Green Metropolises
the second year 2002
E. Gerritsen, C.B.E.M Aalbers, V. Simeonova & W. Timmermans
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This is the second report on the Green Metropolises research programme. The programme, which runs for the period from 2001 to 2004, was commissioned by the Dutch Ministry of Agriculture, Nature Management & Fisheries and is being implemented by Alterra and the Dutch Agricultural Economic Research Institute (LEI). It examines issues relating to ‘green space in and around towns and cities’ as well as the role of green space in Delta Metropolises.
Urbanisation in the Netherlands

For centuries, the Netherlands was a country of swamps, forests and wasteland, interspersed with towns situated on the higher grounds along the trade routes. The natural area between the towns have been gradually cultivated since the nineteenth century. Infrastructure has been greatly improved especially after World War II: even the most remote paths have now been paved. In the 1970s, the urban population started to discover the countryside, and many of them have now settled in and around villages. All this has greatly altered the image of the Netherlands: it is no longer an open, rural country with a number of towns and cities, but rather a highly urbanised metropolitan landscape with some remnants of rural areas.

The policy document called Stadslandschappen (urban landscapes), published by the Dutch Ministry of Agriculture, Nature Management and Fisheries in 1995, was the first government document to recognise this new phenomenon. The document notes the drastic changes occurring in Dutch rural areas, which mean that they have long ceased to be the areas where traditional methods are used to produce food in such a way that a natural countryside with abundant wildlife is created. At the same time, however, the urban population expressed a growing demand for such natural areas, as well as for recreational facilities and a comprehensive set of services. In addition, rural areas have become increasingly fragmented as new residential and industrial estates and heavy infrastructure were built. The traditional rural areas, where food is produced in a tranquil environment, are rapidly disappearing and changing into busy places where city dwellers come, sometimes in large numbers, to ‘consume’ green space, wildlife, the landscape and home-grown produce. Thus, the production landscape is developing into a consumption landscape. This development, and questions like whether it is desirable and whether it could still be reversed, occasionally spark off fierce public debate.

The City & Countryside (Stad Land) research programme (1997 – 2000)

The City & Countryside (Stad Land) research programme was carried out between 1997 and 2000. The programme focused on ways to address the problem of the increasing pressure imposed on green space by the process of urbanisation. Several projects examined the role of the various actors in the relations between city and countryside. As yet, city and countryside still represent two separate worlds, which is reflected in research being divided into rural and urban sociology and in the existence of separate ministries for Agriculture, Nature Management & Fisheries and Housing, Spatial Planning and the Environment. Another category of research projects examined possible scenarios for the future, based on sustainability, people’s wishes and particularly the growing demand for green housing. New planning strategies were developed, focusing on sustainability and ecology and aiming to find ways to integrate wildlife in major urban projects, and to assess the value of large rural remnants in the metropolitan landscape. Other research looked into topics like a more diversified agriculture tailored to the needs of the towns and cities, urban green space, fragmentation of green space and conservation areas by infrastructure, and the need for recreation among the urban population. Although at first, much of the City & Countryside research consisted of desk studies commissioned by the Dutch Ministry of Agriculture, Nature Management & Fisheries, it was gradually found that other ministries, local authorities, societal organisations and market parties were also interested in the programme’s projects. Whereas the focus was initially on knowledge questions, it gradually shifted to process questions, such as how the various potential commissioning agencies, each with their own perception of and interests in the relation between city and countryside, can work together in one
project. This question set the tone for a follow-up pro-
gramme called Green Metropolises (2001 – 2004), on
which this book reports.

The Green Metropolises research programme
The Green Metropolises research programme carries on
where City & Countryside left off. It concentrates on
research using the so-called delta approach, and involves
collaborating experts from various disciplines, such as
administrative science, sociology, ecology and spatial plan-
ing. Its research tries to contribute to innovations in the
relation between city and countryside, based on the view
that real innovations arise where policy-making, research,
market parties and various organisations in society collabo-
rate. This means that the programme’s research is being
implemented in a complex and dynamic setting. Desk stud-
ies have become rare, and there is nearly always more than
one commissioning agency. These commissioning bodies
also exert a greater influence as they are consulted, join the
debate or provide part of the funding. An ever increasing
part of the research effort focuses on defining and co-ordi-
nating the various requirements and interests of the many
commissioning parties participating in various case studies.
At the same time, these commissioning bodies themselves
are often the objects of research. The projects try to estab-
lish the differences and similarities between the various
interests, their co-ordination and the crucial considerations
on which green space decisions are based. Data collection
increasingly concentrates on process data.

International Collaboration
The Dutch green metropolis is of course not a unique phe-
nomenon in the world: similar green metropolises are also
developing in other countries. And the process of increas-
ing urban pressure on rural areas is also happening in other
countries, albeit at a lower scale. In addition, since much of
the rural areas policy is now being drawn up at EU level,
researchers of the Green Metropolises project are involved
in various international collaborative projects. Such projects
concern topics like communication about urban green
space, the relations between cities and agriculture, urban
ecology and the planning of delta metropolises. The pres-
ent book is intended to support these collaborative proj-
ects. It highlights the various types of expertise on green
space in metropolitan areas that are available at Alterra,
and discusses Dutch and international projects on co-ordi-
nation problems at the urban-rural interface, the relation
between cities and agriculture, wildlife and the city, water
in cities, infrastructure, the quality of green space in metro-
politan areas, and green housing in metropolitan regions.
The book tries to provide a basis for an exchange of know-
ledge on the relation between city and countryside and on
the function and importance of green space in metropolises.
City and Agriculture
Video ‘When cities and agriculture meet’

Ing. G. Kolkman

Problem
What perception do city dwellers and country dwellers have of each other in our changing society? What have they got to offer one another?

Objective
Producing a video presentation to outline the relations between cities and agriculture from various perspectives, which could facilitate and promote the debate on these relations.

Approach
The introductory question to the video is: ‘Cities are expanding, and city dwellers are demanding more and more space. They want to live in a green setting and want to engage in leisure activities in newly created wildlife areas. Commercial estates and the ever-expanding infrastructure also demand their share of the available space. Farmers, the traditional residents and users of rural areas, are being squeezed out. Will farmers grasp the opportunities cities offer them or will they emigrate?’

