Rijksoverheid

National Strategy on Spatial Planning and the Environment

A sustainable perspective for our living environment

Table of contents

Summary

The document before you is the National Strategy on Spatial Planning and the Environment (Nationale Omgevingsvisie - NOVI), in which national government presents its long-term vision on the future development of the living environment in the Netherlands.

In the Netherlands, we are facing a number of urgent societal challenges, at regional, national and international level. The large and complex challenges such as climate change, the energy transition, the circular economy, accessibility and (the building of) houses are set to bring about major changes in the Netherlands. We already have a long tradition of adaptation. Against that background, we can use these challenges to move forwards and at the same time to preserve the Netherlands as an attractive nation for future generations.

The NOVI represents a perspective for tackling these major challenges, for making our country even more attractive and stronger while building further on the existing landscape and historical cities. The key term is environmental quality, or more precisely spatial quality combined with the quality of the environment, all taking into account societal values and substantive standards for example with regard to health, safety and the natural environment. In that interplay of standards, values and collective ambitions, the aim of the NOVI is to promote cooperation between all stakeholders.

The NOVI in fact proposes a new, integrated approach that brings together all levels of government and civil society, all with greater control from national government. By constantly and carefully considering all the affected interests, we will work towards our priorities: space for climate adaptation and energy transition, sustainable (circular) economic growth potential, strong and healthy cities and regions and the futureproof development of rural areas.

The sustainable renewal of the Netherlands is a long-term process. At the same time, current developments challenge our capacity to respond rapidly to developments in society.
The COVID-19 pandemic, for example, illustrates just how vulnerable we are. The Cabinet is currently working on a policy for economic recovery. It is essential that this recovery policy also serves our objectives in terms of policy for the living environment, for the longer term. In that way, short-term problem solving will remain in line with the strategic vision expressed in the NOVI. That combination creates possibilities for utilising opportunities for synergy, for example by opting for recovery measures that not only contribute to public health but also to improving the quality and sustainability of the living environment.

With regard to each of the four NOVI priorities referred to above, both short-term and long-term measures will be needed, that constantly interact with one another, in practice:

1. Already the Netherlands is facing longer periods of drought. This increases the urgent need to improve the match between water consumption and the available water supply, and that we retain water, for longer. This is just one example of the essential choices that already need to be taken and that have a major impact on the physical living environment. Functions that use the physical living environment must be better harmonised with the characteristics of the soil and water system. These choices will contribute to achieving a climate-resilient situation by 2050, in which the Netherlands is prepared for climate change and sea level rise. We must also consider the energy transition: already today, that process is demanding that we make choices that take account of long-term effects. At sea we are seeking to secure space for wind turbines. The recently established North Sea Agreement reveals the presence of many other interests. On land, the main infrastructure for the transport and storage of renewable energy is already revealing shortcomings, in certain areas. As we approach 2050, the proportion of renewable energy is due to increase further. That then will require further adjustments to the energy infrastructure. The challenge of finding space for the sources of renewable energy is itself considerable. Against that background, the NOVI provides potential solutions that all take account of the quality of the living environment in integrating the energy infrastructure.

2. In the wake of the COVID-19 pandemic, we are working hard to mitigate the consequences for our economy as far as possible. In the short term, those efforts demand unheard of government interventions and investments. The real skill lies in helping to ensure that those interventions and investments also serve our long-term ambition, namely making our energy supply renewable and our economy circular, while bolstering the quality of our living environment.
   In selecting the locations for offices, business parks, large-scale logistic functions and data centers, together with the demands of businesses and economic vitality, connections to the traffic and transport network and the electricity grid, we are also considering the attractiveness and quality of the urban and rural environment. Our goal is to encourage active clustering of (large-scale) logistic functions at logistic hubs located alongside (inter)national corridors.

3. The role of the NOVI is to build towards strong, attractive and healthy cities. We will continue working towards the development and expansion of Netherlands Urban Network, with the aim of creating an easily accessible network of cities and regions. At the same time, the huge current demand for housing calls for urgent solutions. For the short term, the Cabinet has therefore proposed a package of measures aimed at delivering a new, solid boost to house building.
   The locations for new residential areas are based in the Netherlands Urban Network, and this development is taking place in line with the ambition of the integrated urbanisation strategy, wherever possible within existing urban areas, while remaining climate resilient and nature inclusive. Large areas of open space between the cities are set to retain their green character. The range and quality of green facilities in our cities will be reinforced, with improved links to green areas outside the cities. The COVID-19 crisis has further underlined the huge importance of the sound layout and use of public space.

4. The nitrogen problem has had a huge influence both on rural areas and a number of economic sectors. The value of our nature, the landscape and the future of agriculture are all under pressure. Enhancing biodiversity is clearly not only an ecological but specifically also an economic challenge that is calling for an urgent short-term response. Nonetheless, sustainable solutions take time. For the longer term, we are therefore working towards a gradual and carefully considered restructuring of our rural areas, also with the aim of establishing cyclic agriculture in sound balance with the nature and landscape values. This will help establish rural areas that offer a pleasant environment for living, working and recreation, while still permanently offering space for economic viable agriculture, as a key driver for the rural environment.

In other words, we will tackle the challenges facing us while continuing to develop a long-term strategy for overcoming those challenges.

The combination of all these ambitions will place huge demands on our living environment. A whole raft of interests and claims must be given the space they need in the 41,000 square kilometres that make up the Netherlands. Not everything will be possible, and certainly not everything will be possible everywhere. Clashes are inevitable. The question is how can we cash in on the opportunities available to us, while still facing up to the potential threats: what do we need to realise our ambitions? In this process, national government must and will take the lead. Shortages mean that choices will have to be made. Based on the vision of the NOVI, national government is offering frameworks and guidelines for both national and local choices. But we must remember that national government is not granting itself a role as a centralising force. Indeed, the responsibility is borne jointly by all parties. Within national government, our aim is to help guide the process of interplay, while continuing to monitor our national interests. We have no intention of evading the dilemmas facing us. Instead we will specifically create opportunities by joining forces in achieving our shared ambitions. Those opportunities will help us improve the quality of our living environment and in that way encourage new opportunities for social cohesion and economic recovery, solidly embedding the possibilities for clean, safe and sustainable technologies - which in turn contribute to our intended transition towards a sustainable and circular society - in our way of life and our working practice.

As part of that process, we will clearly identify the national interests, make national choices, offer guidance for local considerations and encourage an area-specific approach. The aim of the NOVI is to arrive at sound choices in specific areas. We want to do what is best for the whole of the Netherlands, while at the same time doing justice to the individuality of the various regions. Because every part of the Netherlands matters.

These objectives will demand sound cooperation between national and provincial government, water authorities and municipalities, and between the public and private sector, the institutions of civil society and individual citizens. All of these parties have been consulted intensively in the drawing up of the NOVI strategy. In the implementation of the NOVI, for example in the Environment Agendas and the Regional Investment Agendas, we aim to continue that collaboration.

The central element of balanced interests is the balanced use of the physical living environment, both above and below ground. This is referred to as an 'environment-inclusive' policy. In bringing about that policy, the NOVI distinguishes three consideration principles: 1) Combinations of functions take precedence over single functions, 2) Characteristics and the identity of an area are key points for focus, and 3) The shifting of responsibilities must be prevented.
In implementing the NOVI, national government will clearly demonstrate how the environment-inclusive approach will take shape, and how the consideration principles will be utilised.

Control also means guiding the considerations by other levels of government in what is known as the preferred order. To give an example from practice: our preference is for the installation of solar panels on the roofs and facades of buildings; if that proves impossible, the next option will be unused areas of land within the built environment. If that too is not an option, we will shift our focus to the rural areas. In this way, within the NOVI, national government will help guide the futureproof development of our living environment, without imposing an unbending blueprint. Together with all our partners, we must constantly go in search of the best options for responding to current developments. The NOVI is a cyclic and adaptive process; hence the monitoring process linked to this vision document.

The NOVI is accompanied by an Implementation Agenda, which explains how national government will fulfil its role in implementing the NOVI plans. The Implementation Agenda will for example include an overview of instruments and (area-specific) programmes in the various fields of policy. If necessary, the Implementation Agenda will be updated annually.

Transport, industry, house building, mobility, retail trade and agricultural businesses: climate adaptation, the energy transition, the transition to a circular economy and the nitrogen management problem affect us all, in every part of the Netherlands. The aboveground and underground environment, on and offshore, urban and rural areas are inextricably linked. The new approach put forward in the NOVI is effectively a clarion call for cultural change, with the aim of arriving at a coherent and inspirational vision for our living environment.

On the road to 2050, the Netherlands will function as a network of well-connected cities and regions backed up by a high-speed, sustainable and comfortable system of mobility and transport. At the same time, living, working, nature, landscape and facilities in our towns and cities will gradually become increasingly interconnected. We will live closer to our workplace, will be able to work more from home and will enjoy more green in our immediate residential environment, and we will walk and cycle more often. These processes are closely tied to issues regarding digitalisation and mobility and accessibility.

No matter where we live in the Netherlands, our interests are closely intertwined and often go beyond the local domain. At the same time, the quality of our everyday living environment will determine our view of the major issues of the day.

The NOVI represents the integrated approach by national government focused on cooperation. It is an area-specific consideration framework and guiding vision in one, within which together we can optimise our efforts in maintaining the quality of life in a healthy and economically strong Netherlands.

1. About the National Strategy on Spatial Planning and the Environment

The Netherlands is faced with huge challenges that influence our physical living environment. These complex challenges that include urbanisation, sustainability and climate adaptation, are closely interwoven. This complexity calls for a new, integrated work approach that enables us to accelerate and improve the way in which we make choices for our living environment. National government is taking the lead in tackling the shared challenges, by setting a course, and taking control in successive cooperation between public institutions and between public and private bodies. The National Strategy on Spatial Planning and the Environment (NOVI) represents a joint approach that will result in a sustainable perspective for our living environment. Such a perspective is essential if we are to achieve our objectives, and is a shared responsibility of government and society.

1.1 A sense of urgency; a perspective for the Netherlands

The major developments and tasks facing us require a new perspective for the Netherlands. Together they place severe pressure on the living environment and the space available, and make it necessary that the various interests be reconsidered, with a view to the long term.

Sustainable &Healthy

The challenges facing us relate not only to the longer term, but will also affect us in the coming years. We place severe demands on our living environment. We all want to act sustainably with regard to our planet. We want a clean, healthy, recognisable and safe environment but at the same time we want a flourishing economy. The COVID pandemic and its consequences have further underlined the essential nature of these needs.

We need space in which to live, work, manufacture, build and move about. We want to learn, play, recreate, relax, exercise and enjoy sporting activities. We want to improve the accessibility and quality of the living environment. We want to guarantee that we are safe from the risks of flooding, that we are protected against the hazards inherent in high-risk production and activities and we want to offer space to nature, landscape and water, while working towards healthy residential, working and living conditions.

But how do we balance all those wishes? How can we further reinforce the quality of our living environment? How do we make the spatial choices that not only assist us now, but that are also viable and maintainable in the longer term? How can we ensure that we maintain a country in which we continue to live and work happily in and beyond 2050? These are important questions that affect us all.

Strong tradition

Our knowledge, experience and ambitions give us the confidence and the energy to actively take up these new challenges. The Netherlands has a strong tradition of regulating the living environment. Throughout history we have been successful in adapting to changing circumstances, often through engineering interventions. However, we are increasingly recognising that there are limits to our technical capacities and that with a view to the future, it is increasingly meaningful to ‘move in line with’ natural processes. The NOVI is a continuation of this tradition, but based on new insights aimed at building further towards an attractive, sustainable and strong Netherlands, that is ready to face the future. At the same time, we will remain fully focused on health, the environment, sustainability, economic strength and the quality of life and the living environment.

At heart we are realists. This vision is an attempt by national government to outline the desired quality of the living environment, the proposed development and the policy to be implemented. Wherever it is already wise to do so, national government will set a course for the future. Nonetheless, many choices will require further consideration in the regions, sometimes at an as yet undetermined moment in the future. Wherever necessary, national government will take control and set the course. In that sense, the NOVI is not a static policy document, but rather an action plan for the coming years, that can be constantly adapted, supplemented and reinforced, as the process advances.

1.2 New vision, new approach

Integrated

The NOVI represents a new approach to the issues affecting the physical living environment. The tasks are considerable, multifaceted and often heavily interwoven. In many situations, specifically sectoral objectives can no longer be achieved through a purely sectoral approach. This fact demands solutions that wherever possible combine space for economic development, mobility, reduction of nitrogen emissions, housing and biodiversity recovery, and which also force us to recognise that not everything is possible in our country without imposing restrictions in certain areas or on certain groups.

As a consequence, a new, more integrated approach is needed based on a number of important underlying principles. We must use the whole of the Netherlands, must consider the aboveground and underground environment together and must maintain the dual objectives of development and protection. The approach outlined in the NOVI is based on the national interests present in the living environment, and the tasks and challenges derived from those interests. In identifying solutions, for example, the Nitrogen Problem Advisory Board[1] recommends taking the major transitions as the starting point in ensuring a more integrated consideration. Wherever an integrated approach is needed in facing up to these tasks, the NOVI will set the course. In respect of other subjects, the starting point will be sectoral policy. This is not always an easy distinction to make, and it may even be subject to change, over time. For that reason, the NOVI itself is constantly adaptable.

Control

The growing pressure on the physical living environment demands clear and fundamental choices. It also calls for greater control from national government in setting the course for the future physical living environment in the Netherlands. In this way, in the future, we will be able to achieve both a healthy and safe living environment while providing sufficient space for further growth of our nation's wealth. We will enjoy a constant sound balance between economy and natural values. Nonetheless, greater control from national government does not mean the centralisation of tasks and responsibilities; instead, it will involve setting the course in tackling the huge tasks facing us, and controlling successful interplay between the various public institutions and between public and private players. In other words: National government is taking the lead in the tasks that face us all. It will also mean opting for collaboration between the various levels of government, or put more succinctly, working together as a single government (based on the system provided by the Environment and Planning Act).

Cooperation

Cooperation, then, is crucial when it comes to making choices. The Netherlands, as an open economy, is heavily integrated in North-western Europe and the rest of the world. When it comes to cross-border tasks, we work alongside our international partners, both our immediate neighbours and partners from other countries in Europe and across the globe. Within our national borders, the government of the Netherlands works alongside other levels of government, civil society organisations and individual citizens. The process of the NOVI introduces coherence in the approach at (inter)national, provincial and municipal level.

Area specific

The tasks facing us are increasingly integrated in the regions, and demand deliberate choices. The greater the extent to which the combined levels of government (national government, provincial government, water authorities and municipalities) work together in an area-specific approach, acting as it were as one government, and join forces with businesses, centres of knowledge, civil society organisations and the residents of the country, the better the task facing us will be fulfilled.
With that in mind, we are broadening existing Area Agendas into Regional Agendas, in which the area-

[1] Nitrogen Problem Advisory Board, *Not everything is possible (Niet alles kan)*. Amersfoort, 2019.

specific tasks covering the entire country are recorded across the full scope of the NOVI. The outcome will be a broadly supported approach that establishes a clear link between municipal and provincial environmental strategies, and the strategy contained in the NOVI.

In a number of areas that face large tasks and complex problems, the (institutional) frameworks offer insufficient space to arrive at sound solutions. That is why eight provisional NOVI areas have been designated (see chapter 5). National and regional governments will together examine possible solutions for these areas that demonstrate a willingness to look beyond the limits of existing frameworks.

1.3 A different view, different choices

Characteristics and identity

The pressure on the physical living environment in the Netherlands has become so great that in many cases it is impossible to serve conflicting interests in isolation. They are too mutually dependent. The aspiration therefore is to create a coherent approach and wherever possible to combine interests that bring about a win-win situation. This is not always possible, in every situation, and on occasion tough choices will be necessary. In making those choices we will not so much consider the functions or how we can individually allocate those functions across the country, but will instead look at the specific characteristics, identity and historical background of the areas in question. What are the economic foundations for an area, and what is the current quality of the living environment (including nature, cultural heritage, environment, beauty of the landscape)? What is the condition of the soil, water and air? How is the area currently laid out? Where do people currently live, spend their leisure time and work, and how do they move around? How are local residents organised, and what grassroots initiatives are there? In identifying solutions and making choices, the essence lies in reinforcing the natural resilience and principal characteristics of the areas.

Many national interests and tasks affect or make use of the characteristics of the soil-water system and the natural capital present in that system in the form of support, groundwater, construction materials and mining resources. To sufficiently serve all the national interests, it is essential that the soil-water system be used efficiently, safely and sustainably, with a knock-in effect on the national interests. More than ever before, functions will be allocated to areas where they are appropriate to the natural properties and characteristics of the soil-water system.

A different view, other choices

Considerations

In balancing the various interests, we consider societal values, including costs and benefits. The challenge lies in structuring the living environment in such a way that wherever possible, the various functions complement one another, while being able to develop without hindering each other unnecessarily, and so reach their maximum fulfilment. Based on that approach, we can together achieve a good-quality living environment, without unnecessarily and irresponsibly shifting responsibilities to other areas or future generations. From the point of view of government, costs and investments will have to be matched to the available budgets set aside at the moment of decision making.

1.4 Scope and positioning

Instrument of the Environment and Planning Act

The NOVI is an instrument of the new Environment and Planning Act *(Omgevingswet)*, and as such is a precursor to that Act coming into effect. The NOVI will be published as a structure vision in accordance with the existing Spatial Planning Act *(Wet Ruimtelijke Ordening WRO)*. The National Environmental Policy Plan (NMP4, 2001) and the Government Vision on Nature 2014 will be integrated in and replaced by the NOVI and the accompanying National Environmental Policy Framework. The National Policy Strategy for Infrastructure and Spatial Planning (SVIR) will be replaced in its entirety, with the exception of section 4.9 Caribbean Netherlands and Caribbean Exclusive Economic Zone. In addition, the NOVI represents an amendment to a number of elements of the National Water Plan 2016-2021 (NWP) according to the Water Act. As soon as the Environment and Planning Act comes into effect, this structure vision will serve as an environmental vision, as intended in the new Act.

