

Summary of the Strategic Environmental Assessment of the National Spatial Strategy

1. A strategic environmental assessment of the new National Spatial Strategy

The Netherlands faces urgent and major challenges relating to housing, agriculture, nature, water and soil, the need for a more circular economy, and how to cope with climate change. Space is scarce and the challenges are substantial, as is the context. Choices will have to be made. The National Spatial Strategy, which replaces the current National Strategy on Spatial Planning and the Environment (NOVI), presents directional statements for the long term (until 2050) and also looks ahead to 2100. These can be used to chart a course for spatial planning in the Netherlands. With the National Spatial Strategy, central government has put itself back at the wheel of spatial planning, to ensure fair decision-making and the best possible environmental quality for all people in the Netherlands – including future generations.

The directional statements will lead to detailed plans and projects for both the human and physical environments. They will be subject to an environmental impact assessment (EIA) procedure,¹ ensuring that environmental concerns are considered from the very beginning of new building and development projects. The EIA requirement is laid down by law, specifically part 16.4 of the Environment and Planning Act and chapter 11 and annexe V of the Environment and Planning Decree. As a policy document, the National Spatial Strategy requires a strategic environmental assessment (SEA) which describes the likely environmental effects at a more general level.

The National Spatial Strategy was developed in two stages. First, four future scenarios were broadly sketched out. Each of the scenarios takes one particular direction as its starting point to describe how the Netherlands might develop in the long term. The environmental impact of each of these scenarios is then described. This helped us formulate our policy choices for the strategy. In the second stage, a preliminary draft of the National Spatial Strategy was drawn up, followed by a draft National Spatial Strategy. Both documents were published. The environmental effects of the policy choices set out in the draft National Spatial Strategy are identified and described in this SEA. The expected effects of the future scenarios and policy choices are compared with those of the reference scenario – the 'autonomous development' of the existing situation, as described under 'Snapshot of the Environment' (chapter 3 and annexe I). The future scenarios and their effects are described in chapters 4 and 5 of this SEA, followed by a description of the definitive policy choices and their expected effects in chapters 6 and 7.

2. Visualising environmental effects using the Wheel of the Environment

The Environment and Planning Act introduced the concept of 'physical environment'. While the Act does not provide a definition of this term, it does describe what it encompasses, namely structures, infrastructure, water systems, water, soil, air, landscapes, nature, cultural heritage and world heritage. The Wheel of the Environment was introduced in the National Strategy on Spatial Planning and the Environment (NOVI) as a comprehensive tool to visualise the effects on all relevant physical environment themes. The Wheel is divided into

¹ The EIA procedure is enshrined in part 16.4 of the Environment and Planning Act.

four domains: (1) safe and healthy physical environment, (2) good environmental quality, (3) living environment, and (4) economic environment. Each of these has its own themes and indicators (see figure 1). This SEA uses the Wheel to describe the expected effects of the reference scenario (Snapshot of the Environment), the four future scenarios and the definitive policy choices.