As a spin-off of the video, Alterra organised a special day in November 2000, at which some thirty farmers, city dwellers, planners and administrators discussed the above question. The meetings were filmed, and some more footage was shot at participants’ own homes.

Results
A 20-minute video called ‘When cities and agriculture meet’ about relations between city and country dwellers, emphasising the transitions between urban and rural areas. The video can be used to disseminate information and to give people a clear impression of the problem of urban versus rural areas. It can form the basis of debates on rural areas planning, changes in zoning schemes, reconstruction, green housing and renovation of rural areas near cities, that is, on all situations where a new relation is being sought between residents and users in the transitional zone between urban and rural areas. It can also be used in training sessions, courses, schools and meetings.

Follow-up
The video is in great demand among a wide audience, ranging from ministries, provincial and local authorities to schools.
2002 Sustainable City Conference, Segovia: workshop on Agriculture and the City

Drs. W. Timmermans

Problem
In 2002, the Wessex Institute of Technology organised its second conference in Segovia (Spain). The conference theme was The Sustainable City, and scientists, policy-makers and technology consultants exchanged information and views about this theme. At the conference, Alterra organised a special workshop to discuss the role (or potential role) of agriculture in the sustainable city.

Objective
The aim of the workshop was an exchange of information and views on the basis of projects from various parts of the continent, with the aim of highlighting the potential role of urban agriculture for the world’s cities.

Approach
Experts from the Netherlands, Mexico, France, Germany, Ghana, Venezuela, the United States and Portugal were invited to take part in the workshop. Their presentations discussed projects that have been, or are still being, implemented in various countries in Europe, America, Africa and Asia.

Results
The abstracts have been made available through the websites www.stadenlandbouw.nl and www.groenemetropolen.nl. The full text of the presentations has been published in the conference proceedings.

Follow-up
The WITPress publisher of the Wessex Institute of Technology has invited the group to contribute a scientific publication on the topic of the workshop to its Advances in Ecology series
Problem
Near the town of Delfgauw, a green enclave has persisted amidst the dynamic urban environment. The enclave could retain its current functions – for those who live in it as well as for the town’s residents – if it has the necessary strength to keep urbanisation at bay. The area is part of a zone of green space and water. The main question is what perspectives the concept of Farming for Nature has to offer for the strengthening of this ‘green-blue’ zone. How could the area’s role as an element of quality in the urban area be assured for the longer term, and can its links with the town be upgraded?

Objective
In addition to providing answers to the above questions, the project also aims to produce wider spin-offs and learning experience. The project’s interactive elements are particularly focused on this learning experience.

Approach
The project concentrates on the land owned by Jan Duijndam, situated in the agricultural enclave known as the ‘Polder van Biesland’, in the midst of the urban area encased by Delft, Den Haag and Pijnacker-Nootdorp. The project is being implemented jointly with a project group consisting of a farmer, a volunteer from a conservation society, a representative of the Dutch Ministry of Agriculture, Nature Management & Fisheries (LNV) and a representative of the provincial authorities. Other parties involved include sponsors, administrators, Staatsbosbeheer (the Dutch forestry commission), the District Water Control Board, other farmers and EU authorities. In the context of a number of general questions about Farming for Nature, contact has been established with LNV’s working group on farming for nature, especially as regards issues like funding or the consequences of EU policies. By now, even more parties than originally planned are involved.

Results
The project is to result in a feasibility analysis of the opportunities of and barriers to implementing the concept of farming for nature in this urban area. The product is a document that is sufficiently concrete to allow it to serve to attract funding and influence decision-makers at various levels.

Follow-up
The Farming for Nature pilot study has yielded some practical results, with considerable impact on the policy-making process. Even at this early stage, it has secured the involvement of all directorates of the Dutch Ministry of Agriculture, Nature Management & Fisheries, the provincial authorities, the District Water Control Board and municipal authorities.
Problem
How can agricultural activities be combined with various types of social care, e.g. for the elderly, the handicapped, etc.?

Objective
Developing a planning design for the ‘de Hoge Born’ country estate, with the specific object of getting social service organisations to collaborate on a new concept for combining farming and care activities.

Approach
The approach involves interactive planning development: a number of regional social service organisations were invited to take part in a design workshop, allowing them to exchange views and ideas. While a core team combined three scenarios into a plan of action, a number of researchers started a workshop to link the research options with the estate.

A business plan is being developed in consultation with the various parties that will be working on the estate. The main aim will be an exchange of knowledge about combining farming and care activities, followed by attempts to link theoretical knowledge and practical experience in an actual pilot project.

Results
There have been two workshop sessions, whose results have been reported in writing as well as through photographs. A plan of action has been drawn up and preparations are being made to set up an implementation team that is to design and implement the ‘Hoge Born’ estate.

Follow-up
The collaborative project is to result in the creation of an ‘expertise centre on farming and care’ on the estate. The implementation of this project is to be assisted in terms of applications for and implementation of research activities, as well as being studied and supervised by means of monitoring. New research topics within the project and at the expertise centre will be addressed jointly with the various parties involved.
Problem
A joint grant application for the PULSE (Peri-Urban Landscape Scenes) is being prepared by partners from the UK, Germany, France and the Netherlands, under the European Commission’s Interreg IIIB Programme. The project asks the question how various countries deal with the peripheral zones around conurbations.

Objective
PULSE’s objective is to develop strategies to contribute to the conservation of healthy urban peripheries that allow economically and ecologically sound agricultural activities, recreational facilities as well as wildlife and landscape opportunities.

Approach
Dutch municipalities interested in joining the project include Amersfoort and Leidschendam-Voorburg. The lead partner is the Dutch Government Service for Land and Water Management (DLG), while Alterra has developed the initiative.

PULSE can be defined as an action project involving targeted investments to stimulate the multifunctional utilisation of the town-countryside interface by both urban and rural populations. In 2002, the various partners have been working on a common, “transnational” and innovative action programme, which appears to stand a good chance of being allocated funding by INTERREG’s programme supervisors. They will decide in the summer of 2003.

Results
The PULSE project is expected to result in:
- a common set of strategies for the urban periphery that would allow problems to be solved in a sustainable way and to the satisfaction of all involved;
- a specification of the concept of ‘Peri-Urban Landscape Scenes’ as a zone that is attractive for both urban and rural populations to visit or to work in;
- a linkage between the various sectors (agriculture, recreation, etc.) and administrative strata involved (public-private schemes);
- methods to render residents conscious of the landscape qualities of their immediate environment.