The Environment and Planning Act specifies for the NOVI that, 'taking account of sustainable development, the inhabitability of the countryside and the protection and improvement of the physical living environment, the coherent strategy is aimed at: (a) achieving and maintaining a safe and healthy physical living environment and sound environmental quality[2] and (b) the effective management, use and development of the physical living environment in satisfying the needs of society'.[3]

Physical living environment

The NOVI is the first integrated national strategy document pursuant to the Environment and Planning Act, and as such assumes the same broad interpretation of the term physical living environment: the natural environment including the large waters and natural landscapes, agricultural landscapes, the built environment, with towns, cities, villages, business parks, networks and infrastructure for the transport of passengers, goods, data, materials and energy, and the cultural heritage. As far as possible, the development of the living environment must be in balance with the protection of the values health, safety, landscape, nature, cultural heritage, quality of the living environment and environmental quality. The physical living environment is closely linked with the social living environment. In addition to the spatial and functional division of the living environment, it is also a question of the activities that influence the living environment in the broadest sense, including the natural environment, water, soil, air and natural capital. In that respect, the aboveground and underground environments are inextricably linked. The tasks facing us call for a short-term, medium-term and long-term approach. In respect of new developments, and the necessary approach, we have attempted to lay down a time horizon through to 2050. In that process we make use of the (sectoral) objectives that were already laid down by the Cabinet for the year 2050[4]. It is however already abundantly clear that many of the long-term targets will already require action over the coming years, if they are to be achieved. Nonetheless, we wish to prevent any watering down of the long-term ambitions by setting intermediate targets. Everything we do either in the short or medium term must also contribute to achieving the long-term targets for 2050.

National and international

The NOVI is a subject of national focus and, pursuant to the Environment and Planning Act, relates to the European Netherlands, including the nation's territorial waters, but excluding the Caribbean part of our Kingdom. In terms of content, however, the vision is not limited to the Netherlands. In the NOVI and the related programmes we have also translated the relevant international rules and agreements. Many issues demand a cross-border approach. Agreements on air transport and shipping, for example, have for years been reached at EU level, and indeed on a worldwide scale, at international round tables (ICAO[5], IMO[6]). Also with regard to river management, we have for years been subject to international agreements with Belgium, France, Switzerland, Germany and Luxembourg, that for example cover the entire river basin of the Rhine and Meuse rivers.

[2] In the NOVI we use the broader term quality of the living environment.
[3] *Environment and Planning Act*, The Hague 2016.
[4] See Parliamentary Papers 34682, no. 1; Parliamentary Papers 34682 no. 3; Parliamentary Papers 34682, no. 6.
[5] International Civil Aviation Organization (ICAO).
[6] International Maritime Organization (IMO).

Cross-border cooperation in many other fields also requires immediate action. Housing markets and labour markets, for example, cannot be restricted by administrative boundaries. Cohesion with Flanders in these policy areas is constantly growing. This is reflected in the increased volume of home-work travel between the Netherlands and Flanders and the merger of the ports of Vlissingen and Terneuzen with the port of Ghent. We are also seeing ever closer ties with the German Federal States of Lower Saxony and North Rhine-Westphalia. Further expanding these links is essential for the cross-border opportunities for our nationals and the functioning of our country.

1.5 Cooperation and implementation

The NOVI approach is based on broad societal involvement and contributions from government, citizens, the private sector, civil society organisations and centres of knowledge. The partners in society will actively contribute to improving the living environment and increasing the sustainability of the way in which we live, work and spend our leisure time. These combined efforts call for a national government that cooperates and facilitates where desirable and possible, and directs and sets the course where necessary.

Responsibility
Living environment policy is a shared responsibility of the affected government authorities. The NOVI outlines the undertaking of national government on a national scale, where it takes control with regard to other levels of government and where it is specifically up to those other levels of government to make the choices. Provinces and (collaborating) municipalities will express their own responsibility and choices with regard to the physical living environment. Other levels of government, individual citizens and businesses are not directly legally bound by the strategy in the NOVI, but are required to comply with the rules and standards that emerge from that strategy. It is important that wherever necessary the environmental and planning strategies of National, provincial and municipal authorities be successfully combined. If the various levels of government understand and recognise one another's wishes and objectives, this will contribute to the underpinning of the choices made by national government

Good governance
The management philosophy of the Environment and Planning Act is based on trust, whereby shared responsibility for the physical living environment is of key importance in drawing up an environment strategy. Good governance means that other authorities take account of the content of the NOVI, and that in drawing up the NOVI strategy, national government takes account of the policy of the other levels of government. With regard to implementation, too, the responsibility that businesses, individual citizens and civil society organisations wish to and are able to assume for the quality of the living environment must be clear. In order to underpin collaboration with other levels of government, cooperation agreements are being prepared on the basis of the adopted NOVI.

Environmental and planning law
The NOVI is one of the instruments for the new system of environment and planning law. Together with the general rules, the programmes and the environmental permits, the strategy forms a coherent set of instruments. These instruments cannot be viewed in isolation from other (sectoral) policy instruments intended for achieving the targets set towards 2050. Choices made in the NOVI will subsequently be translated into investment decisions, programmes and, wherever necessary, regulations. This NOVI is the first strategy that has emerged from the thinking behind the future Environment and Planning Act. As a consequence, this strategy is specifically more broadly applicable than previous policy plans and (structural) strategies, which in many cases cover one primary facet (for example space, soil or the environment) or a single sector (for example agriculture or mobility).

Strategic combination
This first integrated NOVI marks the start of a programme of development. The publication of the NOVI does not mean the end of other policy documents and strategies relating to the physical living environment. Wherever such policy frameworks require not only a sectoral but also an integrated approach, then they will be linked to the ongoing NOVI process. Because of the scope and extent of the physical living environment, not all subjects can be studied to their full depth. Existing policy documents and policy fields are however connected at strategic level, within the NOVI. A course will be set by national government at that level, but in many cases area-specific and/or programmatic elaboration will still be required. The NOVI offers the necessary framework.

In the National Environmental Policy Framework[7] that relates to the NOVI, the Cabinet identifies a series of building blocks essential for further clarifying and elaborating the environmental ambitions. As part of that process, the NOVI will continue to develop, and can be adapted as necessary, to changing circumstances.

Implementation agenda
Together with the NOVI itself, an Implementation agenda will also be published. This agenda will explain how the NOVI is to be elaborated, as well as listing the efforts already being made by national and regional government, and the additional (joint) actions that will be brought to bear by the NOVI.

1.6 Development

Social involvement
In the start-up phase for the NOVI, we organised numerous workshops with the aim of identifying developments in the physical living environment, experiences and ambitions. In the subsequent phases, we held in-depth discussion sessions with experts, and area dialogues throughout the country. Among the instruments to obtain a clear picture of the public's perspective, we undertook public surveys which not only involved an online questionnaire but also focus groups at various locations in the Netherlands. We also investigated the ideas of children and young people.[8,9] In the implementation phase, we organised a series of 'crash tests', with administrative and civil society players to examine where the planned route and the national interests could come into conflict, and to identify possible solutions. Various forms of social debate closely followed the publication of the draft NOVI. The submitted assessments of the draft document revealed considerable social involvement. Information meetings were organised about the draft NOVI in every province, in collaboration with other levels of government. A series of debates about the NOVI was also organised, to discuss the way in which the strategy should be further implemented.

Publications
In February 2017, the initial policy document[10] "Tasks for the National Strategy on Spatial Planning and the Environment (NOVI)" was published. This document designated the scope of the vision and on that basis a series of sectoral tasks and strategic tasks for the living environment were formulated. In April 2018, the House of Representatives was informed[11] about the way in which the NOVI was drawn up and the direction it planned to take, while the strategic tasks were crystallised into four priorities, on the basis of urgency and the coalition agreement. In October 2018, the Cabinet perspective on the National Strategy on Spatial Planning and the Environment was sent to the Dutch House of Representatives[12]. This perspective marked the opening of public debate by identifying the political thrust of the Cabinet with regard to three urgent issues that were already very much the subject of discussion.
In July 2019, the draft NOVI[13] was sent to the Dutch House of Representatives, thereby marking the start of the public inspection process. In April 2020, the letter 'Control and choices in the national strategy on spatial planning and the environment (NOVI)'[14] was sent to the Dutch House of Representatives. This letter outlines key changes in the definitive NOVI as compared with the draft, in particular with regard to urban development, rural areas and water management.

Open process

[7] Ministry of Infrastructure and the Environment, *'Een schone taak' (A clean task) Building blocks for a healthy, safe and clean living environment*, The Hague, still to be published.
[8] Motivaction International BV, Citizen Perspectives for the NOVI & Public Dialogue, input for the NOVI, August 2018 and January 2019.
[9] Het Groene Brein, Combineren, Concentreren & Concurreren – a young persons' perspective on the National Strategy on Spatial Planning and the Environment, June 2018
[10] Parliamentary Papers 34 682, no. 1.
[11] Parliamentary Papers 34 682, no. 3.
[12] Parliamentary Papers 34 682, no. 6.
[13] Parliamentary Papers 34 682, no. 48
[14] Parliamentary Papers 34 682, no. 27.

Right from the beginning of the development of the NOVI, an open process has been employed. At national level, the affected ministries are collaborating intensively. Between the various administrative levels, similar cooperation is taking place with municipalities, provinces and water authorities. Moreover, advisory boards, centres of knowledge, the private sector, civil society organisations and individual citizens have been involved in various ways. The results from the ex ante evaluation by the Netherlands Environmental Assessment Agency (PBL) were also considered in drawing up the NOVI. Just like the draft version, the definitive version of the NOVI was developed in an open process, and the choices from the draft have been further focused, through consultation.

As far as possible, any input provided has been integrated. Moreover, the elaboration of the NOVI itself will be undertaken in collaboration with numerous parties. It will remain an open process, also in respect of its further (regional) elaboration, and participation will at all times be a fundamental element of that process.

SEA

The draft NOVI was accompanied by a Strategic Environmental Assessment (SEA). This report describes opportunities and risks for the physical living environment for the policy choices made in the NOVI. The report considers the environmental impact as well as charting out other environmental effects. During the drawing up of the draft NOVI, intermediate results of the SEA process were utilised as input for the strategy. The picture that emerged from the SEA was one of more opportunities than risks for the living environment. However, because the SEA identified more risks than opportunities for environmental quality, health, biodiversity and welfare, a sharper focus was applied to these subjects from the draft NOVI, in the making of policy choices.

The SEA describes how different tasks come together, impact on one another and compete with one another for (environmental) space, in the physical living environment. This is partly due to the fact that the NOVI is an outline that presents strategic national policy choices in four priority areas and that calls for a coherent, integrated approach, on a national scale, that goes beyond the limits of individual sectors. The SEA takes into account that in addition to the NOVI, for certain more specific interests, choices have been made and laid down in a variety of structural strategy documents, memoranda, other policy documents and administrative agreements.

The SEA has mapped out the opportunities and risks of the policy choices made in the NOVI, and concluded that a number of these risks call for additional measures. These may take the form of national policy choices, strategies and implementation measures for specific policy fields (such as the environment, mobility, air transport, nature, health) and other (area-specific or sectoral) elaborations. The same applies to specific (environmental) elements that have not been given a place in the NOVI and to a number of aspects that are subject to a declining trend, which has not or not sufficiently been turned around by the policy choices in the NOVI itself.

The SEA Committee was called upon to issue recommendations on the environmental effects identified in the SEA. The committee recommended providing additional information about the State of the Living Environment[15] and to carry out crash tests for choices on climate adaptation, the energy transition, economic growth, urbanisation and rural areas.

In response to this recommendation, working sessions were organised for the crash tests. In addition to the government departments affected by the subjects referred to by the committee, these working sessions were also attended by the PBL and the National Institute for Public Health and the Environment (RIVM). Additional information about the State of the Living Environment required by the Committee and the conclusions from these crash tests were resubmitted to the Committee for further recommendations. The recommendations about this additional information supplied in the meantime by the Committee were also taken into account in drawing up the definitive NOVI. This resulted in a sharpening of the focus on a number of policy choices and the controlling role of national government. The checks carried out into the effects of the choices for the living environment once again revealed more opportunities than risks.

[15] Parliamentary Papers 34 682, no. 27 Background document to the SEA NOVI - The State of the physical living environment.

1.7 Structure of the NOVI

The NOVI (in chapter 2) describes a future perspective with the ambitions: what do we want to achieve? In chapter 3, we go on to describe the national interests in the physical living environment and the tasks that those interests give rise to. The tasks are in essence the difference between the ambitions and the current situation, and expected developments.

Wherever these tasks call for an integrated approach, they have been combined in four priorities. Chapter 4 describes the policy choices made with regard to these priorities. The four priorities are:

Priority 1
Space for climate adaptation and energy transition

Priority 2
Sustainable economic growth potential

Priority 3
Strong and healthy cities and regions

Priority 4 Future-proof development of rural areas

The aim of the NOVI is to formulate as clearly as possible the national policy choices on these four priorities (at strategic level). Wherever the choices at national level cannot or not yet be precisely focused within the NOVI itself, or wherever such a focus is not advisable, guidance is issued on the decentralisation of choices via preferred order or strategy and/or by identifying which (regional) process is best suited for arriving at those choices.

To ensure the appropriate level of consideration in making the policy choices, the NOVI operates three consideration principles, which assist in balancing and prioritising the various interests and tasks:

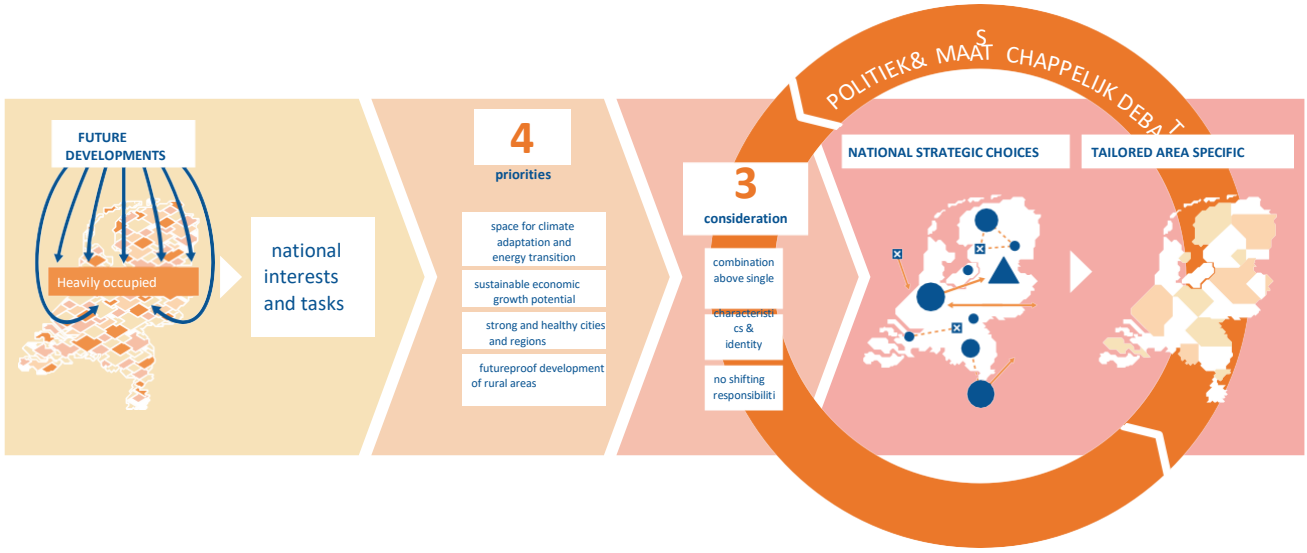
1. **Combinations of functions take precedence over single functions;**
2. **Characteristics and identity of an area are the central focus;**
3. **Shifting of responsibilities is prevented.**

The implementation of the NOVI (chapter 5) calls for new approaches to cooperation with permanent broad-based involvement by society, and contributions by government. Here we operate four basic principles:

1. **We work as one government, together with society;**
2. **We focus on the task(s);**
3. **Our work is area-specific;**
4. **We work constantly on the tasks according to an adaptive approach.**

These are also the guiding principles in the Implementation Agenda

Figure: Consideration within the NOVI



POLITICAL & SOCIAL DEBATE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2. A future perspective

By 2050, the Netherlands will be a country in which it is healthy, safe and pleasant to live. A country where the people recognise and appreciate the high quality of their living environment. Where everyone has the space they need to develop further. It will be a country with a healthy, futureproof economy. An economy that is sustainable and circular, and flourishing. It will be a country where scarce natural resources are left untouched or reused, and where fossil fuels have been replaced by renewable energy sources. A country that shares close ties with its neighbours and the rest of the world, and is an active player in the international community. A country where vital sectors are equipped to be robust. To fulfil these ambitions, the Netherlands has been required to make a number of fundamental choices; after all, not everything is possible and not everything is possible, everywhere. The effective and consistent application of these choices has resulted in a secure, sustainable and economically strong country, with a high quality of life.

Dilemmas
This future perspective deliberately creates an ideal picture of 2050. Nonetheless, many of these choices involve dilemmas: there are many options available to us, and many of them are based on sound arguments. The boxes contain examples of dilemmas that still have to be solved. In the past, the Cabinet summarised these dilemmas in the policy document 'The tasks for the National Strategy on Spatial Planning and the Environment'.

In 2050, the Netherlands as a densely populated and highly developed delta will be a focal point in Europe's economic structure for many reasons, including its excellent connections, both physical and virtual, both aboveground and belowground, by air, land and water, to the major urban regions and economic core areas of the Flemish Diamond and the Ruhrgebiet conurbation, and indeed with regions in other parts of the world. The cities and urban regions of the Netherlands will all benefit greatly from those connections. Together with our excellent establishment climate and the high quality of life, our welfare and wellbeing will to a large extent be determined by those connections.