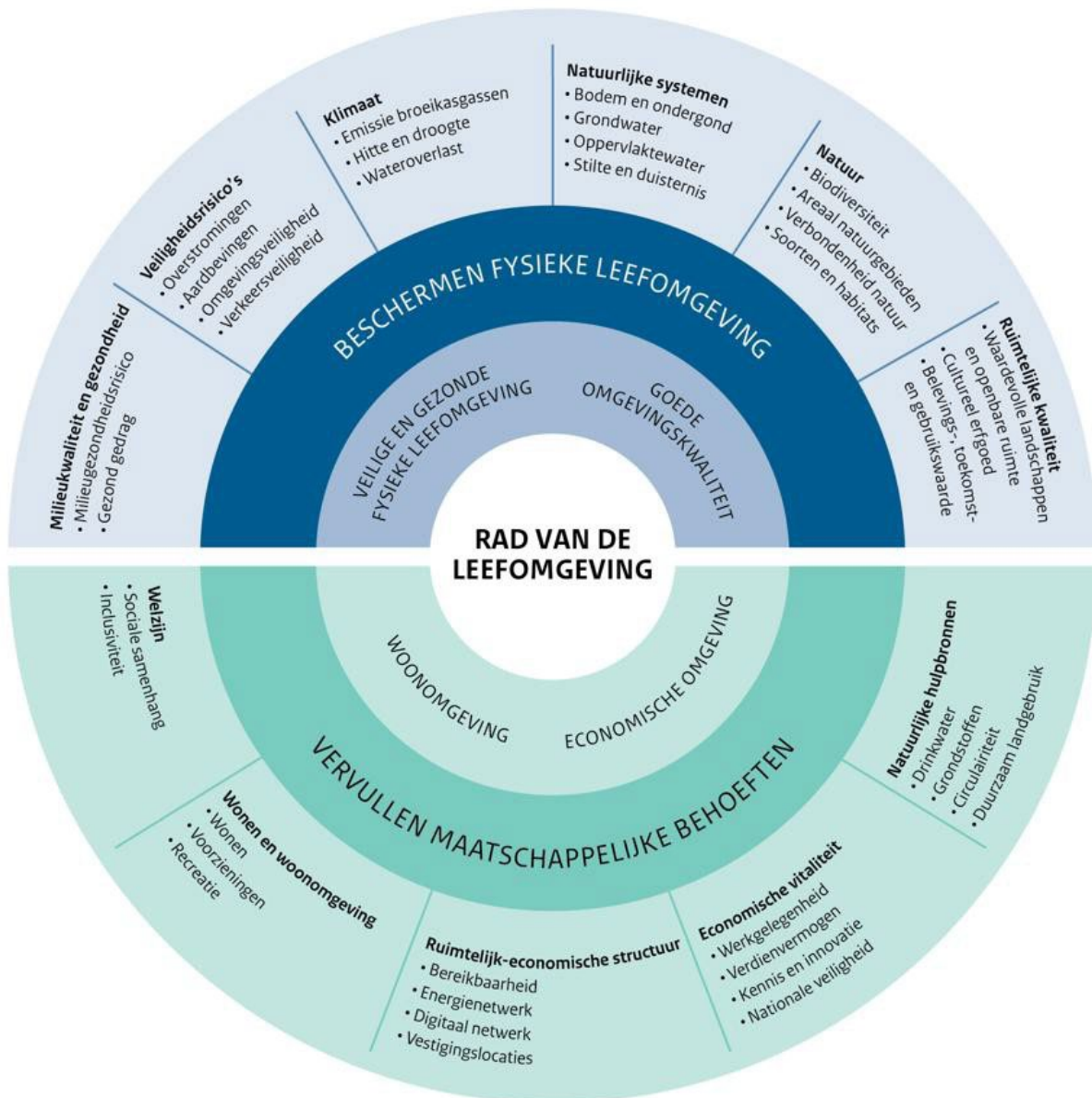


Figure 1: Wheel of the Environment

RAD VAN DE LEEFOMGEVING	WHEEL OF THE ENVIRONMENT
VEILIGE EN GEZONDE FYSIEKE LEEFOMGEVING	Safe and healthy physical environment
GOEDE OMGEVINGSKwaliteit	Good environmental quality
WOONOMGEVING	Living environment
ECONOMISCHE OMGEVING	Economic environment
BESCHERMEN FYSIEKE LEEFOMGEVING	Protecting the physical environment
VERVULLEN MAATSCHAPPELIJKE BEHOEFEN	Fulfilling societal needs
Environmental quality and health	Environmental quality and health
• Environmental health risks	• Environmental health risks

• Healthy behaviour	• Healthy behaviour
Veiligheidsrisico's • Overstromingen • Aardbevingen • Omgevingsveiligheid • Verkeersveiligheid	Safety risks • Flooding • Earthquakes • Environmental disasters • Traffic safety
Klimaat • Emissie broeikasgassen • Hitte en droogte • Wateroverlast	Climate • Greenhouse gas emissions • Heatwaves and drought • Flooding
Natuurlijke systemen • Bodem en ondergrond • Grondwater • Oppervlaktewater • Stilte en duisternis	Natural systems • Soil and subsurface • Groundwater • Surface water • Silence and darkness
Natuur • Biodiversiteit • Areaal natuurgebieden • Verbondenheid natuur • Soorten en habitats	Nature • Biodiversity • Total size of nature conservation areas • Connected nature conservation areas • Species and habitats
Ruimtelijke kwaliteit • Waardevolle landschappen en openbare ruimte • Cultureel erfgoed • Belevings-, toekomst- en gebruikswaarde	Spatial quality • Valuable landscapes and public spaces • Cultural heritage • Amenity value, future value, utility value
Welzijn • Sociale samenhang • Inclusiviteit	Wellbeing • Social cohesion • Inclusion
Wonen en woonomgeving • Wonen • Voorzieningen • Recreatie	Housing and living environment • Housing • Facilities • Recreation
Ruimtelijk-economische structuur • Bereikbaarheid • Energienetwerk • Digitaal netwerk • Vestigingslocaties	Spatial economic structure • Availability/accessibility • Energy network • Digital network • Business locations
Economische vitaliteit • Werkgelegenheid • Verdienvermogen • Kennis en innovatie • Nationale veiligheid	Economic capital • Employment • Earning capacity • Knowledge and innovation • National security
Natuurlijke hulpbronnen • Drinkwater • Grondstoffen • Circulariteit • Duurzaam landgebruik	Natural resources • Drinking water • Raw materials • Circularity • Sustainable land use