Follow-up
The project links the European level with the local town- and countryside level (in top-down as well as bottom-up approaches) and bridges the gap between planning networks and local investors. Practical project experience should allow participants to influence the European level.
Urban biodiversity
Ecology in the Waalsprong project

Ir. R.P.H. Snep

Problem
Predicting the ecological consequences of three planning variants for the Waalsprong project area and comparing predictions with the current situation.

Objective
A clear assessment framework is to be used to predict the effects of three planning variants on the quality of wildlife in the area, relative to the default situation. The assessment is to be undertaken in view of the urban development plans for the Waalsprong area.

Approach
The assessment was based on topographic images of intended vegetation types, linked to ecotypes characterising the abiotic conditions. Effects at population level were modelled by selecting a number of indicator species that illustrate the ecological coherence as well as the quality of wildlife in the future residential district. The LARCH expert system was then used to assess the long-term chances of survival of populations of these indicator species in the urban area and the permeability of the urban structure for species involved in the National Ecological Network (EHS). The indexed findings were then used to test the effects of the three variants on the indicator species. The emphasis is on the ‘spatial coherence’ of ‘model ecosystem types’ and the corresponding target species. An analysis of this spatial coherence is expected to reveal potentials, opportunities and bottlenecks, which can be used to provide recommendations for the design, implementation and management of the various residential districts.

Results
The project is to result in a report on the effects of the three urban development variants and wildlife quality in terms of ecological coherence and the survival of important species and valuable biotopes. This should also contribute to the development of the expertise needed to assess urban planning developments in terms of the quality of wildlife both inside and outside the actual planning zone, at local and regional levels.

Follow-up
The report will be part of the Waalsprong Environmental Impact Statement and will as such be used in the decision-making process on this new urban district. Further research is planned for 2003.

Commissioned by | Nijmegen municipal authorities.
Contact person | Ir. R.P.H. Snep | Phone: +31 317 477946 | E-mail: robbert.sneep@wur.nl.
Problem
This project relates to the ‘Waalsprong’ urban planning project near the Dutch town of Nijmegen, and concentrates on the following questions: ‘Which parts of the area house protected plant or animal species?’, ‘Can any damage to populations be avoided by means of mitigating and/or compensating measures?’, and ‘Does knowledge on the distribution of ecological values allow a pro-active approach to be used in planning?’.

Objective
The project’s aim is to prevent damage to populations of protected plant and animal species and to enhance ecological values in the area where the Waalsprong district is being planned.

Approach
The study involved:
• a careful census of plant and animal species;
• interpretation of the relation between the distribution of such species and valuable landscape elements;
• specification of the ecological infrastructure in terms of habitat networks.

Results
The results include:
• a survey of species found in the area and listed as protected under the Dutch Flora and Fauna Act (in tables and distribution maps);
• an estimate of the probable or possible presence of species listed as protected under the Dutch Flora and Fauna Act that were not actually observed during the census project, but whose presence seems likely on the basis of auto-ecological and distribution data;
• a survey of mitigating and compensating measures;
• building blocks for a pro-active policy in terms of strengthening or providing basic elements for habitat networks.

Follow-up
Future conservation activities will take into account the presence of protected plants and animals, by preserving and strengthening ecological values in further planning. The municipal authorities will be assisted in preparing applications for exemptions to the Flora and Fauna Act.
Urban ecology at international level

Ir. R.P.H. Snep

Problem
Urban planners, designers of public green space and national and local policy-makers all feel the need for knowledge relating to urban wildlife. Although studies of urban wildlife are being conducted in many European cities, there is as yet no platform where urban ecologists can exchange knowledge and views. As a result, the knowledge available in the various countries is not being fully utilised, and knowledge gaps are insufficiently recognised.

Objective
The project aims to survey current international research on urban wildlife, which would allow citizens, policy-makers and urban planners to obtain the appropriate information.

Approach
Alterra has started to set up an international network that would allow urban ecologists to present their research, exchange knowledge and views and develop joint projects. The network is being developed with the help of existing contacts, international publications and conferences.

Results
Two concrete results have been achieved. An English-language, web-based platform for urban ecologists has been established. This platform, called ULE (www.yahoogroups.com/urban_landscape_ecology), now includes over 170 ecologists from all continents. It is used for debates on topics like the function of open ground in cities or urban green structures, as well as to announce conferences and symposia and to publicise books and papers. In addition to this platform, a select group of researchers, policy-makers and practitioners submitted a research proposal to the EU in 2001, entitled ‘Green Networks in Cities’ (Greennet-City). The proposal was initiated by Alterra and worked out with the help of renowned researchers from Britain, France, the Czech Republic and Finland. In all, fifteen European partners joined in the submission.

Follow-up
The ULE international platform for urban ecology is still operative and performs its network functions most adequately. Participation in ULE ensures that current themes in urban ecology are rapidly picked up, that valuable contacts are being made and that knowledge is being exchanged. The members of the Greennet-City project group have expressed their intention to keep in contact and to use any new opportunities that might arise to submit a new research proposal, which might lead to joint projects in the future.
The Ecological Skyline: integrating urban wildlife in architecture

Drs. W. Timmermans

Problem
The Netherlands is part of the Delta Metropolis, roughly encompassing the area between the Dutch Randstad region, the German Ruhrgebiet and Flanders. Rural zones within this metropolitan area are being increasingly affected by urbanisation, resulting in threats as well as opportunities for its green space. Whereas the ever denser network of intensively used infrastructure means that conservation areas are becoming increasingly fragmented, a new, characteristic type of urban wildlife is developing in many places.

As yet, the presence of such urban wildlife is haphazard, with species managing to establish in unexpected, often deserted and obscure locations. Could housing projects and office blocks be designed in such a way as to allow urban wildlife to be deliberately integrated in urban architecture?

Objective
Specific practical cases are to be used to explore how urban wildlife can be integrated in architecture.

Approach
Ideas developed so far have been submitted to ambitious property developers and architects. This has led to requests to participate in contests (for developers and architects) as well as in the actual development process (by property developers). As a result, Alterra is now actively involved in the planning of a number of projects.