The country consists of a mosaic of areas that are permitted to demonstrate a variety of characteristics. Every town, village and region matters and has its own role and relevance as part of the overall picture. The country has more metropolitan elements and qualities than today, but even in 2050 will maintain its open and polycentric spatial structure. At the same time, it will feature a rich, chequered pattern of more rural areas with mainly agricultural, natural and landscape functions. A substantial proportion of the population will live, work and find its home in those areas. Towns and villages are pleasant and vital, and rural areas are productive and attractive.

The vast majority of the population lives and works in urban regions. The urban Netherlands will operate as a network of excellently interlinked cities and regions supported by a rapid, sustainable and comfortable system of mobility and transport. The Netherlands Urban Network – the Randstad conurbation, Amersfoort, Zwolle, Arnhem-Nijmegen, the ribbon of cities in Brabant, with offshoots reaching into Twente, Groningen and (Southern) Limburg – is the beating heart of the country and the economy. The country will offer excellent access and ease of mobility thanks to a whole raft of innovations resulting in the lowest possible level of harmful emissions and nuisance. A country in which a sustainable and circular economy is free to develop, combined with multimodal logistic corridors. Where locations for housing and employment have been carefully selected, also with the aim of encouraging walking and cycling, while boosting the attractiveness of public transport and preserving nature and the landscape. A country where we have sufficient space to move freely, to meet one another, to relax and to find peace.

Integrated in and combined with the urban Netherlands, the rural Netherlands will be supported by a carefully managed and balanced soil and water system. The rural area will consist of peat pastureland, grassland, arable land, marshland, water and woodland, smaller towns, villages and dispersed settlements. Where cyclic agriculture and nature flourish and clean water (supplies) are sustainably utilised and managed. Where ancient, unique landscapes are preserved and new landscapes created. Where in smaller towns, villages and dispersed across the country, people live, work and make their homes.

By 2050, the North Sea will be intensively used, and its nature value recovered. Ships will continue to sail to and from the North Sea ports. The character of the fishery sector will have changed, but the greatest changes will relate to the reduction in the number of oil and gas installations and the huge rise in the number of wind farms and the related energy infrastructure, storage and conversion facilities; they set the scene, above the surface of the water.
Although more intensively used than ever, the ecosystem of the North Sea has recovered, and the unrestricted view from the coast and the underwater cultural heritage (among others from our rich seafaring history) are preserved. These results have to a large extent been achieved through the utilisation of the synergetic effects of the multifunctional and innovative use of space, such as combining wind farms with aquaculture, reinforcing nature by creating oyster banks, combining solar energy with tidal currents and storing energy and CO_2 in empty gas fields.

The Netherlands is a healthy, clean and climate-resilient country, with ample space for green and water. It is a safe country, protected as far as possible against flooding and other socially disruptive hazards. A country where rivers, nature, landscape and shipping share the space available. Where onshore and offshore a sound balance has been achieved between the built environment and open landscape, between nature and man-made elements and between land and water. A country in Europe that is open to change and where the strength of its tradition, culture and identity is reflected in the layout of the living environment, while taking account of its international context. A country where development goes hand in hand with an ever improving living environment.

What do we want?
This future perspective is an ideal picture. No one can actually predict what the Netherlands will look like in 2050. We know that the Netherlands in 2050 will be different from the Netherlands of today, in the same way that the Netherlands of 1990 differs from the Netherlands of today. Just as much that was present in 1990 is still recognisable, we are free to expect and indeed wish for our country to still be recognisable and feel like home, in 2050. We do know that certain social and technological developments will have a huge impact on our environment. Some we can influence ourselves, while others are unstoppable. The question is how and to what extent can they be influenced. More important now, however, is the question in what kind of country do we want to live? The answer to that question will determine how we opt to deal with the changes that we must unavoidably face. What are our ambitions and what values are we striving to uphold? What do we want to preserve and what do we want to change? Once the answers to those questions are clear in our mind, we will be in a better position to direct our actions and take the right decisions for the future.

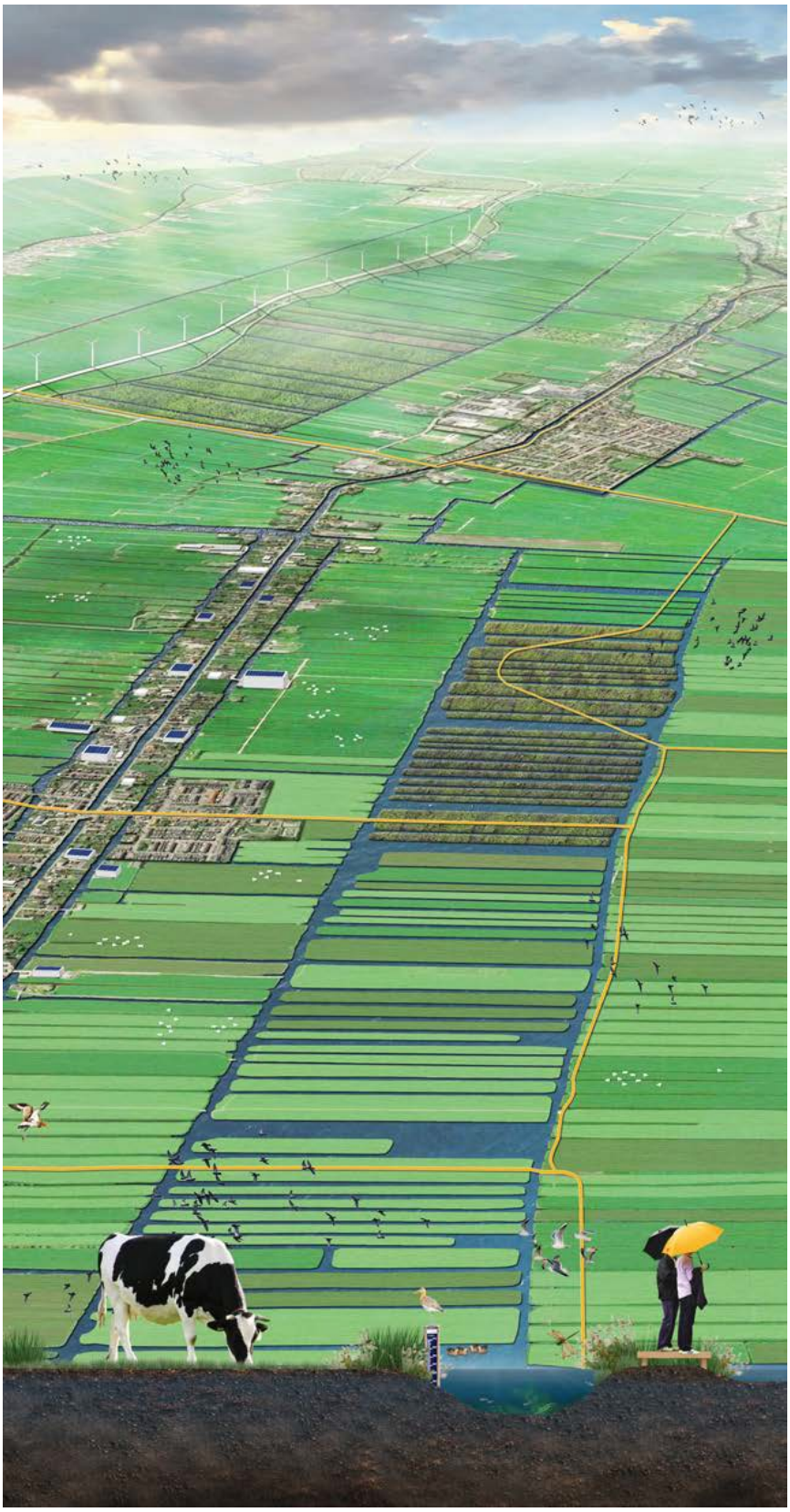
National, regional; one government?
Making choices is one thing, but who makes those choices, who is responsible for which choices and how do we put them into practice? Should we bolster the controlling capacity of municipalities and provinces, should we opt for greater national government control or is a differentiated approach to each task the best choice?

The picture of the Netherlands in 2050 offered here is a roadmap, but not a destination. Even by 2050, the Netherlands will not a ‘finished product’. Over the next thirty years and beyond, new and different challenges will emerge, wishes and insights will change and new choices will have to be made. It is essential that we continue to monitor developments, needs and possibilities and anticipate and respond adequately, so that our future perspective and environmental policy remain up to date and relevant. Happily the Netherlands has a highly developed cyclic and adaptive system/framework of environmental, knowledge-related and policy rules, that tie in with the developments and needs of society.

A future perspective

Not everyone shares the same ideals. Some people feel at home in a dynamic metropolis while others prefer to live in a far more rural setting. As the living environment offers greater differentiation, capable of meeting a variety of needs, the necessity for management between these areas will grow. These diverging wishes mean that we must reach consensus on the choices we make, and must be very deliberate in structuring our country. In this future perspective, we have attempted to bring together all our wishes and ambitions.

2.1 A climate-resilient delta



Climate change

To be able to continue to live, work and do business in our low-lying country, by 2050, we have ensured that the Netherlands is secure against the negative consequences of climate change. By switching to a low-CO_2 and circular economy, as part of an international coalition, the Netherlands will be helping to prevent further climate change. Extreme weather conditions will nonetheless be increasingly common: higher temperatures, a higher sea level, wetter winters, severe peak rainfall and dry summers. We have adapted accordingly. By 2050, we will have structured our built environment to be climate resilient and water robust, for example by ensuring sufficient open spaces with water and planting, to mitigate heat stress. Our vital infrastructure – both aboveground and belowground – will also be resistant to extreme weather conditions.

Focus on sectoral goals or an integrated approach

Specifically in relation to subjects relating to safety and health, and in particular in the face of crisis and urgency, the focus quickly shifts to achieving these goals and a rapid response. Many of the threats and opportunities arising from climate change, however, only truly reveal themselves over the course of many years, and coincide, at least partly, with other aspects of structure and management policies.

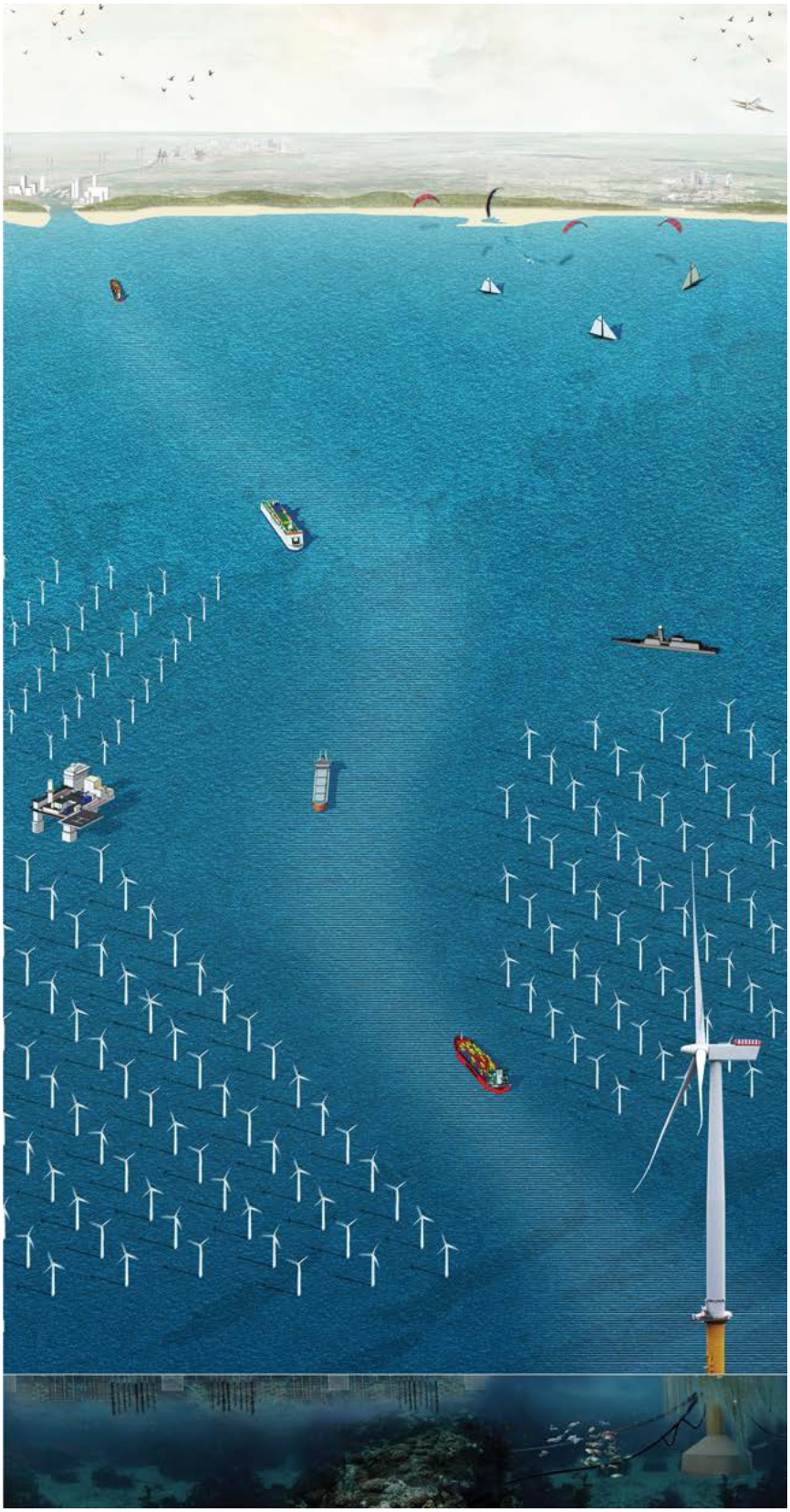
Water safety

The Netherlands is a delta and almost one fifth of its surface area is made up of (sea) water. We have built up centuries of experience in the field of water safety and water management. Water safety, an essential precondition for life in our country, is guaranteed in 2050, even in the lower-lying western part of the Netherlands. We have reserved space in the North Sea for sand dredging, and created space for robust flood defences in the form of strong dykes and a broader coastal strip. In addition, wherever necessary, rivers and streams have been given more room, often in combination with nature and landscape development.

Freshwater and drinking water supply

At the same time, we have access to sufficient volumes of good-quality freshwater. We have taken measures to prevent salinisation, declining groundwater levels and pollution, for example caused by fertilisers, micro plastics and pharmaceutical residues. We are economic with water and have improved our ability to retain and store water. This guarantees the supply of sufficient good-quality water so that the water supply companies need take fewer measures to secure the supply of clean water. Whereas in the past we simply discharged waste water, we are now retrieving growing volumes of raw materials from that water. The reuse of waste water by sewer treatment plants for the extraction of raw materials will have been maximised by 2050.

2.2 Sustainable, competitive and circular



Establishment climate and quality of life

In 2050, the Netherlands will offer an excellent establishment climate and high quality of life, with close ties to the rest of the world. This open character to a considerable extent determines our prosperity and wellbeing. We therefore attach huge importance to cross-border relationships and accessibility. The Netherlands has a high-quality system of education and scientific research with excellently performing institutions and centres of innovation, with space for talented researchers and knowledge workers from home and abroad. Our country is well connected to markets and developments outside our national boundaries, and is an integral part of international cooperative ventures. At the same time, we are not naive, and guarantee the security of data and knowledge in the Netherlands. In 2050, the Netherlands is still one of the world's five most competitive economies.

Futureproof

One key principle is that our economy remains futureproof. Sustainability and growth must go hand in hand. This means we have cast aside polluting methods of production and consumption that cause harm to the living environment. Against that background, the Netherlands has joined forces with other countries to create a sustainable and circular economy; an economy with a high earning potential and consistent growth that enables us to maintain our levels of prosperity while at the same time contributing to a stable climate with the lowest possible levels of harmful emissions and minimal dependency on finite fossil resources. This is fully in line with the Paris climate goal of being almost entirely climate-neutral by 2050. By 2050, the target of having a 100% circular economy will also have been achieved. In other words, we no longer produce any waste and our resources are constantly reused, without passing on the problems to other areas or shifting them to future generations.

Align with investment cycles of the private sector or regulate?

In the majority of industrial sectors, sustainability will be born out of innovation, but given the task facing us, the Netherlands does not have the time to rely on innovation, alone. Specific measures can be introduced to accelerate the implementation of innovative technologies.

On the one hand this will help stimulate inventiveness and innovation so that the Netherlands can improve its competitive edge, to make the world a cleaner place. On the other hand, measures imposed unilaterally can result in rising costs, the blunting of the competitive edge and even the worsening of the environmental situation as a result of the transfer of production to other countries.

Climate neutral

Our ambition is for us to have jointly achieved the transition to 100 percent circular by 2050, and to have achieved the best possible integration of renewable energy in our living environment in a manner and according to an approach that fully includes residents and users, so that they too can enjoy the economic benefits. We will enable the creation of a robust, reliable and safe main network of pipelines to bring about the transition to a circular economy and low-CO_2 energy supply. This includes new, sustainable infrastructures, production units and storage locations such as charging stations and charging centres, supply stations and generation units for hydrogen (for example at locations where offshore electricity is brought ashore), networks for residual heat and underground CO_2 storage.

By 2050, the use of renewable heat from geothermal and aquathermal sources will have become mainstream. There are more onshore and offshore wind energy farms, far more solar panels on roofs, new high-voltage power lines and storage locations (wherever possible belowground). Local power supply facilities have been realised through the involvement of local residents. Houses and buildings are energy neutral or even energy positive. By 2050, we will have succeeded in carefully integrating all these developments or creating new landscapes, with minimum levels of nuisance for people and the ecosystem. This has for example been achieved by planning commercial activities and the generation of renewable energy as close together as possible.

Circular economy

The circular economy will have a tangible effect on our environment. The underlying principle is that the resources and materials used in buildings, roads and engineering structures such as viaducts and bridges retain their value so that no waste flows remain following the use phase. This will require a different approach to design involving safe materials, and products and processes that no longer cause any harmful emissions or other risks throughout their lifecycle and which as a consequence represent negligible health risks (*safe-by-design*). It will also require new logistic concepts for which the Netherlands, as the leading distribution country for Northwestern Europe, offers an excellent starting point. This is an essential precondition for achieving a circular economy and a safe living environment. A circular economy is not possible without a stable ecological system with sufficient biodiversity. Nature provides us with our resources and materials, as well as providing other ecosystem services such as air purification and water storage.