3. Four future scenarios

Four comprehensive future scenarios were developed, each exploring one particular direction and describing how the Netherlands might develop in the long term, looking ahead to 2100.² They give a general picture of the spatial implications of different choices for the same sector-specific issues, assuming population growth and economic growth stay within a given range. The scenarios also give an indication of how robust the policy choices are. The final version of the National Spatial Strategy expressly avoids choosing one scenario over others. Rather, the insights obtained with regard to the expected effects of each scenario were used in the draft National Spatial Strategy to further shape the policy choices.

The scenarios illustrate four general directions: (1) *staying and strengthening* the current course, (2) addressing specific issues by *concentrating on and specialising in* certain spatial

² See section 2.4.2 of the SEA: 'The year 2100 was chosen somewhat arbitrarily for the four future scenarios. The point of the scenarios is to sketch a general outline for the more distant future. 2075 or 2125 could as easily have been used to indicate this. A one-on-one comparison with the reference scenario is complicated and offers little value. The focus is on the general long-term outlook rather than any specific year.'

approaches (3) reinforcing the distinctive regional strengths through *diversification and regionalisation*, and (4) *going with the flow* by adapting to changes in our water and soil systems (including a shift towards urbanisation in parts of the country that are on higher ground). These future scenarios highlight the policy choices that need to be made in spatial planning. These concern, for instance:

- soil and water management in lower lying parts of the Netherlands;
- flood prevention in the future;
- urban and economic development;
- the focus of urban development, the energy supply and spatial economic structure;
- the agricultural transition (assuming a transition towards greater sustainability).

This SEA examined the possible effects of the four future scenarios for each theme of the Wheel of the Environment. This has resulted in an overall assessment of each future scenario with regard to the dimensions of people, planet, prosperity and system/robustness.

Stay and strengthen

In this future scenario, the outlook for the economic dimension is more positive than for the other dimensions. This is due primarily to the capacity of natural systems being stretched to their limit and a lack of steering (and thus capacity to adapt to system-wide choices).

Future scenario 1: Stay and strengthen

very negative	negative	neutral	positive	very positive	
		X			<i>People</i>
	X				<i>Planet</i>
		X	X		<i>Prosperity</i>
	X	X			<i>System/robustness</i>

Concentrate and specialise

In this scenario, systems recover and improve to a degree, resulting in a more positive outlook with regard to planet and prosperity. The scenario is potentially unstable in terms of system/robustness in the very long term (after 2100). Flexibility is a concern, particularly with regard to residential and work functions.

Future scenario 2: Concentrate and specialise

very negative	negative	neutral	positive	very positive	
		X			<i>People</i>
		X	X		<i>Planet</i>
		X	X		<i>Prosperity</i>
	X				<i>System/robustness</i>

Diversify and regionalise

This future scenario builds on regions' distinctive strengths to create scope for social cohesion, sustainable development and economic growth. However, tackling challenges and achieving national objectives requires effective collaboration, coordination and management at both regional and supraregional level. To ensure a resilient and prosperous future for all

regions in the Netherlands, it will be necessary to strike a balance between local autonomy and cooperation that transcends regions.

Future scenario 3: Diversify and regionalise

very negative	negative	neutral	positive	very positive	
		X	X		<i>People</i>
	X				<i>Planet</i>
		X			<i>Prosperity</i>
		X	X		<i>System/robustness</i>

Go with the flow

This scenario is expected to lead to recovery and improvement in systems, which will have positive effects on nature, water and soil. This has resulted in a positive assessment of the dimensions planet and system/robustness. At the same time, the scenario is a major departure from the reference scenario and will have far-reaching consequences. Making the necessary changes will likely have negative effects for people and prosperity for an extended period of time.

Future scenario 4: Go with the flow

very negative	negative	neutral	positive	very positive	
	X				<i>People</i>
			X		<i>Planet</i>
	X				<i>Prosperity</i>
			X		<i>System/robustness</i>

Water and soil system is paramount

Based on the assessment of the future scenarios, the water and soil system appears in many areas to be the paramount factor determining future development. An analysis of possible choices with regard to the water and soil system clarifies how it is interwoven with fundamental issues:

- the system's tenability, especially in relation to freshwater supply, soil subsidence and flood risk in the long and longer term;
- the scope for changing tack/preventing lock-ins;
- the difference in how sandy soil areas and clay soil areas are affected.