Results
The history of this project was described in the 2001 Green Metropolises interim report. In the meantime, plans for the use of green elements have been developed for the De Loodsen project and a housing project in Amsterdam. The plans were worked out by the DS firm of landscape architects, partly based on a programme of requirements for architecture and ecology drawn up by Alterra.

Research is being done at various locations into opportunities to counteract the fragmentation of green space near cities by national infrastructure, using a combination of urban development and green bridges with offices built on top of them (‘kantoorducten’ in Dutch).

Meetings to exchange information about similar projects are being organised as part of the Habiforum network called Natuur Overwegen (considering nature).

Follow-up
The Second Green Space Structure Plan (Structuurschema Groene Ruimte II, SGR2) calls for new combinations of wildlife and architecture. The above project approach results in plans being developed, and a number of projects have been implemented. This allows us to assess what factors decide whether a project will be successfully implemented or not.

Collaborating partners
De Loodsen project: Köther & Salman architects | DS landscape architects | Woningbedrijf Amsterdam | Moes Bouwbedrijf property developers | Interheem project developers. Kantoorducten: Dura Vermeer project developers | West 8 | Almere municipal authorities. Natuur Overwegen network: Habiforum | Rotterdam public works department | Ministry of Transport | Public Works and Water Management. Contact person | Drs. W. Timmermans | Phone: +31 317 478702 | E-mail: wim.timmermans@wur.nl.
Urban peripheries as a source of urban wildlife

Irr. R. P.H. Snep

Problem

Urban wildlife is often under intense pressure: maintenance is expensive, space is a scarce commodity and intensive use leads to poor quality. At the same time, urban wildlife is very important, not only for the plants and animals themselves, but also for humans. Wildlife at the interface between cities and their surrounding countryside might help to achieve quality in urban wildlife. However, very little is known about wildlife interactions between cities and their surroundings. The key question is: Can urban wildlife quality be improved by utilising ecological input from urban peripheries?

Objective

To study the ecological relations between central and peripheral urban areas, and the role played in these relations by green structures, in order to develop a clear idea of the way ecological input from these transitional zones between cities and their surrounding countryside peripheral areas can help improve urban wildlife quality.

Approach

Insights and principles from landscape ecology, the Small-steps simulation model and fauna data from the Hoogvliet case study area have been used to simulate the ecological relation between central districts in the Rotterdam borough of Hoogvliet and its peripheral transitional zones, focusing on butterflies. The simulation was based on data obtained from literature research and from the Vlinderstichting (butterfly study association). The model outcome has been analysed in more detail in a GIS environment.

Results

The simulations showed that habitat development in the transitional zones around cities can indeed contribute to greater wildlife quality in the central districts. Whether individuals are able to colonise the centre from the periphery depends on the species’ dispersive capacities as well as on the opportunities for exchange offered by the urban landscape. Green elements like roadside verges can have a major function in this respect. Habitat development in the urban periphery can in some cases result in a 50% increase in the number of individuals of a particular species in the central districts.

Follow-up

The research project is yielding insights which are sufficiently interesting to warrant publication of its findings and methods in national and/or international journals. In addition, the method will be applied in various settings, allowing the model instruments to be further refined.
Perception study on communal gardens

Dr. A.E. van den Berg

Problem
Studies into people's housing wishes continue to show that the majority of those seeking housing in the Netherlands prefer a house with a garden. Recently built residential districts are often characterised by high-density building, leaving little or no room for private gardens. Could the use of communal gardens offer opportunities to achieve attractive leafy residential areas with efficient land use?

Objective
The objective is to answer the following questions:
- Which groups of people seeking housing would consider communal gardens to be an acceptable or attractive alternative, and for what types of housing, in what price range, would they be suitable?
- How should communal gardens be designed, implemented and managed to meet the wishes of the various groups of people seeking housing?

Approach
After preliminary literature and field studies, extensive interviews were held with a limited number of residents of houses with existing communal gardens. The findings were used to distinguish hypothetical target groups, after which communal gardens were designed to suit the specific wishes of each of these target groups. A computerised questionnaire was used at the Floriade horticultural exhibition to test the hypothetical target groups and the corresponding garden designs.

Results
Various target groups for housing with communal gardens can be distinguished on the basis of psychological motives. Although these target groups were found to be relevant in terms of people's perception of communal gardens, it was not possible to characterise them clearly on the basis of socio-demographic features. It was possible, however, to link the target groups to aspects like their interest in communal gardens, their underlying reasons for wanting or not wanting a communal garden and their wishes in terms of the design and management of such gardens.

Follow-up
A communication plan has been drawn up in consultation with the commissioning agencies. The report on the project will initially only be available to the commissioning agencies, although a brochure will be produced to inform local authorities about the study.

Commissioned by: Dura Vermeer property developers | SFB Vastgoed property managers and the Dutch Ministry of Agriculture | Nature Management & Fisheries.
Contact persons: Dr. A.E. van den Berg | Phone: +31 317 474933 | E-mail: agnes.vandenbergen@wur.nl | Ir. S. Blok | Phone: +31 317 474655 | E-mail: sylvia.blok@wur.nl | Ir. L. Schöne | Phone: +31 317 474402 | E-mail: lon.schone@wur.nl.
The NISSIN Idea Generating Machine

Drs. W. Timmermans

Problem
The ‘NISSIN Idea Generating Machine’ project group seeks to generate ideas to illustrate that green space and urban space are not necessarily mutually exclusive elements. The close ties between urban areas and wildlife can be beneficial to both. Innovative green elements can produce quality at a range of scale levels (building, district, town, region) and altitudes (ground level, balconies, bridges and roofs). Now that interaction between urban areas and wildlife is intensifying, it is time to assess how both could benefit from the confrontation.

Objective
There is a fourfold objective: (1) generating creative ideas, (2) drawing up a policy-making agenda, (3) increasing public support and (4) stimulating the implementation of the NISSIN concept to improve interrelations between urban areas and wildlife.

Approach
The Idea Generating Machine is a process of ‘creative learning’, aiming to forge links between relevant parties and resources on the one hand and creative ideas and knowledge on the other. The programme will run for two years, and involves:
- making available knowledge, new ideas and practical experience;
- study trips to model projects in Germany and France;
- research into factors determining success and failure using examples from the Netherlands and elsewhere;
- arranging meetings between the various relevant parties and knowledge disciplines;
- organising debates and dialogues with architects, ecologists, historians and philosophers.