Tension between the transition to a circular economy and guaranteeing environmental quality

A circular economy means huge changes in products, production processes and production chains, and in tackling waste and stocks. The consequences of this transition on transport flows, use of space, the environment and security remain uncertain. Although lower energy consumption levels, reduced CO_2 emissions and less reliance on fossil resources appear favourable, inappropriate reuse can result in a whole variety of risks to security and health. At the same time, treating resources as waste and in response turning to dumping or incineration also has negative effects on the living environment.

Combining functions

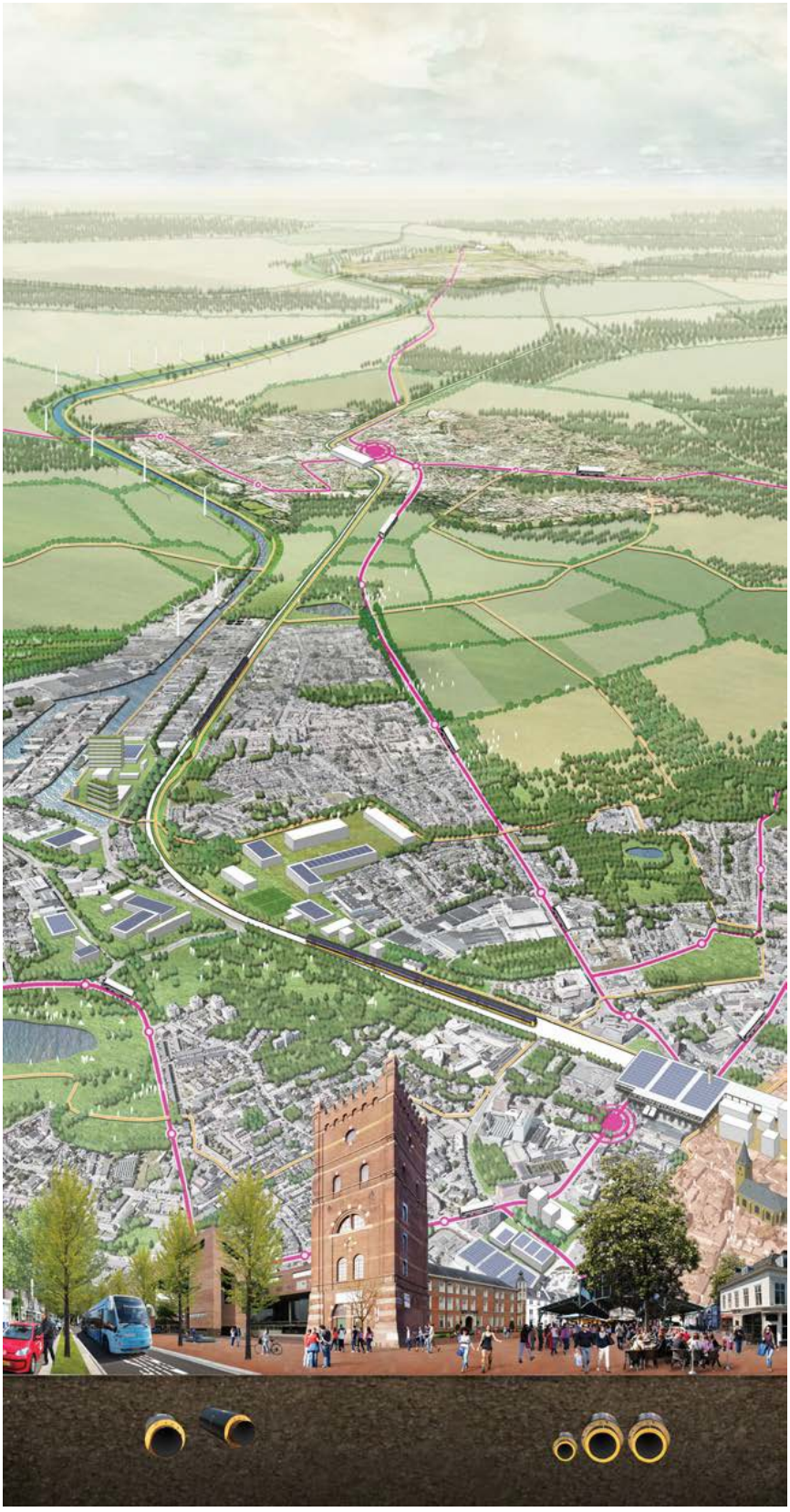
The new sustainable economy will continue to exist for the coming decades alongside the current linear, fossil economy. During this transition period, the demands on space are potentially greater. The secret will be to combine different functions without increasing the risks and negative environmental consequences.

This can for example be achieved by entrusting an additional role to the five existing clusters that house energy-intensive industry (port of Rotterdam/Rijnmond, Port of Amsterdam/IJmond/North Sea Canal area, Eemshaven/Delfzijl, Vlissingen/Terneuzen and Chemelot/Zuid-Limburg). All these areas occupy a key position in the production of renewable resources that also provide energy to the built environment. In respect of energy, residential and working areas will be more closely intertwined.

Benefits for society

The result is an economy that generates huge social benefits in terms of jobs, innovation, new economic activity and export opportunities, and improved health for the residents of the Netherlands and beyond, with attractive towns and cities and superb residential and working locations. In combination with excellent access by air, water and land, our country will continue to attract international businesses and institutions, and serves as a breeding ground for innovation, start-ups and new developments. In 2050, we will still have sufficient space for the development of our key ports and airports (including the mainports), the knowledge-intensive manufacturing industry (Brainport), knowledge clusters, Internet exchanges (digiports) and topflight locations for horticulture (greenports), although their appearance will have changed, by this time.

2.3 Quality of life in urban and rural regions



Everyone wants to live pleasantly in a healthy and safe environment, in a town, city or smaller municipality, within easy reach of work and local facilities. The goal is to achieve good-quality housing for all these groups that matches regional housing demand, with planting in the immediate vicinity. To a fundamental degree, quality of life consists of an attractive and familiar living environment with close ties between town and country. We aim to achieve quality developments for our towns and villages towards 2050. Instead of unbridled expansion, we want controlled and carefully considered growth where necessary, with the needs and wishes of residents and users as the underlying principle.

Housing diversity

Our towns, cities and villages of the future are varied and accessible to all, adapted to the changing composition of the population. Homes are disconnected from the gas supply, and are sustainable. Villages and cities are healthy and safe; air quality has massively improved as compared with the current situation; noise nuisance has been reduced, and environmental safety, road safety, physical and social safety have been improved. We live in inclusive, social communities where everyone has the opportunity to participate in social life, with possibilities for social interaction, suitable for young and old, through the building of homes for life. In designing the physical living environment, we guarantee sufficient public consultation, dialogue and involvement, and take into account the wide variety of interests and lifestyles.

The appearance of our towns, cities and villages will have changed by 2050. Housing, work, nature, public space and facilities will be far more integrated. There is more building density, fewer unoccupied buildings and less decay, more green and more water. At certain locations there will be more higher building, but always of good quality and always reflecting the historical character and utilising the strength of design. We will ensure that the specific, valuable characteristics of our towns, cities and villages are at least preserved, or have developed further.

An urban or rural environment

In the short term, it is often faster and cheaper to develop housing and even commercial buildings in more rural areas. However, at a certain point, investments in infrastructure become necessary and that changes the cost structure for urbanisation processes inside or outside existing urban areas. Additionally, plans for urbanisation in rural areas conflict with ambitions in the field of landscape and nature, while increasing the density of existing urban areas can conflict with ambitions in the field of health and nuisance.

Netherlands Urban Network

In 2050, more people than is presently the case will be living in cities and urban regions, which themselves are becoming increasingly important for our economy. At the same time, a substantial proportion of the population will continue to live and work in more rural regions. The strength of the Netherlands lies in its polycentric network structure of urban and rural areas of various sizes and with different dynamics, which function as a single, complementary system, thanks to the quality of the transport and mobility network. The beating heart of the country and the economy is the Netherlands Urban Network. The core of this network is located in the broad girdle that makes up the middle of the Netherlands, centred around the Randstad conurbation (Amsterdam, Utrecht, Rotterdam-The Hague), Amersfoort, Zwolle, Arnhem-Nijmegen and the ribbon of cities in Brabant). The majority of the population lives and works in this core zone. Nonetheless, the Netherlands Urban Network also includes offshoots from the broad girdle (Groningen, Twente, Maastricht, Leeuwarden and Middelburg). Compared with many foreign metropolitan centres, even our largest cities are relatively small. That makes the links, roads and railways between and within these regions so essential for our country and they are what ensure that the Netherlands Urban Network continues to function as a single unit towards 2050.

'National efforts concentrated or spread across the Netherlands'

The economy and population numbers are concentrated across the broad mid section of the Netherlands. Strengthening the economy and enhancing the living environment in that area will generate the greatest yield. However, economic profits flow into the region where they are generated and abroad. At the same time, the most complex tasks are also concentrated in this central area. These aspects together make national government efforts concentrated on those regions the obvious step.

Nonetheless, there are equally unique opportunities and tasks in the rest of the Netherlands while these regions with a relatively smaller but still substantial economy only profit to a limited extent from any growth in the larger (urban) regions[16]. Moreover, national government is there for the whole of the Netherlands, not just a limited part. On top of that, quality of life is not limited to just economic growth.

Pleasant residential environments

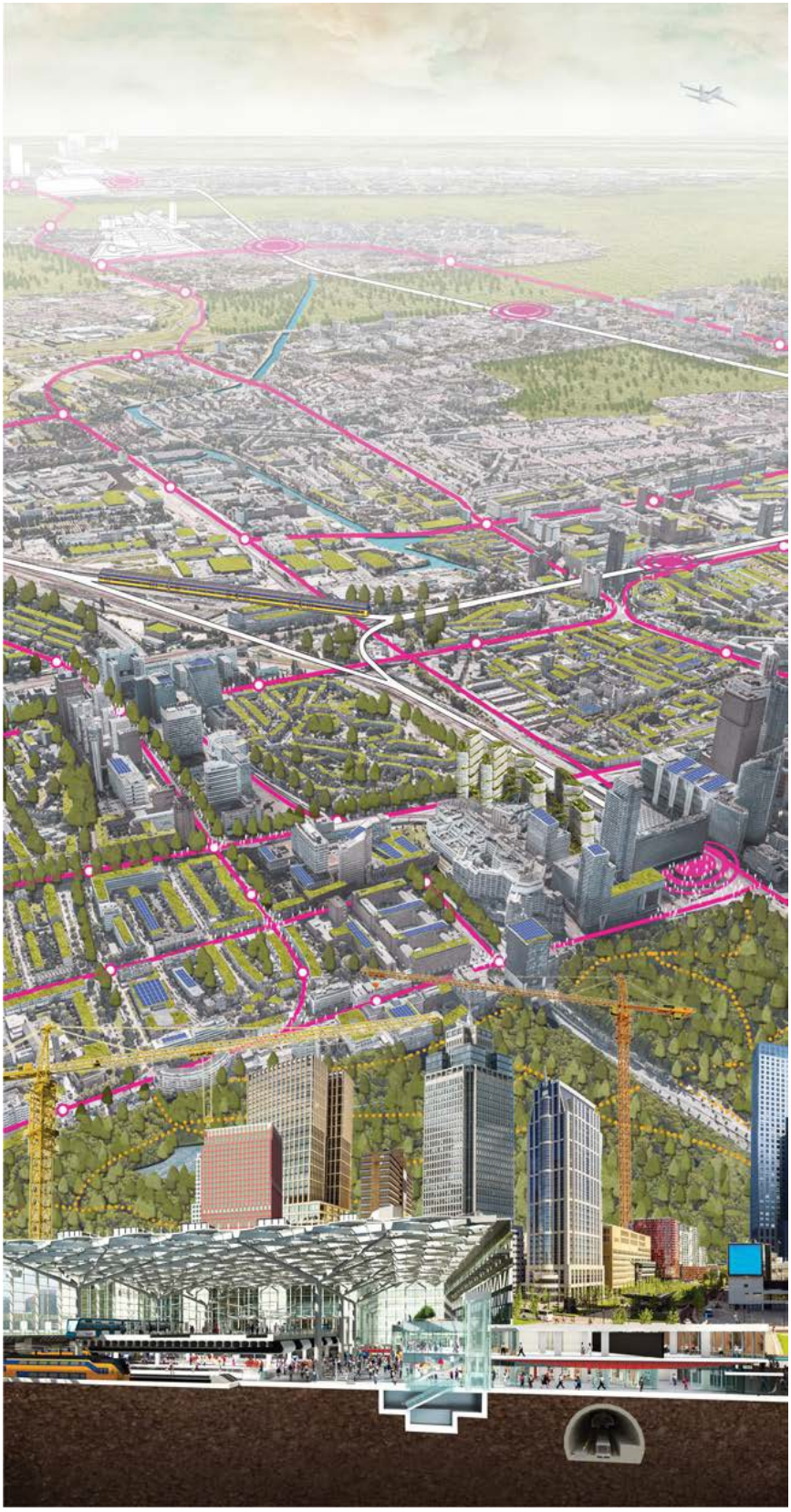
The further growth in urbanisation has contributed to the increased sustainability of the Netherlands, and a good quality of life. In the future, too, we will continue to cherish the small-scale character and diversity of our cities and villages. Urban growth has to a considerable extent been facilitated within existing urban areas, but also at carefully selected and structured locations beyond. Building has taken place where demanded and in line with the needs of the various target groups, including new home owners. Much housing has been created for the ever growing elderly group, and the layout of towns and villages and the organisation of public transport, healthcare and the retail trade has been targeted at that group. We offer affordable and appropriate housing for all, while further stimulating the quality, liveability and identity of our cities. By introducing new concepts in urban architecture, we have created new forms of mobility and pluriform residential environments that are pleasant to live in for all age groups. New developments have taken place at easily accessible locations.

Peace and space

Certain parts of the country will be less densely populated in 2050 than in 2020. We have made permanent use of the potential of these regions. New (economic) initiatives, peace and space have delivered new boosts to these regions so that they remain viable and vital.

[16] Ministry of the Interior and Kingdom Relations, *Tasks in the physical living environment: current situation and developments*. (The Hague 2019)

2.4 Proximity and reliable connections



Diverse pattern of mobility
The way in which we move around will have changed by 2050. Due to changing patterns of work and the way we spend our leisure time, daily life has a less fixed structure. This in turn means a more diverse pattern of how and when we move around (more 'crisscross' mobility and at different times).

Excellent accessibility
Excellent accessibility is crucial. With that in mind, by 2050, we have created a sound and reliable infrastructure as part of a safe, robust and sustainable mobility system. This applies both to intercity and intra-city links and links to and between the country's core economic areas, but also to cross-border connections. How will people in 2050 make use of all the new forms of mobility that will become available by that time? What is the share of home working in the new (knowledge) economy? Answering those questions today is effectively impossible. We can however combine technical possibilities with our ambitions.

We operate a high-quality, coherent urban, regional and national mobility network for (autonomous) cars and trains, a well-developed network for pedestrians and cyclists, a smoothly running network of waterways and excellent connections by air, for both passengers and cargo.
The national public transport network offers the Netherlands Urban Network rapid and comfortable connections. In the broad central girdle of the Netherlands (the Randstad conurbation, Amersfoort, Zwolle, Arnhem-Nijmegen and the ribbon of cities in Brabant) the range of public transport services has been intensified. The urban regions are directly connected to the international HSL network while border regions enjoy links to HSL stations over the national borders, via IC connections. Given the expected developments (in price), it seems likely that by 2050, the vast majority of movements in the Netherlands will take place by (autonomous) car. Those movements must be part of an integrated mobility system that makes use of parking facilities and transfer hubs at the periphery of our regions or cities; public transport, bicycles and pedestrian mobility will all play a key role within these urban regions. Even if autonomous vehicles become commonplace, in many cases we will not want to (fully) open up our (inner) cities to that form of mobility.

Travel will be made as pleasant as possible using digital technology at a high security level. Demand-driven transport (as part of *Mobility as a Service*) is widely accepted in 2050. The opportunities for such demand-based transport will certainly be fully utilised in the more rural regions.
(Autonomous) trains, including light rail services, will continue to be essential in areas where passenger flows remain heavy, for example between urban centres and within urban areas. For middle-distance travel within North-western Europe, the train will offer a sustainable alternative to air travel.
By 2050, the vehicle stock will be clean and sustainable, with electric and possibly hydrogen-powered drive systems. This will contribute to the reduction in CO_2, NO_2 and fine particulate matter.

Proximity or accessibility as the central focus of urbanisation?
Accessibility is of key importance to a competitive city or region that offers a good quality of life. Local businesses and local residents attach huge importance to good access to foreign destinations and to the neighbouring community, for different reasons. However, organising and structuring cities and regions on the basis of accessibility causes much long-distance mobility and the resultant negative effects such as fine particulate matter, noise nuisance, CO_2 emissions and/or harm to nature and the landscape. Organising and structuring cities and regions on the basis of proximity on the other hand results in shorter travel distances, more walking, cycling and more use of public transport.

Proximity

Choices relating to the creation of infrastructure and improved (urban) mobility are linked to the choices of locations for living and working. Proximity will be the guiding principle. By 2050, mobility in our cities will be simpler and more efficient by bicycle, on foot or by (universally available) public transport. In this highly urbanised environment (autonomous) cars will fulfil a subordinate role, thereby taking up far less space. In the development of new residential and working areas, local transport demand and new concepts such as car sharing and the use of demand-based autonomous vehicles (or pods) will be taken into account, right from the start.

