

Table 5: Multicriteria scores for the weighting of scenarios for the Renkum Stream Valley.

Weighting Criterion	Relative corrected score			Weight
	Scenario 1	Scenario 2	Scenario 3	
Costs development phase	1,1	-0,6	-0,4	1
Exploitation municipality	-1,5	1,0	0,5	1
Ecology	-0.5	0.4	0.2	1
landscape and perception	-0.5	0.5	0.0	1
Cultural history and archaeology	-0.5	0.5	0.0	1
water and soil	-0.2	0.2	0.0	1
Environment	-0.2	0.2	0.0	1
Commuting costs	-1.4	1.0	0.4	1
Transport costs	-1,4	1.0	0.4	1
House value	-1.0	1.0	0.0	1
Employment	0.0	0.0	0.0	1
Recreational use	-0.5	0.4	0.2	1
Finances municipality	0.8	-0.7	-0.1	1
green image Renkum	-0.2	0.2	0.0	1
Total score	-6.4	5.3	1.1	

In the feasibility study the different scenarios have been weighted on their economic and ecological effects to establish the costs and benefits of redesigning the area and the ecological connection to deliver a tool for the decision making process. A Multicriteria Analysis has been applied resulting in the scores as presented in Table 5.

The conclusion of the evaluation is that with unweighted scoring Scenario 2 would be most positive. This way of working helped to change some of the ideas among the participants who had a preconceived view that nature scenarios would always be more expensive. As scenario 2 was supporting the linkages and the objectives of the NEN a decision was taken at the national level to support the further development of scenario 2 and to make structural improvements in the region that are in place within the context of the region as an area for nature and outdoor recreation.

5 Conclusion and recommendations

The development of the Dutch National Ecological Networks has been ongoing for nearly twenty years. The first five to seven years were mainly devoted to planning at the national level and the elaboration of the mechanisms required for implementation. Only in the last decade has it been possible to realise projects, because funding mechanisms were adapted and the new ideas about networks became known and accepted among other stakeholders and the general public.

Acceptance and cooperation with local and regional organisations appeared essential, especially because nature conservation was not only restricted any more to reserves, but (as a concept) was applied to the wider countryside. It was recognised that it had an added value for the wider countryside, and that the wider countryside is important for maintenance of biodiversity.

Stakeholder participation is considered very important in conflict resolution and in finding optimum solutions. The interviewees consider it important that only those stakeholders who matter should be involved – others can slow down and even stop the process/prevent favourable outcomes.

Limitations of the approach are mainly in the restrictions that are given by the economic functions that are to be fulfilled by the land available. In the case study discussed it is clear that different political and economic situations lead to different decisions. Moreover, knowledge development and scenario analysis can lead to changes in insight in what is profitable for a region and what is not.

What is needed for making decisions is a correct insight in not only the ecological and population dynamics of metapopulation, but also in the societal aspects of ecological networks, its economic services to society and its role for the welfare of local communities. More knowledge is needed in relation to these two aspects in particular.

6 References

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