Results
The plan of action was drawn up at a 2002 conference at Werkstatt Wenndorf. Collaborating parties include Alterra, MattonOffice and the Almere and Rotterdam authorities, while consultations are being held with the Groningen provincial authorities. The emphasis in 2003 will be on meetings between various parties and disciplines involved. Debates and dialogues are being organised in a bus that has been converted into a ‘conservation area’.

Follow-up
The results produced by the Idea Generating Machine will be made available via a website www.alterra.natuurindestedenindenatuur.nl, as well as through various publications, public events and conferences.
Highways made interesting

Jr. M. Brinkhuijsen

Problem
Highways generally have an unfavourable image. They impact on the environment, and motorists travelling on them get an unattractive view of the countryside. Would it be possible to come up with a different design programme for the highway world, making it more interesting?

Objective
The highway and its surroundings are not two separate worlds; they interact, which means that the highway design programme does not stop at the edge of the asphalt. The motorists’ perception can only be improved by including the areas around the roads in the design process. The project therefore tries to define an approach that could lead to a ‘total design’, yielding highways that offer many exciting possibilities.

The project tries to bridge the gap between the fast world and the slow world. Mere map-fitting, mitigating and compensating is no longer enough. The quality of green space could benefit from a more comprehensive approach to the relation between highways and their surroundings.

Approach
The Mecanoo Architects agency is studying perceptions of the highway, including its verges. In an attempt to assess opportunities for collaboration, Alterra is engaged in a parallel study of the surrounding areas. Alterra has collaborat-ed with Hans Snijders of the Aura urban design agency to develop a spatial concept focusing on the relations between roads and their surroundings.

Results
Roads in the Randstad area (the area enclosed by Amsterdam, The Hague, Rotterdam and Utrecht) were used as an example to outline an alternative approach to planning and design. Alterra has produced a visual essay introducing a range of different perceptions, based on the interaction between highways and their surroundings.

Follow-up
The visual essay was one of the products of the process of developing new spatial concepts for infrastructure and green space. These products help to expand Alterra’s involvement in infrastructure projects and to give it a role in the planning and design debate on infrastruc-ture and land use.
Moving waters and moving waterfronts at Knooppunt Arnhem Nijmegen (KAN)

Drs. W. Timmermans

Problem
The project management office for the region between the towns of Arnhem and Nijmegen (known in Dutch as Knooppunt Arnhem Nijmegen, or KAN) has asked Urban Unlimited (www.urbanunlimited.nl) to develop a general plan for the KAN area. Urban Unlimited has tried to find interregional and cross-border opportunities by looking at six themes:
1) Leisure and Shopping;
2) Art and Identity;
3) Health Care and Reflection;
4) Moving Waters and Moving Waterfronts;
5) Mobility Patterns;
6) Developing plans for residential and business districts.

The project examines opportunities to prevent large-scale mono functional technical interventions in the KAN area, and tries to develop ideas that should improve the quality of the area in terms of housing, recreation and wildlife.

Approach
Options to deal with possible floods have been investigated, resulting in a range of proposals, such as emergency flooding zones, temporary retention basins, green rivers and the removal of obstructions near the towns of Arnhem and Nijmegen by moving back dikes, combined with urbanisation schemes.

In addition, various key officials in local councils and other administrative bodies involved have been interviewed, in order to provide an overview of possible solutions and of the various interests concerned. This information has been used as the basis for three workshop sessions, on regional planning options, technological problems and opportunities for farming. The theme of farming was added on the basis of the outcome of the interviews, since this revealed a great need for guidance as to the possible role of agriculture for towns and villages.

Objective
The KAN area has a crucial role to play in current attempts to reduce flood risks along the rivers Rhine, Waal, Meuse and IJssel, as it is situated at the origin of the delta formed by these rivers. It seems inevitable that flood control measures will be taken in this area, which may result in a conflict between the demand for further urbanisation and the increasingly realistic flood risk.

Follow-up
The further specification of the planning document into a structure plan will continue to take account of the relation between urbanisation and the management of the large rivers, as well as the relation between urban areas and agriculture. River management and farming policy have been put on the urban development agenda.

Results
The 2003 planning document for the KAN urban network has provided an agenda and a first step towards a new structure plan for the area. Debate on the issue of what measures will need to be implemented on and near the rivers has only just started. The opportunities provided by agriculture as a carrier for recreational options for residents of towns and villages have been highlighted and put on the regional agenda.
Sustainable urban water management

Drs. V.H.M. Kuypers

Problem

Water management, including that in urban areas, is currently a highly topical subject in the Netherlands. Various methods are being used at a range of locations in the Netherlands to design sustainable urban water systems. Some of these methods are applied at the design stage of new building projects, others as a part of urban renewal or the development of a municipal water plan. But what are the differences between these methods? What can we learn from the various approaches in order to improve current practice? The key question is: What is the best way to design urban water systems?

Objective

Developing a methodology for designing sustainable urban water systems using manageable concepts, simulation models, policy instruments, spatial principles, interactive models and target images. The methodology could include both strategic and operational aspects of water management.

Approach

The study is being conducted by the DuSWat project, which is part of the Delft Cluster working programme on integrated water management (Werkprogramma Integraal Waterbeheer). This programme combines the knowledge available in various water management institutes in Delft and other locations in order to gain more in-depth knowledge.

The core element of the research project is a comparative study of various approaches:

- the target image approach, which starts by formulating operational goals (target images) and indicates in a plan what steps should lead to the achievement of these targets;
- the guiding principle approach, in which strategic concepts (guiding principles) guide the planning process, while concrete targets are only formulated during the operational stage;
- the process approach, which starts by setting up the decision-making process and develops strategic and operational targets in later stages of the planning process.

Results

The final result is a methodology that can be used to draft plans for the management and design of urban water systems.

Follow-up

It is hoped that planners, designers and managers working for local authorities will actually use the methodology developed in the project.
Urban water and urban wildlife
for Almere-Poort noord

Ir. G.E. Blom

Problem
Converting ambitions for urban water and urban wildlife elements for the Almere-Poort noord area into a planning programme.

Objective
The study aims to introduce the Urban Water and Urban Wildlife themes into the exploratory designs for the structure plan, in such a way as to allow sustainability, utilisation and perception (in terms of consumers’ wishes) to be integrated in a balanced and differentiated way in the plans for the Parklust, Waterrijk and Pampus-Hout districts.