Air transport

The growth in world population, rising prosperity and global relations mean that air transport will continue to fulfil an important role, in particular for long-distance travel. This will require a solid international network that connects the Netherlands to the rest of the world. The challenge lies in structuring that network in the safest, most efficient and most sustainable manner possible, by supporting relevant initiatives. CO_2 emissions from air transport will have been clearly reduced by 2050. Possible solutions include more efficient flight routes, more energy-efficient aircraft, renewable fuels and electric-powered flight. For middle distance routes within Northwestern Europe, much air transport has been replaced by the train, which has in turn restricted the growth of air traffic. This has been made possible by the improved connection of the Netherlands Urban Network to the European HSL network.

Sustainability or regulated use

Mobility and air transport are part of the life blood that keeps the Netherlands running both economically and socially. Sustainable mobility can be focused on the use of renewable energy, clean engines, intelligent and collective transport, (electric) bicycles and walking. For certain forms of mobility, such as aviation, however, sustainability faces difficulties. Clean aircraft engines are not likely to be available in the foreseeable future and alternatives such as rail transport for medium-distance travel within Europe will only be available to a limited extent or unable to compete. Regulated use, for example by employing price instruments and strict standards, could be an option, albeit a complex one from an international viewpoint, that also engenders societal and economic disadvantages.

Goods transport

These challenges not only affect passenger transport but also the transport of goods. We will employ a transport system that is both futureproof and climate robust. The Netherlands has maintained its rock-solid position as the most important logistic gateway to Europe, and a major exporter of goods. Our infrastructure for transport by road, water and air, and for the production, transport and trading of goods is excellent, and is of key importance for the transition to a circular economy. Products that have reached the end of their lifecycle will be collected, processed into new materials and redistributed, on a large scale. The circular economy will operate with new logistic concepts, which in turn will result in a completely new meaning for the slogan 'The Netherlands, masters in distribution' (Nederland distributieland).

At the peripheries of our cities, collection and distribution centres will process new and used goods and materials, thereby reducing the volume of goods traffic in the (inner) cities. These centres will be used by both traditional retailers and Internet shops. Large-scale distribution and collection centres are clustered around our ports and at strategic locations along the major international transport corridors.

Increased sustainability means that diesel as the number one fuel for all types of goods transport and inland shipping will have been replaced by clean fuels and power sources, including hydrogen and batteries.

2.1 Healthy and safe, recognisable and natural

In 2050, the primary objective is a safe and healthy life for all. Our living environment encourages a healthy lifestyle. That includes good environmental quality, robust nature, climate resilience and good access to housing, work and facilities, for everyone.

Quality of the water, air, soil and the underground environment

The efforts aimed at improving the quality of the water, soil and air have been successful, by 2050. The loss of healthy years of life due to poor air quality has been considerably reduced, with the ultimate goal of eradicating damage to health entirely (health protection). The same applies to inner cities, in road corridors and around areas of intensive livestock farming. As far as possible, the living environment is free from pollution caused by road traffic. Cars, trucks and buses, ships, motorcycles and mobile equipment no longer emit CO_2 or other forms of air pollution. This goal receives particular attention in locations that combine housing, work and production. For spatial developments, the prevention of infectious diseases has been taken into account. Noise nuisance has also been cut back considerably. Disruptions that can result in damage to health have been mitigated through the introduction of additional measures, also in areas where the density of the built environment has increased. The same applies to odour nuisance.

Damage to the infrastructure, public space and buildings as a result of subsidence has been restricted, by raising groundwater levels and improved building techniques.

Raising or maintaining water level for agricultural production

Water levels in peat pastureland areas are deliberately kept low in 2020, to ensure optimum agricultural production. The peat pastureland landscape with grazing cattle is internationally a unique landscape type. The downside is consistent soil subsidence resulting in economic losses, damage to the landscape and cultural heritage and ever rising costs for water safety. Raising the level will restrict the damage but requires that the land use be adapted to the water-soil system.

Sustainable use of water, soil and the underground environment is guaranteed by taking account of the functioning of the soil and the underground environment as a natural system. Functions have been and will be allocated to those locations that by their nature are most suitable and which match (or have been adapted to) the properties and characteristics of the soil-water system. This helps maintain the balance between utilisation and preservation. Food and material cycles, water cycles and energy cycles have been maintained or re-established, and as far as possible contamination is prevented.

In new spatial developments, aboveground and belowground functions are considered as an integrated system right from the initial stages of planning. The main focus is on three-dimensional spatial planning.

Health-enhancing living environment

In 2050, the living environment will have been structured in such a way that it promotes human health (wherever that can be achieved through interventions in the living environment). The environment itself encourages people to move, including exercise (sport, cycling and walking), play, relaxation and meeting and interaction with others. This can be achieved by introducing more (urban) green, water play areas, cycling and walking routes, benches, green school playgrounds and no-smoking areas. Through the integrated approach to urban development, health gains have been achieved in neighbourhoods that house relatively large numbers of vulnerable groups.

Environmental safety

Environmental safety has risen in 2050, among others thanks to the remediation of high-risk situations and the focus on prevention and risk management, for example in respect of the use of hazardous substances. Backed up by legislation and regulations, the basic level of protection across almost the entire Netherlands has improved considerably so that we are able to live in a safe, healthy and clean environment. Industrial activities are not mixed with public functions or house building and transport routes for hazardous chemical substances no longer pass through residential locations. Industrial activities are instead concentrated along transport corridors and in the ports and industrial areas. In other words, environmental space has been set aside for these functions, and we are cautious about permitting other functions in those areas, thereby achieving improved safety levels.

Space for defence

A secure Netherlands also operates a robust defence policy, in 2050. There is space for the accommodation of defence units, military training areas, airfields, shooting ranges and access to the sea. It remains important that defence locations be distributed right across the country. Nonetheless, certain military activities are clustered and combined at larger locations. As far as possible, operational units are housed at locations within a reasonable distance of the training facilities.

Agriculture, horticulture and nature

In 2050, the vast majority of our territory is still set aside for agriculture, horticulture, and nature. Our agricultural and food supply system for the future has however changed its appearance.

The Dutch agricultural sector has retained its position as a pioneer, but now in the field of sustainable cyclic agriculture. Nature-inclusive cyclic agriculture is now standard practice close to vulnerable nature areas and elsewhere. Nature areas are surrounded by extensively grazed grasslands and other forms of nature-inclusive agriculture. Activities based around recreation, healthcare and landscape management offer alternative sources of income. Agriculture, landscape and biodiversity are mutually enhancing.

Certain crops will no longer grow in the open air, but partially also in an urban environment (vertical farming). On off-land livestock farms, integrated sustainable livestock sheds set the standard. This type of livestock accommodation, where resources and nutrients are used economically and efficiently and where a high level of animal welfare is achieved, is healthy for the animals and for the living environment. These forms of intensive agriculture are concentrated in easily accessible locations, where residual flows from one sector are used as resources for others (fertilisers) and chain companies are clustered together, to avoid unnecessary transport movements.

Food production within the Netherlands or solutions for the needs of society

Dutch agriculture is extremely productive and over the past few decades has constantly reduced health and environmental burdens per unit of product. At the same time, the influence of agriculture in the Netherlands in 2020 has risen too far, based on the huge scale of total production. The burden of nitrogen on water and nature is considerable, fine particulate matter is resulting in health problems and soil subsidence is a clear issue, as are greenhouse gas emissions and damage to the landscape. Reallocating agricultural land for water purification, landscape preservation, nature, recreation, the production of bio resources or the capture of carbon in the soil will contribute to solving a variety of problems facing society, but to date, is insufficiently financially viable for farmers.

The production function of cyclic agriculture remains the starting point for the use of suitable soil types, and space will be provided for that purpose. As a consequence, food can be produced that generates only limited environmental burdens and (in many cases combined with food production) space will be available for nature, housing, landscape, accessibility and renewable energy. This means for example that dairy farming has become more land-based; in other words, animal feed is obtained more from the farm's own land or from the immediate environment, and the emission of harmful substances and greenhouse gases and the loss of nutrients into the soil, water and air have been reduced to practically zero.

New crops are resistant to salinization of the soil. As well as fulfilling an agricultural function, rural areas also supply numerous other key services to society, such as water storage, purification of the air and water, and the storage of CO_2 and raw materials for sustainable production. Fishery has also become more sustainable. Nature and economy remain in equilibrium.

Nature-inclusive development

In the future, the Netherlands will have set aside more space for nature, by more strongly integrating nature and landscape values with other developments. Within new building and development tasks, nature-inclusive development is the standard, both in urban and rural areas. Nature inclusion will become a standard element in design activities. In urban areas, there is sufficient space for nature and green, by 2050, to allow insects a good chance of survival. Soil subsidence in weak soils has been massively reduced, at the latest by 2050. In addition, the area of land under nature has been increased and core areas have been robustly joined together, sometimes via nature-inclusive agricultural areas and sometimes via robust nature links. The wettening and extensification of certain peat pasture polders has resulted in recovery of typical marshland flora (such as the spoon-leaved sundew) and fauna (such as the Eurasian bittern). Buffer zones have been created around nature areas, and water and environmental conditions improved. Planting of new woodland, also intended for storing carbon, is contributing to the recovery of biodiversity and landscape quality. On the basis of the European Birds Directive and Habitats Directive (VHR[17]), the Netherlands has taken up its responsibility to guarantee the continued existence of species and ecosystems, in the long term. This not only applies on land, but also at sea, where we are striving to achieve a good environmental state with sustainable and responsible use.

Landscape, cultural heritage and identity

Our landscapes, our cultural heritage, our national parks and the characteristic appearance of our towns, villages and cities will continue to determine the Dutch identity, in 2050, as they do today. These are essential cultural and historical values that we must preserve for the future. We will aim to maintain a recognisable living environment with a clear character. We must therefore treat our landscape and our cultural heritage with due care. We have taken action to counter the threats of cluttering and the unbridled spread of uncontrolled building.

We have identified a new future for historical monuments such as decommissioned churches, and for more recent heritage such as disused factories. In the transition zones between urban and rural areas, access to the landscape and nature have been improved for recreational use, and businesses have found new sources of income in recreation, nature and landscape management and power generation.

Renewable energy from our own country or freeing up landscapes

Attractive and culturally and historically valuable landscapes generate identity and inspiration, and in that way create intangible and economic values for the establishment climate and recreational environment. A climate-neutral society, however, requires so much space for wind turbines or solar panels that in particular large-scale landscapes and large waters are or will be affected on a huge scale. It is unavoidable that for certain landscapes, the existing qualities and values will come under pressure or will be forced to change. This sometimes results in a wish to spare certain landscapes, but at the same time, it means opting for a larger-scale task and greater change in landscapes, elsewhere.

[17] Directive on the conservation of natural habitats and of wild flora and fauna (92/43/EEC of the Council of 21 May 1992) and the Directive on the conservation of wild birds (2009/147/EC of the European Parliament and the Council of 30 November 2009).

At a number of locations, the changes have been so considerable that - in line with Dutch transition - they form the starting point for designing and developing new landscapes and new high-quality heritage.

The unique cultural, historical, landscape and natural qualities of our Dutch landscape have as far as possible be preserved and enhanced. Wherever possible, new qualities have been added, such as peace and relaxation, expansive views and improved natural qualities. The transition to nature-inclusive agriculture in the vicinity of nature areas is a contributing factor. Landscape elements such as wooded lanes and small patches of woodland have been re-established or improved. The peat pasturelands have been enriched with marshland nature, nature-inclusive agriculture and new crops that suit their wet, open and green character.
Elsewhere, the clear-lined characteristic subdivision of the land in a number of large-scale reclaimed and impoldered landscapes are combined with equally clean-lined blocks of wind turbines. In smaller-scale landscapes, too, like in the Achterhoek and on the Veluwe, life for the local residents and recreational users is still attractive. Wherever possible, functions are combined that contribute to the conservation of nature and landscape values.

2.5 Looking forward to 2050

All in all, we are embracing the new and cherishing what already exists. A Netherlands of this kind will not create itself. We will need to make choices if we hope to reach this destination. Not all of those choices will be equally simple for everyone to accept; not everything can be preserved and in the same way, we cannot make space for all the new ideas. By actually implementing the choices made, we will together build an attractive, healthy and safe Netherlands in which we are all happy to live, now and in 2050.

Explanatory notes to the discussion map: a future perspective for the Netherlands

The discussion map provides an outline picture of what the Netherlands could look like in the future. The Netherlands, as it could look, if we project onto it the wishes and ambitions from the future perspective. The map is specifically not intended as a national target or a final national picture. Before the wishes and ambitions expressed in the NOVI have been realised, we will have to hold many discussions among ourselves, over many barriers, take many more decisions and implement many more programmes and projects. The future has to remain open to all those possibilities.

Our aim is to use the discussion map and the process of working on the map as a vehicle for initiating discussion on the implementation and adaptation of the NOVI: after all, the future perspective itself is an integral part of the adaptive process of the NOVI. With regard to programmes for rural areas an urbanisation, for example, the discussion map is a valuable tool for entering into meaningful discussion about the desired development and layout of town and country.

The result of that discussion can then be reintegrated in the map, thereby creating an ever more realistic and more broadly supported picture of the future of the Netherlands. In that future, new ambitions and opportunities will undoubtedly emerge. That too is part of a cyclic process such as that envisaged for the NOVI.

The texts in this chapter have served as the starting point for the key elements on the discussion map. Wherever there is considerable uncertainty about the localisation of a development, use has been made of icons to represent a proposed development. A certain degree of freedom has been taken in reproducing the key elements in interpreting and elaborating the ambitions, and in a number of dilemmas presented that reflect the principles of the NOVI.[18]

[18] For more information and explanation of the creation of the maps, see Fabrications, Discussion map, a future perspective for the Netherlands. To be published www.nationaleomgevingsvisie.nl

Key

Water safety and room for water and rivers

(Potential for) Water safety

(Potential for) Room for water and rivers

Nature, landscape and green

(Potential for) Water-robust and climate-resilient built environment

(Potential for) Woodland, landscape, linking nature and streams

(Potential for) Nature in large waters

Cyclic agriculture, fishery and marine culture

Potential for cyclic agriculture

(Potential for) fishery and marine culture

Greenports

Industry, logistics and business estates

(Potential for) Logistic hubs and circular and sustainable business estates

International transport corridors including sea ports, inland ports and airports

Airport

seaport

Energy networks

(Potential for) Circular industrial clusters with a role in the energy system

(Potential for) Renewable energy networks (existing electricity network and pipelines)

(Potential for) Heat networks in urban areas based on geothermal and residual heat

Energy production

(Potential for) onshore wind and solar farms (combined with agriculture, woodland or nature functions)

(Potential for) Offshore energy generation combined with fishery, marine culture and nature functions)

(Potential for) Offshore conversion facilities

Urban regions and accessibility

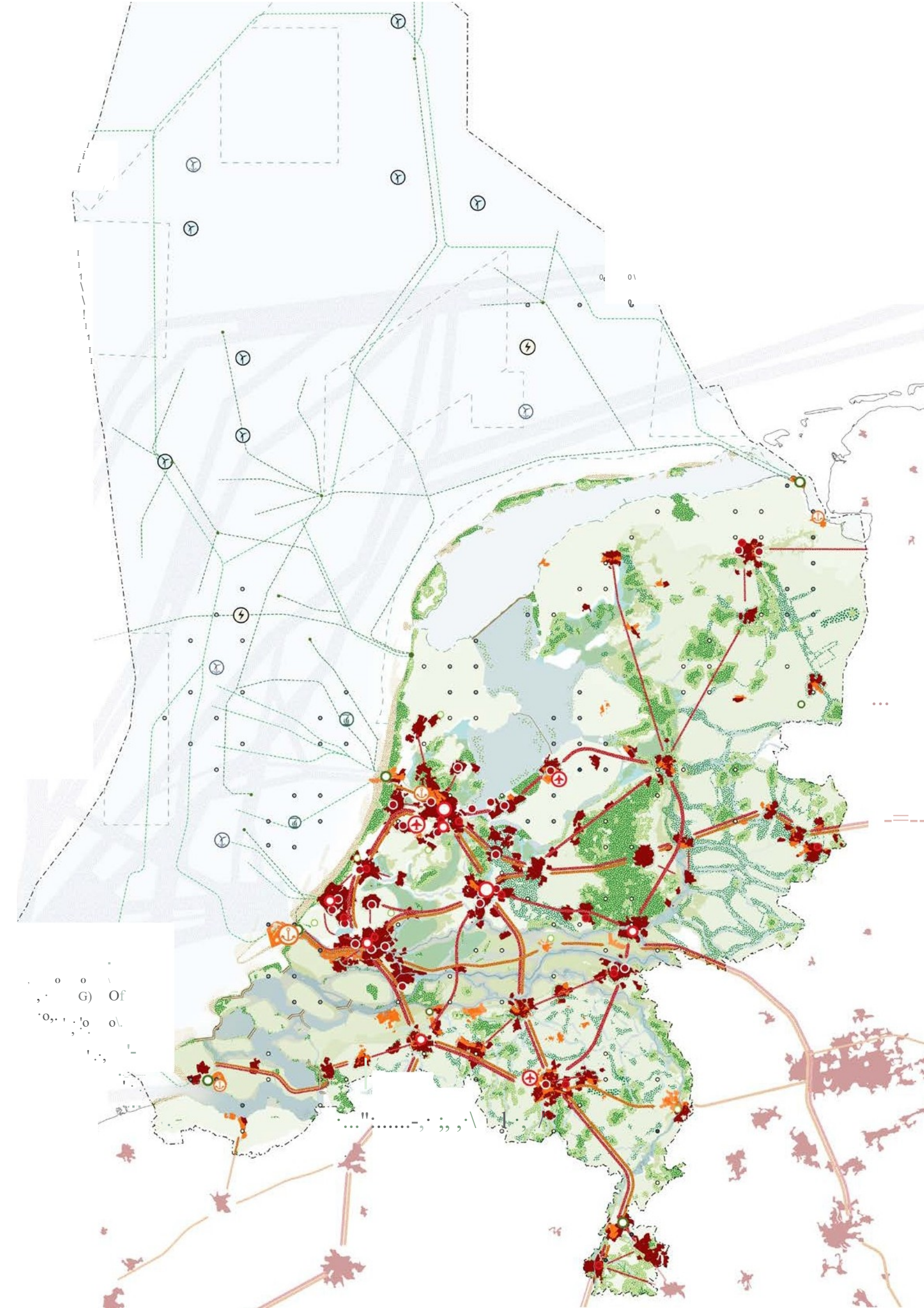
Attractive, recognisable and healthy cities and urban regions