It is important not only to determine the Netherlands' preferred situation in 2100 and beyond, but also to set out the preferred pathway. This will make the policy decisions more robust and also help pinpoint opportune moments for changing tack (switching to another water and soil strategy), develop tailor-made local solutions and prevent lock-ins.

Other relevant factors

The assessment of the future scenarios has also identified other factors that are relevant to the policy choices that will have to be made:

- How should we deal with the limits of existing frameworks and systems, such as the current legislation on nature, based on how the water and soil system is currently functioning and how that will change over an extended period of time? How should we deal with the limits of our current energy system? (This question

concerns the management of the energy transition.) These questions also relate to our views on reactive and regulatory control by government and the existing predominance of market ideology.

- How should we divide our attention over urban clusters and the regions (including regions with shrinking populations)? How can the different levels of government avoid divisions between the haves and have-nots in the Netherlands?
- Another issue concerns the opportunities and risks associated with control by subnational authorities, and the importance of national and subnational authorities actively aligning their policies and efforts. Not every challenge is suited to a regional approach. Issues relating to energy infrastructure and safety from flooding, for instance, demand a national approach to ensure uniformity, effectiveness and efficiency.
- How can we anticipate and adapt to possibly far-reaching changes in the soil and water system in the long term? Such changes can have enormous consequences and pose dilemmas in terms of steering and control. A prominent concern is the tension between short-term and long-term interests. A large-scale transition of the Netherlands, in which people 'migrate' to the south and east of the country over the next decades, would have wide-ranging effects on the lives of everyone in the country. It is therefore crucial to map out how such decisions may be reached. This should include identifying scope for appropriate or 'natural moments' to change tack.
- How will our choices affect our relationships with other countries? Depending on the choices we make and directions we take, our country's ties with Belgium and Germany could become tighter or looser with regard to jobs and housing in the border regions.

Influence of the future scenarios on the National Spatial Strategy

The assessment of effects of the four future scenarios has resulted in certain elements from the scenarios being included in or excluded from the National Spatial Strategy. In short, the policy choices in the strategy reflect a two-pronged approach combining more central government direction with the utilisation of regional strengths. A number of elements of the fourth, most far-reaching scenario have been incorporated into the approach for the natural system.

4. Impact of the policy choices

The National Spatial Strategy has a positive effect on the quality of the physical environment

The National Spatial Strategy sets out an urbanisation strategy that dovetails with the current strengths of Dutch spatial planning. It is a strategy that will boost spatial development and environmental quality in all regions. While following existing autonomous developments to a degree, it gives them more momentum in order to focus more squarely on the most pressing issues, such as the housing shortage. Concentrating activities with a higher environmental impact (such as industry and greenhouse horticulture) in certain areas will contribute to more effective spatial planning and limit pressure on environmental quality in other parts of the country. The choices made in the National Spatial Strategy will strengthen the transition to a sustainable energy supply, for instance by providing for more offshore wind farms and facilitating the Delta Rhine Corridor.

The Strategy also identifies the limits of the water and soil system (such as soil subsidence and limited access to freshwater), which will become pertinent for various industrial and agricultural users in the near future. In various parts of the country, businesses and households will have to adapt to these limits. Central government does not intend to carry out major engineering works in the primary water management system. Groundwater levels will be restored in various parts of the country, including peat meadow areas and lowland stream systems. These measures reflect a fundamental shift in the role of the water and soil system in spatial planning and can have a positive effect on environmental quality.

More objectives in sight, fewer results on other themes

The SEA sets out which policy ambitions for the various environmental themes are on track to be achieved in the reference scenario, in which themes a negative or worsening trend can be seen, and in which themes there is a risk of a worsening trend. Looking at the expected effects of the policy choices, the National Spatial Strategy appears to contribute in a positive way to the achievement of the government's ambitions for most themes. The feasibility and sustainability of policy choices in the areas of agriculture and nature remain points for concern, however. While the choices could potentially enhance the sustainability of the rural areas (including with regard to agriculture and nature), many of the associated measures are voluntary. This raises questions about the extent to which the ambitions can actually be achieved. If not, the current deterioration of natural systems could continue even longer. Moreover, the National Spatial Strategy addresses only a few key issues at the heart of a number of major problems in the rural areas, such as excessive nitrogen deposition and polluted waters. It is unclear whether this is enough to reverse the current decline in natural systems, and whether implementing policy on these themes could hinder the envisaged urban development.