Approach
Together with the Almere municipal authorities, Alterra has specified the ambitions for urban water and urban wildlife – as formulated in the Almere-Poort structure plan – into a planning programme to be included in the policy document outlining the planning principles for the Almere-Poort noord area. The following procedure was used. After the principles and ambitions for urban water and urban wildlife had been inventoried, two workshops were organised, involving Almere officials as well as external experts. At these workshops, the various conditions and principles and the possible structure and ideas for the various systems were discussed and specified on a planning map. Alterra then used this input from the various actors to design ‘building blocks’ to supplement existing views on the Almere-Poort noord system of green space and water elements. These building blocks were based on the Ecopolis (sustainable city) strategy, which tries to achieve quality in terms of flows, areas and actors. Water and traffic flows create the conditions for quality at a particular location. Sustainable planning, design and management can be used to create enjoyable locations. Sustainable utilisation and management of a location depend on the appreciation and behaviour of the actors involved.

Results
The project is to yield ‘building blocks’ for a sustainable system of water and urban wildlife elements for the three districts Parklust, Waterrijk and Pampus-Hout in the Almere-Poort noord area. The collective process by which the steering group is trying to produce these building blocks can itself also be regarded as a result.

Follow-up
The Almere-Poort noord steering group is preparing a policy document stating the principles for a structural development planning for the area, using the building blocks that have been developed. In addition, the Almere-Poort noord project can serve as a practical model for other local authorities that aim for sustainable urban development.
Spatial planning concepts
Planning on Principle: the Strategy of the Two Networks Revisited

Ir. C.B.E.M. Aalbers

Problem
In its advisory report on the Fifth National Policy Document on Spatial Planning, the Dutch Social and Economic Council (SER) pointed out that there is a need for a strategic view of spatial planning in the Netherlands, which could link three strata: the physical stratum of soil and water, the stratum of infrastructure networks and the stratum of occupational patterns for living and working. How can these strata be linked?

Objective
The project aims to highlight and develop a strategic view, called the ‘Strategy of the Two Networks’ (S2N) that could function as an organising principle to interlink the physical stratum with those of infrastructure networks and occupational patterns in spatial planning in the Netherlands.

Approach
S2N offers an organising principle for spatial planning, provides functional coherence – in keeping with the strata approach – and structures land use. It uses water systems and traffic infrastructure as the main guiding carriers, which could be linked to, respectively, ‘slow’ functions such as wildlife, water extraction and quiet recreation and ‘rapid’ functions like industrial estates, the service industry and mass recreation. Housing would be developed in zones going from open and green to compact and urban, as such occupying an intermediate position between the two networks.

Results
The project outlines the merits of the S2N strategy by having five sample projects and studies analysed by people closely involved in them. The outcomes of these analyses are being published in a richly illustrated book, in which they are transformed into a list of ten action priorities for the further development and application of the strategy. Some of the recommendations include:

• drawing up mobility profiles for ‘rapid’ and ‘slow’ functions;
• developing a set of instruments to test integrated and sustainable spatial quality;
• exploring the merits of creating a ‘traffic board’ as a new administrative organ, modelled on the water boards;
• initiating a planning process involving a programme of research and design studies into the relevant flows, areas and actors.

Follow-up
Practical experience with the use of S2N has taught planners, designers and local, provincial and national administrators how to work with the strategy. The list of ten action priorities shows policy-makers how they can promote the use of S2N.

The book is being published in Dutch and in English, since interest in the strategy has also been expressed outside the Netherlands. The European Commission is worried about a possible lack of balanced spatial development in Europe after the planned expansion of the Union, which could result in a distinction between very prosperous areas and areas lagging behind and failing to catch up. S2N is able to support the debate in terms of spatial development and the specific tasks of governments. It can show how the rapid and slow networks can provide functional differentiation and high-quality environments.

Commissioned by | The Dutch Ministry of Agriculture, Nature Management & Fisheries.
Contact persons | Ir. C.B.E.M. Aalbers | Phone: +31 317 47 87 13 | E-mail: carmen.aalbers@wur.nl
Ir. J.F. Jonkhof | Phone: +31 317 47 87 14 | E-mail: jos.jonkhof@wur.nl
Public debates at the Floriade 2002
horticultural exhibition
Ing. E. Gerritsen

Problem
Tensions between collective interests like tranquillity and green space and individual demands made on the available space for housing, jobs and mobility require creative solutions. It is in the government’s own interest that its policies are not just theoretical constructs, but have their effects in society. Policies can only be implemented if they are supported by the public. But what exactly does the public want? What are the requirements for a landscape that is valuable to everyone, for housing, work, sports or relaxation?

Objective
Assessing Dutch people’s wishes with regard to the environment in which they live, in order to improve the effectiveness of spatial planning policies.

Approach
Public debates on the city & countryside theme have been organised, allowing authorities, policy-makers, managers, researchers, interest groups and private citizens to exchange views on the role of green space in an urbanising country like the Netherlands and on people’s wishes in terms of this theme.

The public debates were held on 24, 25 and 26 September 2002 at the open-air theatre in the grounds of the Floriade horticultural exhibition near the town of Haarlem. They were preceded by a telephone survey among people living either in the centre of a town or city or in a rural village setting. The information obtained from this survey was supplemented with the findings of another survey, held among Floriade visitors on the three days on which the public debates took place. The outcome of these surveys was used in the public debates. Two 90-minute debates were held on each of the three days, with different audiences and panel members. Debates on the first day related to the theme of ‘Wildlife in the city’, those on the second day to ‘Green housing’ and those on the third day to ‘Cities and agriculture’.

Results
The results were three lively days of debate, which were also covered by the media. The findings of the telephone survey and the survey among Floriade visitors have been summarised in a report. In addition, journalist Marcus Werner prepared a professional report on the public debates, which, together with the article ‘Publieksdebatten: past dat ergens, de stem van het volk?’ (‘Public debate: is there room for people’s views?’), by R. de Rutte & E. Gerritsen, 2002) was published as a brochure. The brochure was distributed through various channels.

Follow-up
The Floriade public debates were intended as a first step towards using public debates as an interactive instrument in the social and policy-making debate. Since this experiment has proved successful, the instrument is to be used more often as a research method in the near future.
Follow-up
Political and social developments have led to changes in policy which have forced us to rethink the programme of experiments. Depending on further policy changes in 2003, opportunities for including a ‘learning-by-doing’ programme in the green Housing project will be studied.