Main link between urban regions (including seaports and airports)

Business estates and office locations / development space for knowledge clusters

Search areas for large-scale development

Multimodal hubs



Water safety and room for water and rivers

Key

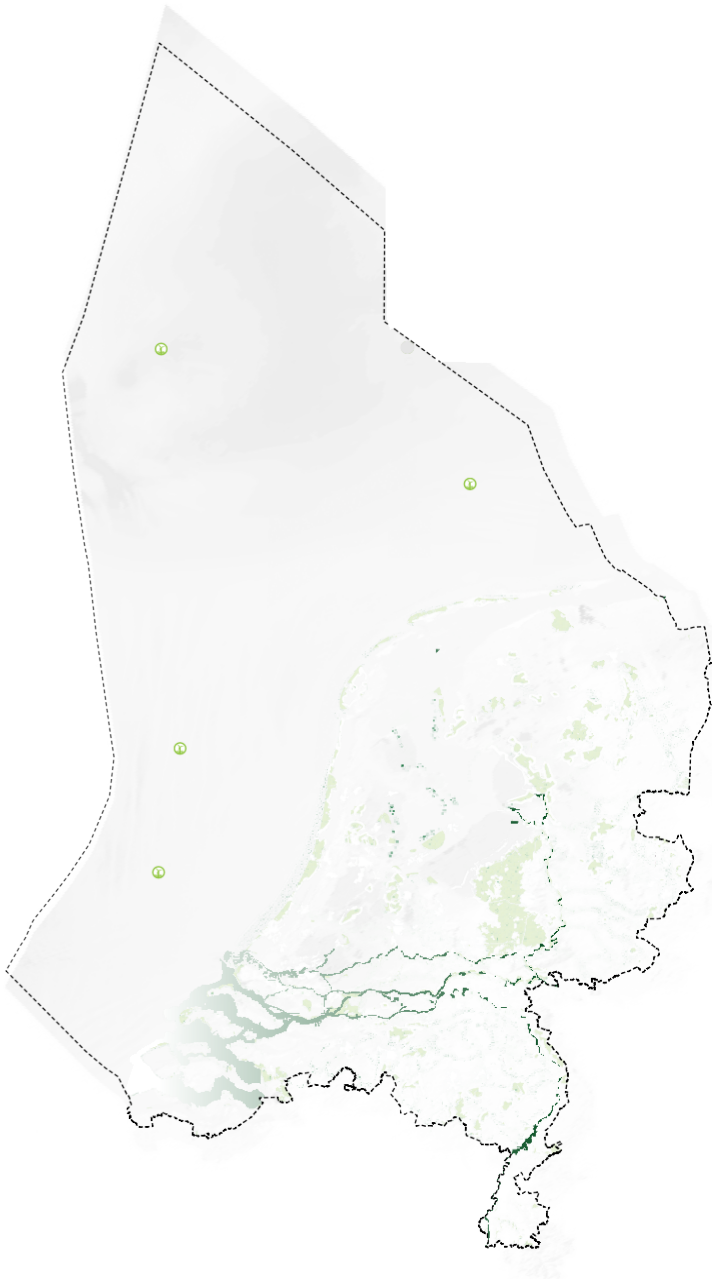
(Potential for) Water safety

Room for widening coastal zone
Shallow pre shores
Strong dykes
Delta flood defences

Room for water and rivers

Room for rivers
Retaining and storing water
Room for streams

More natural level management



Nature, landscape and green

Key

(Potential for) Water-robust and climate-resilient built environment

Strengthening and developing water and green in around urban areas

(Potential for) Woodland, landscape, nature links and streams

Strengthening woodland and onshore nature areas (including Natura 2000 and national parks)

Nature-inclusive functions in zones around existing nature areas

Nature development combined with stream recovery

Wetter peat pastureland

Rivers

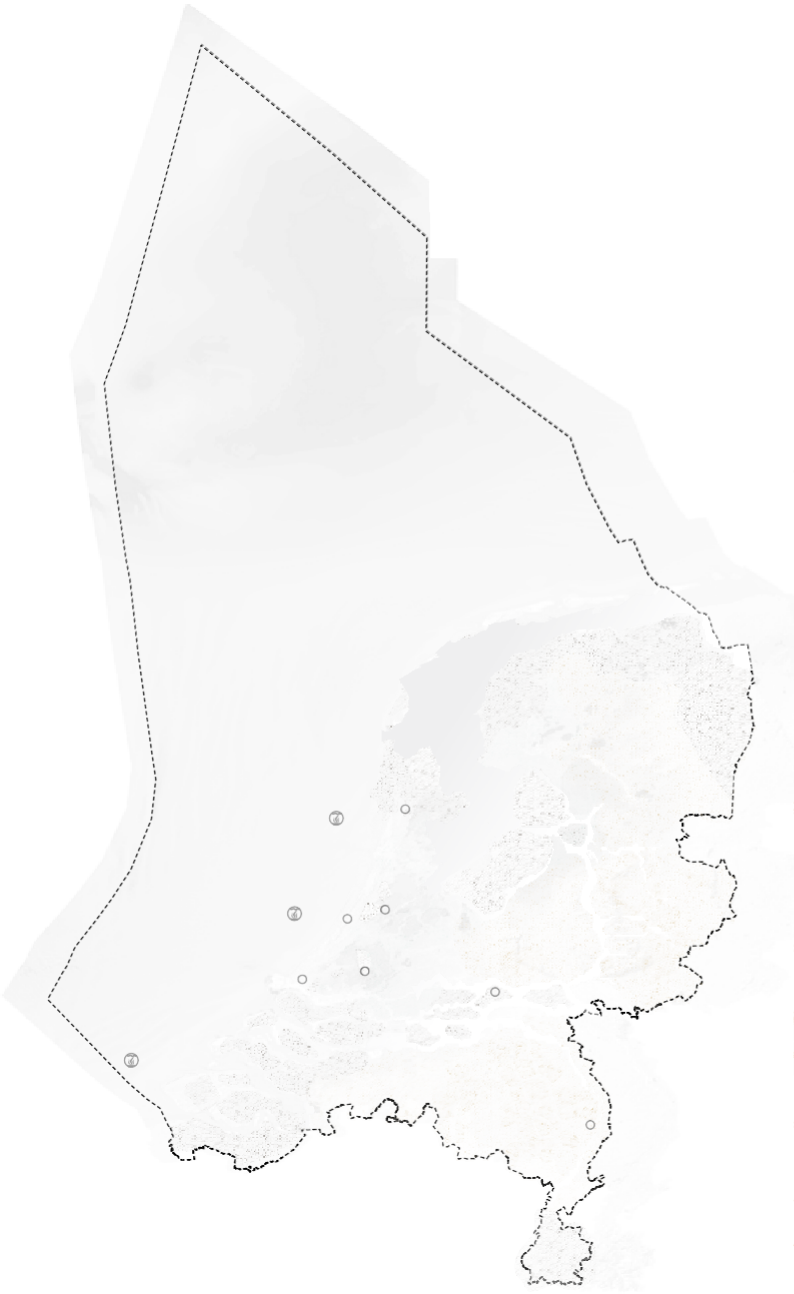
(Potential for) Nature in large waters

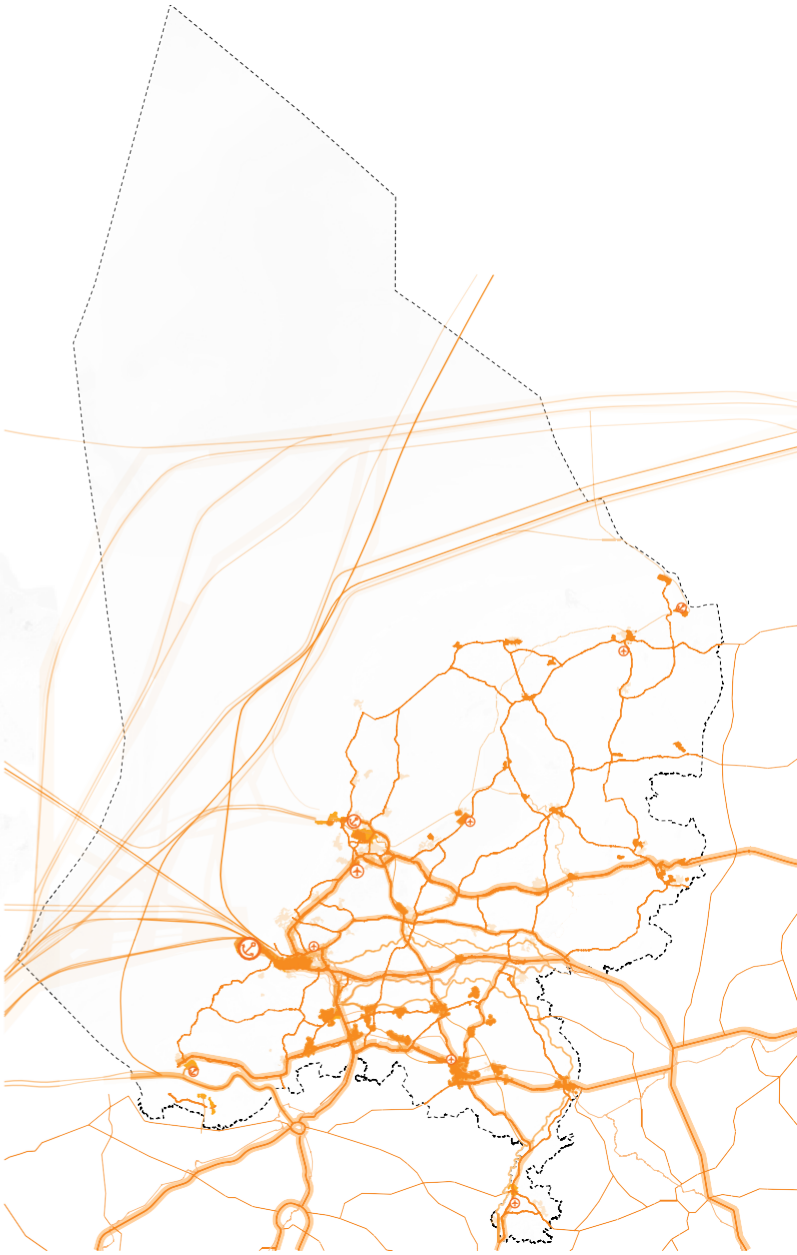
Pre-shore development in the IJsselmeer area

Underwater nature

Reinforcing existing offshore nature areas (Natura 2000 and other areas for nature recovery based on North Sea Agreement)

New marine nature development
linked to other functions such as wind energy





Cyclic agriculture, fishery and marine culture

Key

Potential for cyclic agriculture

Cyclic agriculture as primary use (clay, sand, löss)

Peat pastureland

Nature-inclusive and extensive cyclic agriculture around nature

Greenports, connected to international transport corridors

Potential for fishery and marine culture

Marine culture around wind turbines in shallows

Fishery with partial restrictions due to other use

Industry, logistics and business estates

Key

(Potential for) Logistic hubs and circular and sustainable business estates

Logistic centres along transport corridors (XL and L) Sufficient space for circular and sustainable industry clusters and business estates

Potential for city distribution and collection centres

International transport corridors including seaports, inland ports and airports

International transport corridors (road, rail and water) in relation to seaports and airports

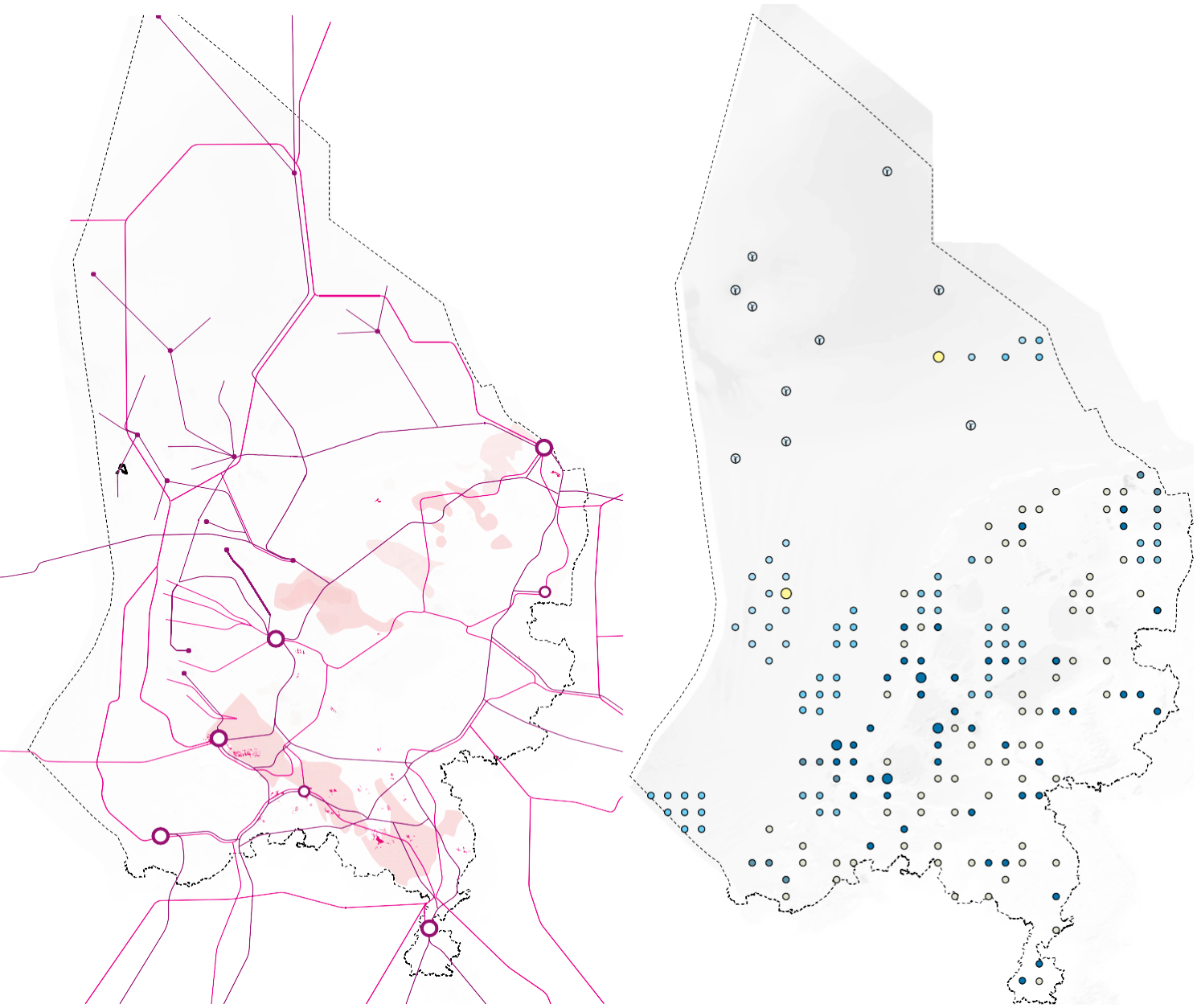
National trunk road network

Shipping route (sea) Navigation

channels (inland waters)

Seaport

Airport



Energy networks

Key

(Potential for) Circular industrial clusters with role in the energy system

- Sustainable and circular industry clusters with a role in the energy system (shore landing offshore wind, CO2, CO2 neutral gases, heat)
- Sustainable and circular business estates

(Potential for) Sustainable energy networks (existing electricity grid and pipelines)

- Pipelines High Voltage grid (380
- Kv)
- Potential for energy exchange
- CO2 storage in old gas offshore gas fields

(Potential for) heat networks in urban areas based on geothermal and residual heat

- Heat generation from geothermal sources (knowledge about the potential outside this area is still being developed)
- Regional heat network in urban areas (picture still developing) More information about potential sustainable heat supply in the built environment will follow from the heat guideline)

Energy production

Key

(Potential for) Onshore wind and solar parks
(combined with agriculture or nature functions)

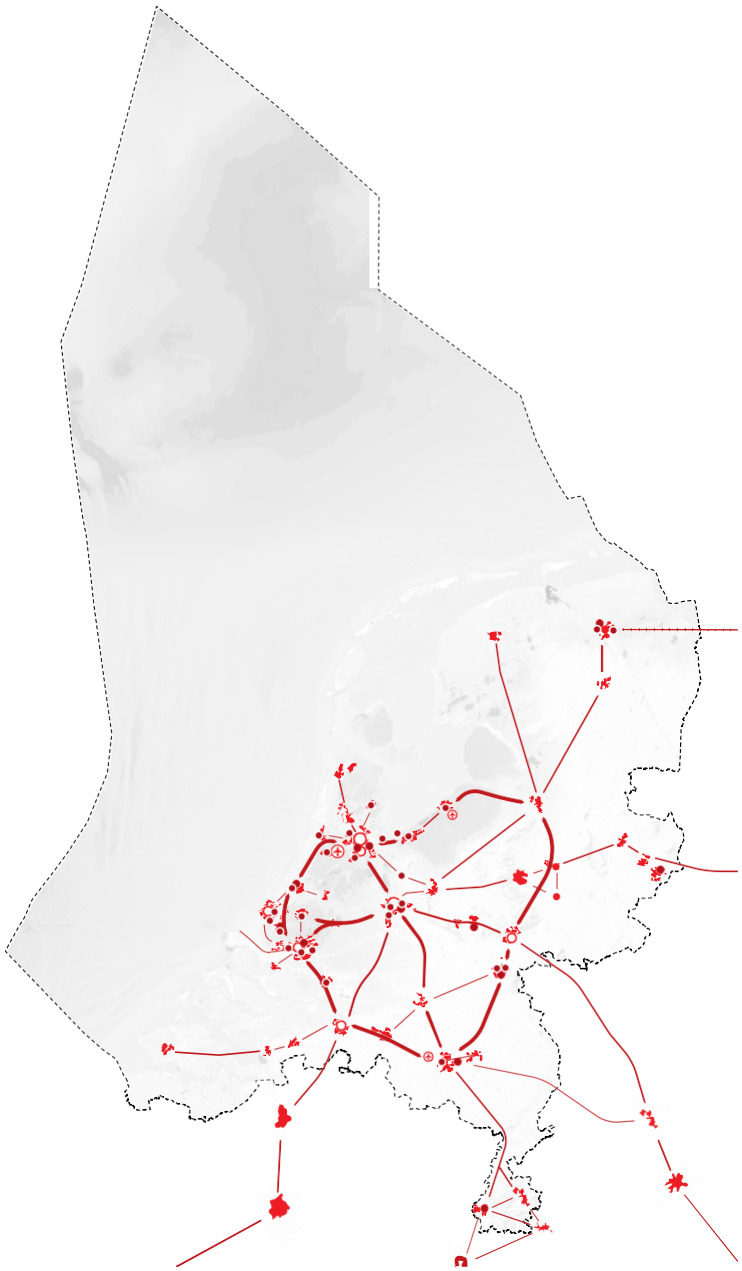
- Wherever possible solar on roofs
- Reinforcing the existing and planned concentrations of onshore wind
- turbines New locations for wind turbines in port areas
- New locations for wind turbines linked to landscape characteristics

(Potential for) Offshore energy generation
combined with fishery, marine culture and nature

- functions Offshore wind roadmap 2023
- Offshore wind roadmap 2030
- New locations for offshore energy generation (wind and solar) beyond 2030 in combination with other functions

(Potential for) Offshore conversion facilities

- Offshore hydrogen production



Urban regions and accessibility

Key

Attractive, recognisable and healthy cities and urban regions

- Increased density in existing urban area
- Space for carefully selected and planned locations outside existing urban areas
- Search areas for large-scale development in regions with the greatest demand

Business estates and office locations

- Development space for knowledge clusters

Primary link between urban regions (including seaports and airports) High-value, sustainable and multimodal connections between regions

- Potential high-value regional mobility
- Multimodal hubs (top-5, ICE and HSL stations)
- Airports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3. National interests and tasks in the physical living environment

The physical living environment is a shared responsibility of municipalities, water authorities, provinces and national government. Certain tasks and interests exceed the local, regional and provincial level, and call for political and administrative attention, at national level. These national interests are in many cases also sectoral interests. The existing national policy for these interests is laid down in a series of structural visions and other policy documents. At present, many of them require no substantive changes. This chapter describes all the national interests with regard to environmental policy. At the same time, the national tasks are formulated, and the role of national government outlined.