The limits of the water and soil system; focus on nature

The reference scenario ('Snapshot of the Environment') illustrates that we are approaching the limits of the current water and soil system in a number of areas, such as the availability of sufficient freshwater, including clean groundwater for drinking water extraction, and issues around subsidence.

This SEA did not analyse whether or when these limits may be reached, although it is conceivable that the policy choices could help delay or even prevent this from happening. Additional measures may be required in the future if these natural limits are reached and this would have consequences for land use. The National Spatial Strategy does not explicitly aim to reverse the current deterioration in the quality of the natural environment and it only briefly addresses the underlying causes of this deterioration, notably excessive nitrogen deposition, leaching of pesticides and poor hydrological status. This is also clear in the appropriate assessment, conducted separately and attached to this report (annexe II).

Climate change exacerbates negative trends

Many of the themes that were assessed as mediocre or poor, such as heat, drought and water nuisance, are demonstrably related to climate change. The policy choices made in the National Spatial Strategy will achieve a modest improvement, but will not reverse the negative trend for these themes.

Social cohesion and inclusion in relation to spatial planning issues

For a number of themes, the choices set out in the National Spatial Strategy are not clear or specific enough to estimate their possible effects. Specifically, these are healthy behaviour,

social cohesion and inclusion. This is partly because the primary focus of the National Spatial Strategy is on the physical environment, while these themes are closely connected to local spatial planning and implementation and measures in the social domain. For instance, spatial planning measures alone cannot reduce the percentage of people who are overweight.

5. Final notes

Alignment with related national programmes

Some of the choices made in the National Spatial Strategy are aligned with those in related national spatial planning policies, notably the National Space for Defence Programme and the National Energy Network Programme. It is essential that policy choices from the National Spatial Strategy are also incorporated into other policies that are currently in the development stage, such as the National Water Programme, the National Programme for Soil, Subsurface and Groundwater, and the National Programme on Sustainable Use of the Deep Subsurface.

Implementation of central government direction and policy choices

The effects described in this SEA are based on existing analyses and monitoring reports, such as the MONOVI reports published by the Netherlands Environmental Assessment Agency (PBL), its recent foresight study on prosperity and the environment ('Toekomstverkenning Welvaart en Leefomgeving') and the climate scenarios developed by the Royal Netherlands Meteorological Institute (KNMI), supplemented with expert judgments by experts within and outside of Antea Group. The assessments per theme were made by Antea Group's experts, based on the described effects. Two points should be considered here. Central government has announced its intention to steer developments in spatial planning more tightly but has not yet said how it will do this. It has also not yet provided details on how the policy choices will be implemented. This SEA is therefore based on the assumption that the policy choices will be implemented effectively. The second point concerns the voluntary nature of some of the policy choices, which makes effective implementation less certain. There is a chance that some of the positive effects identified in this SEA will not ultimately occur, or only partly.

The above implies that many of the policy choices and associated measures still need to be enshrined in legislation, set out in concrete plans, etc. This means there are still uncertainties, and that the effectiveness of policy choices will not become clear until results are observed. The important role of the PBL in providing monitoring information will need to be incorporated into the national programmes. It is also important to incorporate the recommendations of this SEA, and the appropriate assessment, in order to achieve the desired effects in the environment.

Knowledge gaps

The extensive data available for many themes – through monitoring, the biennial report on progress with the NOVI, policy analyses and scientific modelling analyses – enabled a good description of effects for the current situation and the reference scenario. The only substantial knowledge gap for this SEA is how the future will unfold, and how this will influence the effects of policy choices.

About Antea Group

Antea Group is an international engineering and environmental consulting firm, with 1,800 employees in the Netherlands. Together we work to ensure a safe, healthy and futureproof environment. We have leading experts in the fields of environment, infrastructure, urban planning, energy and water, and offer innovative solutions for data, sensing and IT. We contribute to the development of infrastructure, residential communities and waterworks, and to addressing challenges like climate adaptation, the energy transition and the replacement of ageing infrastructure. From research to design and from construction to maintenance: whatever the area, we have the expertise. We think along with our clients, asking critical questions and always aiming to achieve the best results together. Anticipating today's questions and tomorrow's solutions is what we've been doing since our foundation in 1951.

Contact details

Monitorweg 29
1322 BK Almere
Postbus 10044
1301 AA Almere

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