Results
Green housing is producing spin-offs across the board. Its 2002 activities have affected various other projects, with particularly favourable effects on regional scale projects. The project is characterised by a broad, multidisciplinary scope.

The Green Housing Network has initiated a debate on the need for a useful definition of green housing. Do the green housing categories defined in government policy documents like the Fifth National Policy Document on Spatial Planning meet the requirements? Would a broader relation with the various landscape form a better point of departure? And if a definition were available, what would be its function: developing a better policy framework? These are the questions which are inspiring ideas for the 2003 project activities.

Problem
As PhD student Saskia Heins has found in her research, Dutch people like living in a rural type of environment. Previous Alterra studies had found a similar trend, but with respondents also expressing a preference for living close to towns! Green housing has become a prominent topic on the policy-making agenda. The 2001 green housing catalogue (Catalogus Groen Wonen) illustrated that numerous green housing projects were already available or being planned in the Netherlands, which are highly valued and have proved assets to the landscape. The public’s perspective on the concept of green housing is still a key issue: is it an insidious process of urbanisation of rural areas, or does rural areas development require new types of land use anyway, to which housing can make an innovative contribution?

Objective
The Green housing project tries to clearly reveal the power of green housing as a concrete, practical policy-making strategy that can solve many problems.

Approach
The 2002 activities of Alterra’s Green Housing project focused on the programme of green housing experiments, with individual sub-projects always being assessed in the light of their contributions to the programme of experiments. There was a continuing emphasis on facilitating local experience, rather than on designing regulations or supervisory frameworks.

Alterra has been asked to contribute to the efforts to answer policy questions, to the organisation of meetings of the Green Housing Network on current policy themes and to the organisation of a field trip abroad. Green Housing 2002 was supervised by the Green Housing network, which functioned as a sounding board.

The Green Housing Network has turned out to be a major interactive instrument to initiate knowledge exchange and to provide a theoretical basis for practical policy-making on green housing. Promotion and supervision by the Green Housing network allows specific projects to be initiated and designed. The network includes not only the Ministry of Agriculture, Nature Management & Fisheries (LNV) and that of Housing, Spatial Planning and the Environment (VROM), but also ‘clients’ like municipal authorities, policy development services, researchers, designers and market parties.

What is meant by ‘green housing’? Aspects include:
- policy development at national level (LNV, VROM, Ministry of Education, Culture & Science, OCW), at provincial level (regional planning, urban and rural sectors) and at municipal level (urban renewal, green structure planning, wildlife in the city), relating to urbanisation, nature and landscape conservation, rural areas development, market demand, land use policy;
- design practice in terms of architecture, town planning and landscape architecture;
- planning processes, guiding concepts;
- communicative processes;
- research into people’s wishes, behaviour and lifestyles.
City & Countryside Relay project

Drs. I.M. van den Top

Problem
How do urbanising areas deal with the available open space? Could the landscape become the starting capital for the urban networks of the future? How can this be achieved? What rules of the game must those involved agree upon in order to design a suitable plan? These are the main questions that the Estafette StadLand (City & Countryside Relay) project is trying to answer.

Objective
Alterra’s City & Countryside relay project is trying to improve consultations between municipal authorities and other stakeholders about regional green space. The project’s motto is ‘the art of sharing knowledge’.

Approach
A series of urban networks take turns in promoting knowledge sharing by organising a series of events. These events are tailored to the individual characteristics of an area, but they always involve the above questions. The first town to pick up the baton is Maastricht, with some neighbouring Belgian municipalities. In preparation for this, Wageningen University students examined cross-border collaboration, the ecological dimension and people’s wishes in 2002.

Results
It is hoped that sharing knowledge will influence the way green space in an urbanising environment is being addressed. Within the urban networks, the events should provide a new impetus to solving local issues. This should then lead to an exchange of knowledge between the urban networks. The results are being published on a regularly updated website (www.sturingstadland.nl) and sometimes in other products tailored to local situations.

Follow-up
See the above results.

Commissioned by | The Dutch Ministry of Agriculture, Nature Management & Fisheries
Contact persons | Drs. I.M. van den Top | Phone: +31 317 478701 | E-mail: marleen.vandentop@wur.nl.
Ir. T. Ekamper | Phone: +31 317 478710 | E-mail: tamara.ekamper@wur.nl
Communicating Urban Growth and Green (Greenscom)

Problem
A major challenge to urban planners and administrators in the towns of North-West Europe is that of integrating green space in urban development. This involves multiple actors with very diverse interests, as well as various administrative and communicative aspects. The main question this research project tries to answer is what spatial planning and control instruments can be used to promote the integration of urban green space in growing towns and cities?

Objective
The project’s main objective is to develop and improve control and planning instruments to strengthen the process of integrating urban green space in medium-sized towns and cities in North-West Europe.

Approach
The EU project Communicating Urban Growth and Green was started in 2000. A consortium of five research institutes and seven cities then started preliminary theoretical studies into ‘Governance and Policy Instruments’ and ‘Governance and Communication’. The outcome was used to assess the effectiveness of existing planning and control instruments using 14 case studies in the participating cities of Aarhus (Denmark), Helsinki and Tampere (Finland), Gothenburg (Sweden), Cergy-Pontoise (France) and Houten-Utrecht (the Netherlands). The evaluation of these case studies was started in the second half of 2002, while at the same time work started to develop the project’s final product, a ‘toolkit’ of instruments to integrate public green space in the urban development process.

Results
The project’s final product, a ‘toolkit’ of instruments, will be presented in 2003. This set of instruments is intended to help cities design, develop and manage parks and gardens in a sustainable urban development. Close collaboration with the cities contributes to ensuring that the toolkit will be practically applicable.

Preliminary results of the 2002 evaluation of the case studies favour an approach based on governance and communication. It was found that such an approach allows the achievements of municipal authorities to be improved and the quality of urban green space to be enhanced. In addition, this approach may help to limit the number of conflicts over land use issues and speed up the implementation of plans. In the current political climate, the relation between citizens and the authorities should be closely examined, and the political debate on urban green and growth should also involve ordinary citizens. What changes could and should be introduced to achieve this?