The NOVI focuses specifically on those developments that bring together multiple national interests. This chapter is therefore concluded with four priority tasks in respect of which choices will have to be made between national interests.

3.1 Relevance of national interests

National interests are the substantive interests of the physical living environment with regard to which national government sees a role for itself, and for which the Cabinet is politically accountable. The promotion of those national interests and the realisation of the resultant policy objectives and tasks are not achieved by national government operating alone. Many interests are shared, and many responsibilities tie in with each other. As a consequence, national government is required to work in harmony with municipalities, water authorities and provinces, and other stakeholders. Together, it has been determined or must be determined which policy instruments should be deployed by whom in realising these national interests as effectively and efficiently as possible. The same applies for to the resultant policy objectives and tasks.

System responsibility and result responsibility

National government bears system responsibilities for all national interests. For a number of interests, it in fact has even further-reaching responsibilities. As regards system responsibility, national government is responsible for ensuring that the system functions smoothly, so that each party within the system can satisfactorily fulfil its role. If the bodies responsible for achieving results (for example municipalities or provinces) fail to reach the targets in respect of the national interests, national government must investigate why. If necessary or desirable, by adapting the system or by offering support to the responsible parties, national government then attempts to empower these other parties, so that they can achieve their goals. In terms of responsibility for results, national government itself bears final responsibility for achieving the goals, and can be directly called to account.

3.2 National interests and tasks

The list below describes the national interests on which national government has set its sights in the NOVI. The first three of these national interests are of a more overarching character than the remainder. The national interests are listed in random order. Where necessary, these national interests also apply in full, to the underground environment

The NOVI refers to the following national interests:

1. Fostering sustainable development of the Netherlands as a whole and of all elements of the physical living environment.
2. Achieving a good-quality living environment.
3. Guaranteeing and strengthening cross-border and international relations.
4. Guaranteeing and fostering a healthy and safe physical living environment.
5. Ensuring that housing stock matches housing demand.
6. Guaranteeing and achieving a safe, robust and sustainable mobility system.
7. Maintaining and developing the main infrastructure for mobility.
8. Guaranteeing good access to the living environment.
9. Ensuring national security and offering space for military activities.
10. Mitigating climate change.
11. Achieving a reliable, affordable and safe power supply, that is CO_2-neutral by 2050, and the accompanying main infrastructure.
12. Guaranteeing the main infrastructure for the transport of substances via (pipe)lines.
13. Achieving a future-proof, circular economy.
14. Guaranteeing water safety and climate resilience (including vital infrastructure for water and mobility).
15. Guaranteeing good water quality, sustainable drinking water supply and sufficient availability of freshwater.
16. Guaranteeing and strengthening an attractive spatial-economic establishment climate.
17. Achieving and maintaining high-quality digital connectivity.
18. Developing sustainable food and agricultural production.
19. Preserving and strengthening cultural heritage and landscape and natural qualities of (inter)national importance.
20. Improving and protecting biodiversity.
21. Developing sustainable fishery.

The national interests are briefly explained below. For a further explanation of policy, the tasks and the roles for national government that relate to the national interests and which elements of existing policy will be taken up in the NOVI, refer to the Explanatory notes. The Explanatory notes are an integral part of the NOVI.

1. Fostering sustainable development of the Netherlands as a whole and of all elements of the physical living environment.

The seventeen Sustainable Development Goals (SDGs) identified by the UN are important starting points for Cabinet policy for our country and as such also for the physical living environment.[19] The figure: 'Relationship between the Sustainable Development Goals (SDGs) and the domains Biosphere, Society and Economy' emphasises the interdependency between biosphere (including the soil-water system, society and economy. Of the seventeen SDGs, ten relate directly to the physical living environment. Sustainable development has not only been agreed internationally by the Dutch Cabinet, but is also of fundamental national and international interest in ensuring that our country and the world remain a suitable place to live, for future generations. Production and consumption within the limits imposed by our planet remain of key relevance. 'Sustainable development, the suitability of the country as a place to live and the protection and improvement of the living environment' are the overarching goals of the Environment and Planning Act and hence of the National Strategy on Spatial Planning and the Environment.

[19] Sustainable Development Goals (SDG's), *About the Sustainable Development Goals*, see https://www.un.org/sustainabledevelopment/sustainable-development-goals/

Task

The task is to implement the Sustainable Development Goals (SDGs) relevant to environmental policy. Since this particular interest relates to overall Cabinet policy, it is also reflected in other national interests:

- *Zero hunger* (SDG 2) relates closely to our agricultural production and is reflected in the national interest 'Developing sustainable food and agro production';
- *Clean water and sanitation* (SDG 6) is reflected in 'Guaranteeing good water quality, sustainable drinking water supply and sufficient availability of freshwater';
- *Affordable and clean energy* (SDG 7): 'Achieving a reliable, affordable and safe power supply, which is low-CO_2 in 2050, and the necessary main infrastructure';
- *Industry, innovation and infrastructure* (SDG 9) is reflected in 'Guaranteeing and achieving a safe, robust and sustainable mobility system', 'Achieving a future-proof, circular economy' and 'Guaranteeing and strengthening an attractive spatial-economic establishment climate';
- *Sustainable cities and communities* (SDG 11) is reflected in 'Achieving a good-quality living environment' and 'Mitigating climate change';
- *Responsible consumption and production* (SDG 12): is reflected in 'Achieving a future-proof, circular economy';
- *Climate action* (SDG 13) is reflected in 'Mitigating climate change', 'Achieving a future-proof circular economy' and 'Achieving a reliable, affordable and safe power supply, which is low-CO_2 in 2050, and the necessary main infrastructure';
- *Life below water* (SDG 14) and life on land (SDG 15) are reflected in 'Improving and protecting nature and biodiversity'.
- *Partnerships for the goals* (SDG 17) is further elaborated in chapter 5

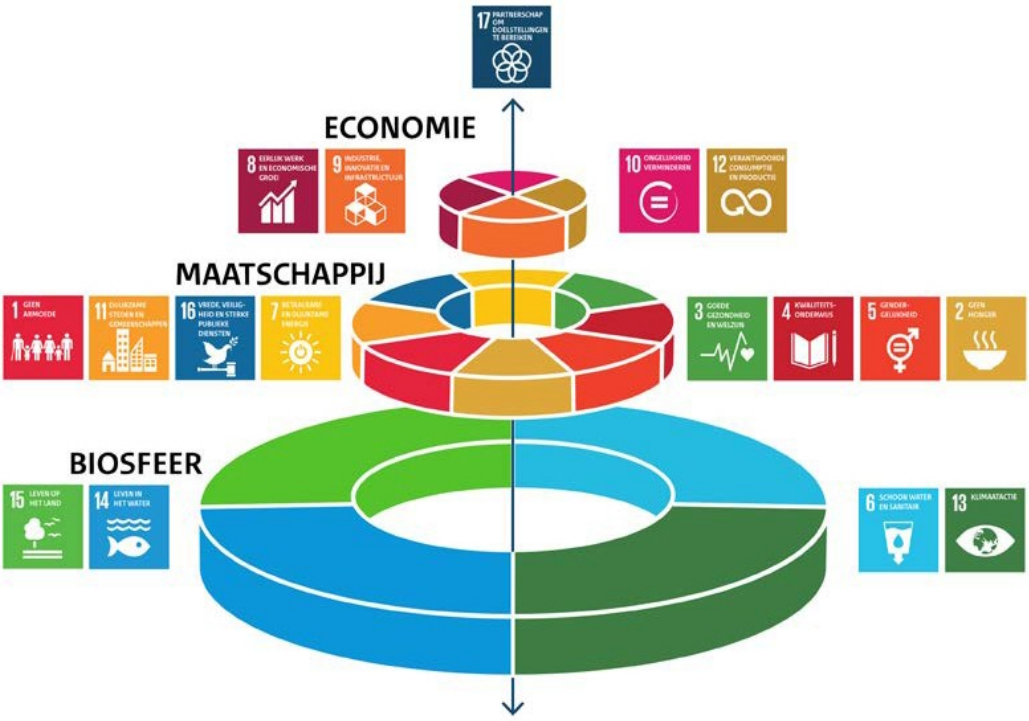


Figure: Relationship between the SDGs and the domains Biosphere, Society and Economy

The SDG that relate to natural resources, such as soil, (ground) water and oceans appear in the domain biosphere.
The arrow indicates? the relationship between biosphere, society and economy. The arrow on the one hand emphasises how non-sustainable social behaviour can have huge consequences for the biosphere (including the soil-water system), and on the other hand shows that a clean, healthy and smoothly functioning biosphere is the basis for smart and sustainable utilisation and offers huge opportunities for achieving the development goals for society and economy[20].

Role of national government

Based on its system responsibility, in elaborating the NOVI and implementing the various national interests, national government will consciously involve these overarching objectives in its policy choices. Based on that role, national government has included the Sustainable Development Goals in drawing up a tailored assessment framework of the NOVI SEA.

2. Achieving a good-quality living environment

Good environmental quality is part of the central objective of the Environment and Planning Act, and as such is of national importance. This refers to the importance of cultural heritage, architectural quality of built structures, the quality of our towns and cities and the quality of nature and landscape. It also refers to the human perception of the physical living environment, the effects that environment has on people and the intrinsic value awarded by society to the identity of areas and species of plants and animals.

The term quality of the living environment employed in the NOVI refers both to the spatial quality and the environmental quality of the physical living environment. Environmental quality relates to values we award to a healthy environment in which to live and work. It refers directly to such specific elements as air quality, noise nuisance, odour nuisance, environmental safety and the quality of water and soil.

Social cohesion and economic vitality are also integral elements of achieving a good-quality living environment. Concrete implementation and operationalisation of this quality will be achieved in the form of actual spatial interventions.

[20] Source: Gerben Mol et al, Sustainable development goals: achieving transitions with sustainable soil and land use, 2017, https://www.wur.nl/upload_mm/b/d/6/370f5e93-e9fa-44c5-8795-6b55d3d55c48_SDGs%20Realiseren%20met%20Duurzaam%20Landgebruik.pdf

Task

The task is to achieve a good-quality living environment. The current quality of the living environment is above average (in relative terms when considered with regard to international standards) since in practically all corners of the Netherlands, a basic level of protection for environmental quality has been achieved with the assistance of legislation and regulations. Nonetheless, there are still major challenges in improving the quality of the living environment. After all, even at the current basic level of protection, air pollution remains harmful to health. In the same way, drug residues in water, the risk of incidents at companies working with harmful substances or tackling as yet unknown environmental risks such as those caused by nano materials, call for an active and ambitious approach. Developments such as the rise in the number of homes, commercial premises and offices, the spread of infrastructure, the growth of power generation and energy storage, water and recreation all call for more space both above and below ground, while influencing the quality of various aspects of the living environment such as safety, (social) quality of life, spatial quality, landscape, nature and biodiversity and health. In line with the Davos Statement[21], also signed by the Netherlands, the task lies in combining development with reinforcing the values that need to be protected, including culture, landscape, health and environmental quality: in other words, development and quality of the living environment as two sides of the same coin. One further element of the task is to prevent these developments being shifted to future generations.

Role of national government

National government is responsible for a sound system of environmental laws. This includes guaranteeing carefully considered and transparent decision making, support for knowledge development and the appropriate use of spatial design (and study). The Minister of the Interior and Kingdom Relations holds system responsibility for achieving a good-quality living environment and, alongside the Minister for Education, Culture and Science (OCW) encourages monitoring, design capacity and sound commissioning. Moreover, the Minister of OCW is (jointly) responsible for the architecture policy, and bears system responsibility for the conservation of cultural heritage and world heritage.

3. Guaranteeing and strengthening cross-border and international relations

An open mind towards the world and our involvement in developments abroad are essential for the identity and prosperity of the Netherlands. This is reflected in cross-border and broad international cooperation and agreements. International cooperation is also important in respect of our ecological (and social) 'footprint'. As a consequence of our open, international economy, this footprint is many times greater than our own territory. Moreover, the physical living environment does not simply cease at our national borders. Road, water and rail links are of vital importance to transport and the economy of the Netherlands as a whole and of border regions in particular. Cross-border public transport and infrastructure links reduce the barrier effect of borders and make it possible for economic potential to be fully utilised. Cross-border energy networks are vital for a stable and sustainable Northwest European energy system. Changes in the security situation call for intensive international cooperation with our partners in NATO and the EU, for example with regard to large troop movements. The quality of our living environment is to a considerable extent determined abroad. Nature areas and water systems extend beyond our national borders. Developments and environmental policy in our neighbouring countries can have a huge influence on the Netherlands, for example on water management, water quality and the development of nature.

Task

Many of the tasks in this NOVI have an international or cross-border component. These tasks can only be successfully tackled if this takes place at the scale relevant to the task in question. The task for environmental policy is to maintain the open view of the world and our international orientation, to grasp cross-border opportunities and to jointly tackle tasks with a cross-border nature with our neighbouring countries.

[21] Conference of Ministers for Culture 20-22 January 2018, *Davos Statement 2018, Towards a high-quality building culture for Europe*, Davos 2018.

Role of national government

National government is result responsible for bilateral, international and multilateral cooperation. It is also jointly responsible for intergovernmental cross-border cooperation. National government and other government authorities work alongside the Belgian regions of Flanders, Wallonia and Brussels, and with the German federal states North Rhine-Westphalia and Lower Saxony, and with provincial and municipal government bodies in the border regions. National government encourages cross-border initiatives, establishes the necessary conditions, organises cross-border governance and utilises the opportunities and instruments provided by the EU and Benelux countries. The practical implementation of this interest takes various forms, for example with regard to infrastructure, the environment, water, sustainability, defence, transport, fishery, river management, nature and the cross-border housing and labour market

4. Guaranteeing and fostering a healthy and safe physical living environment

A healthy and safe living environment, that is also perceived as such by the residents of the Netherlands, is of national importance. At the same time, with regard to the healthy living environment, a distinction is made between protecting health through good environmental quality, and encouraging a healthy lifestyle by establishing a healthy living environment (and, wherever effects can be achieved through structuring, permanently or temporarily, making these effects possible). The Netherlands must at least satisfy all applicable environmental standards. However, the Cabinet is striving to achieve permanent improvement, even once the standards have been reached, for example with regard to air quality. To make that possible, traffic risks, environmental risks, environmental safety risks and health risks must be made manageable, and preferably prevented, while new risks and hazards for health must be identified and tackled in a timely manner.
Negative effects on health from the environment will be reduced to a negligibly low level, and our living environment will be equipped to encourage healthy behaviour.

New production processes, infrastructure, installations, transport systems and products must all be inherently safe (*safe-by-design*). Achieving and maintaining a healthy and safe physical living environment naturally requires good-quality air, soil and water, and sufficient nature.
Resilient soil and a smoothly functioning soil-water system are equally important in both urban and rural areas, also with the aim of reducing the extent of soil subsidence. The (management) costs for tackling the effects of soil subsidence make it essential that we intervene (at some point in the future). At the same time, the sustainable, efficient and safe use of the underground environment is of key importance, in a manner that ensures a sound balance between use and protection. For a large number of societal tasks in both urban and rural areas, demands are placed on the underground environment, or at least account must be taken of the opportunities and limitations of that underground environment.
The central focus will be on a three-dimensional approach, whereby the aboveground and underground environment are considered as a coherent whole, according to an approach that takes account of the functioning of the soil and the underground environment as a natural system. The resilience of the soil and water management will be central points of focus. All levels of government will make appropriate use of the Dutch Key Registry of the Subsurface *(Basisregistratie Ondergrond).*

Nuisance and risks from among others chemical substances, radiation, vibrations and noise must be managed or preferably prevented. Air, land and water (whether in respect of nature, urban or rural areas (including transport arteries)) must be of such good quality that risks for people and the environment as a consequence of human activities are negligible. With regard to spatial developments, including climate adaptation, account will as far as possible be taken of preventing risks of infectious diseases from the living environment caused for example by rats, ticks and mosquitoes.