Special care will be taken to develop policy instruments to stimulate innovation. At the same time, the roles, options and attitudes of planners have been found to be crucial in combining ‘expert’ knowledge with the knowledge available among residents and users. Planners and managers can help to promote contacts between the public and administrators.

When top-down, when bottom-up?
As communicating with residents and users is a time-consuming and hence costly process, adequate and effective communication must be a priority. Criteria like learning together and mutual trust may help to assess the quality of communication with the public.

Strategic innovations to give the public access to decision-making processes appear to be largely lacking. An important aspect is how municipal authorities deal with the public’s influence on urban growth and green. What legal preconditions, plans and financial procedures must be established to safeguard the public interest and at the same time stimulate private citizens to take initiatives and responsibility? How can municipal authorities safeguard the quality of their communication with the public?

In the course of 2003, the above questions will be addressed through articles, conferences and a website presentation on instruments.

Follow-up
The toolkit provides control and planning instruments to promote the integration of urban green space in towns and cities in North-West Europe. Urban planners, managers, urban ecologists, landscape architects, policy-makers and implementers have direct access to the project’s results. Towns and cities will be made aware of the availability of the toolkit by means of a brochure, articles and conferences.

Commissioned by | The EU, the Dutch Ministry of Housing, Spatial Planning and the Environment (VROM) | the Dutch Ministry of Agriculture, Nature Management & Fisheries (LNV).

Contact person | Ir. C.B.E.M. Aalbers | Phone: +31 317 478713 | E-mail: carmen.aalbers@wur.nl.

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Contact person | Ir. C.B.E.M. Aalbers | Phone: +31 317 478713 | E-mail: carmen.aalbers@wur.nl.
The Twente urban network

Drs. I.M. van den Top

Problem
The Fifth National Policy Document on Spatial Planning charged the urban networks with developing a long-term structural design planning. One of these urban networks is the cooperative partnership including the towns of Enschede, Hengelo, Almelo and Borne (known in Dutch as Netwerkstad Twente). The key question is: What basic principles of wildlife and landscape can contribute to a sound decision-making process about planning developments in the Twente region?

Objective
The project aims to survey the green space and water system qualities in the Twente urban network area and to translate them into basic spatial principles to support the decision-making process for this region.

Approach
The local authorities in the area have jointly set up various thematic groups to develop a long-term structural design planning. Alterra led the thematic group on green space and water, which included representatives of the four municipalities, the provincial authorities and the water board. Alterra prepared the sessions on the basis of prior work done by the representatives within their own organizations.

Results
The project has produced a ‘decision chart’ and a set of six basic principles to guide the spatial planning and development of the urban network. The decision chart offers an ecological and hydro ecological framework for assessing decisions on building proposals, sites designated for water retention and investments in ecological quality. The underlying philosophy is that the quality of green space and water systems should not be regarded as limitations or impediments but as starting capital for the urban network.

Follow-up
The Twente urban network will develop an integrated long-term spatial planning, in consultation with the residents, partly based on the preparatory efforts of the thematic groups.
Feasibility study for Chongming Dao (China)

Drs. M.J.M. van Mansfeld

Problem
In the world’s various delta areas, including the Rijn-Maas-Schelde, Po, Ebro, Thames and Yang Tse deltas, urban centres are exerting intense pressure on the surrounding rural areas. There is a great need for sustainable and ecologically sound solutions, benefiting the residents of both rural and urban areas.

The above complex of problems also applies to the Chongming Dao area in China, where it is comparable to the situation in the south-west of the Netherlands. The key question is: How can urban elements be combined with green space? In other words: what layout can be designed for an area where wildlife, infrastructure, recreation, intensive and extensive agriculture and housing all demand their share of the available space?

Objective
Exchanging knowledge and finding solutions for land-use planning issues which adequately incorporate green values in the overall planning concept and use an integrated approach to address rural and urban interests.

Approach
Alterra and Fudan University entered into a covenant for collaboration in 2001, outlining the commitments made by the two parties.

The project involves three stages:

Stage 1: Feasibility study for integrated land-use planning for the Chongming Dao area, with special emphasis on the Dongtan nature reserve.

Stage 2: Scenario study on integrated land-use planning for the Chongming island.

Stage 3: Implementation.

Stage 1 is currently underway, and involves a three-day workshop which is to take place in China, and in which Alterra will exchange views on land-use planning for Chongming Island, off the coast of Shanghai, with a range of Chinese partners from Shanghai, including policy-makers, government officials, researchers and planners whose areas of expertise include urbanisation, conservation, water management, recreation and agriculture.

Results
The workshop will try to get the partners to commit to an integrated approach to land-use planning. Scenarios and modelling techniques will be used to develop decision support systems that can be used in the Chinese context. To this end, the workshop will experiment with techniques of participatory planning to illustrate an integrated approach to spatial planning.

Follow-up
If the workshop approach is appreciated by the participants and a Chinese-Dutch joint project approach can be established, the next aim will be to design the follow-up studies (stages 2 and 3). These stages will focus on knowledge transfer relating to the scenario approach, integrated planning by design and the development of planning techniques in other cultures.
‘Green Metropolises 2002, the second year’ is the second report on the Green Metropolises research programme at Alterra Green World Research. This information (as well as that on the first year, 2001) is also available from the programme’s website: www.groenemetropolen.nl

Edited by:
  Elsbeth Gerritsen, Carmen Aalbers, Vanya Simeonova & Wim Timmermans

Authors:
  Elsbeth Gerritsen, Wim Timmermans, Robbert Snep, Agnes van den Berg, Lon Schöne, Marleen van den Top, Yvon Schuler, Gerard Kolkman, Jos Jonkhof, Carmen Aalbers, Robert Kwak, Gielijn Blom, Marlies Brinkhuijsen, Madeleine van Mansfeld, Leo van den Berg.

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  Elsbeth Gerritsen: 6, 11, 12, 16, 17, 24, 29, 30, 33, 38, 39, 47, 51, 55
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  Veroniek Bezemer: 17, 36, 47
  Yvon Schuler: 18, 19
  Wim Timmermans: 22, 28, 30, 31, 57
  Robbert Snep: 25, 32
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  Gielijn Blom: 49
  Carmen Aalbers: 53, 60, 61
  Marleen van den Top: 59, 62, 63

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  Maaike Hartjes, Amsterdam

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  Jan Klerkx, Bèta Vertalingen, Maastricht

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