Moreover, a healthily structured living environment invites people to demonstrate healthy behaviour and encourages a sense of wellbeing. Key elements of a healthy living environment are promoting exercise (walking, cycling, sport and play), meeting and interaction and relaxation. This includes the system of recreation, cycling, walking and water sport networks (see the map ‘National cycling, walking and leisure boat network’ in the Explanatory Notes). Access to water (for example for sports fishing) is essential to recreation. To reduce the risks of an overweight population, it is vital that the range of food offered at various locations (for example close to schools) be made more healthy. In this way, the living environment can contribute to reducing obesity, lowering blood pressure and improving all-round mental health. The living environment can make an important contribution to increasing the health potential of vulnerable groups. A healthily planned and structured living environment can moreover

often be combined with other functions, such as climate adaptation (more green and blue environmental elements) and active mobility.

Task

Environmental factors such as air pollution and also unhealthy behaviour continue to cause harm to health. As a result of more intensive use and the expected growth of our cities, the pressure from air pollution and noise nuisance on health is expected to rise. We must ensure that this does not result in exceeding the environmental standards. The task is to improve the health and safety of our living environment to such an extent that by 2050, the negative effects of the environment on our health are reduced to a negligibly low level. In addition, the Cabinet aims to satisfy the current WHO recommendation values by 2030. This will require collaboration between the physical and spatial domain and the social health domain. Reducing environmental risks as a consequence of industrial activities and transport (environmental safety) to a negligible level is another element of the task. The growth of the economy and of population numbers will reduce the space available for high-risk activities while at the same time the number of sources of unsafety may rise due to economic developments and changes in our power supply.

Soil subsidence is a phenomenon occurring in peat and clay areas, partly as a consequence of the dewatering of polders. The occurrence of soil subsidence in urban and rural areas will increase the task for the vital rural environment, for agriculture, nature, energy and climate, for house building, water safety, fresh water supply and water quality and for preserving cultural heritage. Against that background, soil subsidence must be seriously reduced.

The tasks for the various aspects of this national interest are further specified in the Explanatory notes.

Role of national government

National government bears system responsibility for the safety and health of the nation's citizens and result responsibility for the quality of air, soil and water. National government is also responsible for guaranteeing a good-quality living environment and for tackling nuisance and risks caused among others by industrial activities, chemical substances and their transport, radiation and noise, on the basis of international and national legislation. All environmental strategies on the basis of the Environment and Planning Act must take account of the environmental principles: prevention, preventive action, tackling at source, 'the polluter pays' and 'prevention is better than remediation', the inclusion of cumulative risks for people and the environment in all decision-making processes, the application of the prevention principle in the face of new, still uncertain risks for people and the environment, and ensuring transparent consideration in all decision-making processes. With regard to the structuring of the living environment in a manner that fosters health, national government will encourage knowledge development and the cooperation needed to bring this about. To ensure that the Netherlands satisfies the EU agreements and other international agreements in this field, national government is directing, encouraging and implementing a series of measures. National government is responsible for a programmatic set of measures through to 2050, the aim of which is to establish future-proof large waters with high-quality nature, hand in hand with a powerful economy.
Tackling the problem of soil subsidence is a challenge that relates to the tasks and responsibilities of national and local government, and private parties including the owners of buildings and infrastructure.

5. Ensuring that housing stock matches housing demand

Housing is a basic human need. Everyone in the Netherlands must be able to live comfortably, for a reasonable price, irrespective of whether that means renting or buying. Alone, with your family or with others, in a house with garden or balcony, and in peaceful or more lively surroundings, depending on the individual wishes. Against that background, housing stock that matches people's current and future housing demand is therefore a national interest. Good-quality housing means a pleasant, liveable environment, with enough homes for everyone, in every phase of life: from student bedsits through to (care) homes for life.

Good housing also means a justified expectation of quality from builders and landlords, who carry out their work well and in a transparent manner and an expectation that government will act to tackle excesses. It also means that housing must be affordable with homes suitable for every budget and an affordable transition to clean energy in every home. In other words, quality relates not only to the home itself but also the residential and living environment. This of course includes the provision of housing for asylum seekers.

Task

The current housing shortage and the growth in the number of residents and households calls for equivalent growth in housing stock (above all in and around urban regions) in a pleasant, liveable environment. Between 2019 and 2035, the housing stock must be expanded by approx. 1.1 million homes[22]. The ageing of the population adds a new dimension to the building task. Certain regions are faced with shrinking population numbers. The map 'Quantitative demand' gives a picture of housing demand (Statistics Netherlands (CBS) forecast through to 2040). In these regions, the task is to retain good-quality housing stock for example through demolishing or renovating poor-quality homes. At the same time, the build quality of the housing stock has major consequences for the energy requirement and the emission of CO_2. One key challenge is to make a low-CO_2 built environment that is climate resilient and nature inclusive in 2050. The scale of the task the provision of housing for asylum seekers can fluctuate considerably.

Role of national government

The primary responsibility for the built environment, housing stock and quality of life lies with municipalities and provinces. National government holds system responsibility. The role of national government is to lay down the framework, to encourage, where necessary to impose sanctions, to make resources available - for example via housing allowances and mortgage tax reduction or the scheme aimed at boosting house building for municipalities[23] - and to work alongside municipalities and provinces to overcome (supralocal and cross border) obstacles and to ensure that the national interests are guaranteed. In addition, national government is responsible for investments in the main infrastructure, which in many cases are linked to large-scale area development. Finally, national government bears result responsibility for housing for asylum seekers.

6. Guaranteeing and achieving a safe, robust and sustainable mobility system

Without a smoothly functioning mobility system, our economy and our society will literally grind to a halt. Both economic and social interests are served by good accessibility at every level. The coherent functioning of the total system of roads, railways, waterways, infrastructure for walking and cycling, multimodal hubs and stations, ports and stations, now and in the longer term, is a national interest. Traffic and the transport of people and goods must be safe, affordable and reliable, must offer acceptable journey times and travel alternatives and must have the least possible negative impact on the environment. Those aspects of infrastructure networks that are of supraregional importance for overall accessibility are viewed as part of the main infrastructure (main road network, main rail network, main waterways network).

The term safety refers to road safety, social safety and external safety. It is of key importance on the road, on the railways, on the water and in the air. In a robust mobility system, journey times are predictable and reliable, including the seamless transition between the various travel modalities. At the same time, robust also means that the mobility system is futureproof (including climate resilience). The emissions of fine particulate matter and other air pollutants, and noise nuisance from traffic must be minimised (see national interests 2 and 4).

[22] ABF, PRIMOS 2020. Delft 2020.

[23] Netherlands Enterprise Agency, *New scheme aimed at encouraging house building for municipalities, 2020,* https://www.rvo.nl/actueel/nieuws/nieuwe-regeling-woningbouwimpuls-voor-gemeenten

Task

Access for people and goods is under ever increasing pressure. In, around and between our cities, this problem is caused by the fact that at certain times of the day, demand exceeds the capacity of the various networks. In certain rural areas, population shrinkage means that demand for public transport is declining, so that public transport in its traditional form – with fixed routes and regular timetables – has become too expensive to operate effectively.

The task entails:

1. The smart and safe structuring of (traffic) space. Everyone, both passengers and transport operators, must be able to make safe use of the various networks and modes of transport. This calls for social safety, road safety and safety of the infrastructure (engineering structures) itself.
2. Preventing and solving (predicted) bottlenecks on roads, railways and waterways. People and goods must be able to reach their destination within a socially acceptable timeframe, even if the system is disrupted by incidents. This for example requires:
   - the better utilisation, expansion (see also national interest 7) and the successful combination of the various national, regional and local networks (also including pedestrian and cycle networks and high-quality bicycle parking facilities) and improving transfer and transhipment points;
   - providing space for the development of ports and the transport, reception, transhipment and handling of goods.
3. Achieving the targets for the emission of CO_2 (equivalents), as laid down in the Climate Agreement (June 2019)[24]. Efforts are focused on electrification and the smart and efficient use of the mobility system. Where this is not possible, attention will be focused on clean, advanced fuels. The ambition is also to reduce the emission of fine particulate matter and other air pollutants by mobility, and to further reduce noise nuisance from traffic.
4. Finding a new balance between air transport on the one hand and noise nuisance, safety, emissions and harm to health, on the other.

Role of national government

This interest exceeds the territorial, administrative and indeed all other aspects of municipal, regional and provincial government, because the total network of roads, railways, waterways, cycle paths and cycle parking facilities, footpaths and multimodal hubs and stations, ports and airports must be viewed in combination. The overarching (economic and social) interest is served by good accessibility at all levels (in other words more than just the network of national infrastructure) and for that reason must be secured at national level. The national government is therefore responsible for the system. For specific elements of the network (for example the underlying road network and regional public transport) and specific themes (for example transport safety), policy can of course be elaborated at regional level. National government will encourage innovations in mobility through cooperation with private, societal, scientific and public partners.

National government promotes safety awareness among government agencies, businesses and individual citizens and encourages the use of information and communication technology. National government encourages the use of safe vehicles and the various government authorities utilise the options offered by a safe nautical infrastructure. National government promotes cooperation with local governments in respect of traffic management and spatial planning on and alongside the water. As far as possible, national government aims to separate professional and recreational shipping.

7. Maintaining and developing the main infrastructure for mobility.

A smoothly functioning mobility system requires the securing and development of the main infrastructure for the transport of persons and goods via road, rail, air, sea and water. Uninterrupted networks for the whole of the Netherlands, interconnected with foreign networks, must be guaranteed. In terms of territory, this interest exceeds the municipal, regional and provincial level.

[24] Ministry of Economic Affairs and Climate Policy, *Climate Agreement,* The Hague 2019

Task

National and international accessibility is an area of focus. The question is whether the Netherlands can retain its strong position as a consequence of a combination of an increase in building development around infrastructure networks and the airports, massive growth in demand for mobility on the main networks and international links. The ageing of the infrastructure and the resultant major replacement and renovation tasks also represent a huge challenge. The task is to create and expand the infrastructure where bottlenecks cannot be avoided through other measures, and to maintain, rejuvenate, renew and improve the sustainability of existing infrastructure networks. The maintenance and development of the main infrastructure is essential in order to continue to guarantee the quality, reliability and availability of the networks.

Role of national government

National government is result responsible for the construction, management and maintenance of the main infrastructure. National government ensures the coherence and functioning of the network from a national, international and regional perspective. In its capacity as waterway manager of national waters, national government can issue instructions to local and regional authorities.

8. Guaranteeing good access to the living environment.

Around 2 million people in the Netherlands have a mild or serious disability. A large proportion of this group is made up of the elderly. Because everyone must be able to participate in society, good access to the living environment including homes, buildings, public transport and public space is of national importance. An accessible environment invites people to participate in more outdoor activities, makes it easier to meet people and for example for people to do their own shopping.

Task

In practice, for the elderly and the disabled, there are numerous obstacles to the use of public space, buildings and public transport. The task is to improve the accessibility of buildings, public transport and public space (also for the emergency services) and to ensure the availability of sufficient suitable homes and forms of housing for people with a disability.

Role of national government

The role of national government is to ensure that the obligations based on the UN Convention on the Rights of Persons with Disabilities are fulfilled. The Dutch government ratified this Convention on 14 July 2016. The implementation of the UN Convention is included in the coalition agreement 2017-2021 'Confidence in the future'.

9. Ensuring national security and offering space for military activities

V Security is a basic precondition for a prosperous Netherlands. The role of our armed forces is to protect our country. The Netherlands is a hub for people, goods and data. National security is essential to a resilient society and to the protection of our vital infrastructure and the digital security of our country. The Defence organisation makes a vital contribution to the security of our airports, ports and other essential infrastructure. These contributions are based on three core tasks of the Defence organisation according to the Constitution:

- Protection of our own national territory and that of our alliance partners;
- Protection and fostering of the international rule of law and international stability;
- Support for the civilian authorities in enforcing the law, disaster relief and humanitarian aid, both national and international.

Task

In order to be able to implement its operational tasks, the Defence organisation requires sufficient space to exercise and train its members. The armed forces have been expanded and modernised. Potentially, this development will result in greater demands on the environment. The predicted growth in Defence activities must be catered for. The traffic and transport system must be equipped and designed in such a way that the risk of damage due to deliberate disruption and misuse of vital infrastructure elements and transport chains, in all modalities, is limited and that preparation for remaining risks are sufficient.

Role of national government

Pursuant to article 2.19 of the Environment and Planning Act, national government is responsible for ensuring the functioning and condition of the infrastructure and other facilities for national security and defence against the consequences of activities involving the infrastructure and other facilities (result responsibility). National government assesses the vulnerability of the most important hubs. National and local governments focus attention on deliberate disruptions and as far possible encourage infrastructure managers to investigate the consequences of deliberate disruption for the continuity of service provision, and wherever relevant take the necessary actions.

10. Mitigating climate change

The Paris Agreement undertakes to mitigate the threat of climate change by keeping the global temperature rise well below 2 degrees Celsius above pre-industrial level and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius, in order to significantly reduce the risks and consequences of climate change. Additionally, it was agreed to reach the global peaking of emissions as quickly as possible, and subsequently to reduce emission levels. In the second half of the century, the aim is to have achieved a balance between anthropogenic emissions and reservoirs of greenhouse gases. The Netherlands has committed to this agreement. It is of national importance to achieve the internationally agreed goals, and to meet the contributions to mitigating climate change laid down in the Climate Act *(Klimaatwet)*.

Task

The objective has been translated into the task of reducing emissions of greenhouse gases by at least 49 percent in 2030 and by 95 percent in 2050, as compared with 1990.

Role of national government

The role of national government is to create the conditions that enable societal actors to limit the emissions of greenhouse gases and to increase the storage of CO_2. This also applies for the activities and possessions of national government itself.

11. Achieving a reliable, affordable and safe power supply, which is low-CO_2 in 2050, and the necessary main infrastructure

Vital functions in society are dependent on the reliable supply and exchange of energy. Energy must be affordable for all. Energy must also be generated, produced, transported, stored and used safely. In order to achieve the targets laid down in the Paris Climate Agreement, and to realise 95% less greenhouse gas emission in 2050 (as compared with 1990), there must be a transition to low-CO_2 power. The energy transition is also relevant from a geopolitical viewpoint and depending on the alternative energy source, contributes to a healthier living environment. We must save energy and make our power supply sustainable, so that we can reduce the emission of greenhouse gases. The national and European transport network for electricity will develop further so it can facilitate the energy transition. High voltage connections of 110 kV and higher are part of the national high voltage network. At the same time, over the next few decades, conventional energy sources will continue to play an important role in our energy system. Spatial planning for the underground environment is of key importance for the conventional (production, storage and transport of oil and natural gas) and new energy carriers (underground energy sources such as geothermal energy (including thermal energy storage) and the transport and storage of CO_2 and hydrogen). The main infrastructure for the generation, production, conversion, storage and transport of energy is part of this national interest.

Task

A low-CO_2 energy system calls for more space than a fossil-based system and requires fundamental adaptation among others to the heat and electricity system, both above and belowground. This in turn places greater demands on the energy network. One key point of attention is the combination of supply and demand. The task therefore lies in guaranteeing a reliable, affordable and safe power supply, replacing fossil energy sources by renewable sources (including energy saving), adapting the networks for heat, gas and electricity and creating the space required for the generation, conversion, storage and transport of energy. Attention will also be required for (digital) protection against unwanted external influences.

Role of national government

The role of national government is twofold. Firstly, it relates to creating the necessary conditions for the production, generation, transport, conversion, storage and use of energy, and for the capture and storage of CO_2, in a reliable, affordable and safe manner. Secondly, it calls for efforts to secure the upgrading of the energy transition. This applies both onshore and offshore, and relates to the aboveground and underground environment. In this process, national government will work closely alongside provinces and municipalities, civil society organisations and other stakeholders. This is for example reflected in the national Climate Agreement. The role of national government is expressed in the laying down of targets for the reduction of greenhouse gases and the setting out of conditions and designating areas for energy activities, after considering all other interests.

12. Guaranteeing the main infrastructure for the transport of substances via (pipe) lines

The network of pipelines for the transport of (hazardous) substances, including the gas infrastructure, is important for the economy and society of the Netherlands, on a European scale.

Task

As a consequence of developments in and the increased sustainability of the economy and society, changes will take place in the substances transported via pipelines. The task will be to reserve sufficient capacity to maintain and develop a robust, efficient, reliable and safe main network of pipelines for the transport of hazardous substances. An additional task will be to ensure that this network is structured in such a way that it results in negligible risks for people and the environment.

Role of national government

The network of pipelines for the transport of (hazardous) substances is important for the economy of the Netherlands on a European scale. National government wishes to spatially facilitate the construction of these pipelines both on and offshore, preventing obstacles and ensuring good connections to the international network. Given the (inter)national scale and importance of an uninterrupted network, this is a task for national government

13. Achieving a future-proof, circular economy

In order to keep our economy future-proof and to make it more sustainable, the transition to a circular economy is of national importance. A circular economy is aimed at keeping raw materials, including raw construction materials, in the production chain for longer. The sustainable extraction of (construction) raw materials is a component of this national interest. The aim is to ensure optimum use and reuse of resources, with the highest value for the economy and the least possible damage to the environment. As well as tackling threats, a circular economy also creates possibilities for economic innovation. It creates opportunities for businesses in the form of new (international) markets, increased cooperation in production chains and reduced consumption of natural resources leading in turn to cost savings

Task

The growing population and developments in both prosperity and technology have created growing demand for the resources and services provided by nature. The stocks of those resources are becoming increasingly exhausted. Take for example the growing scarcity of fossil fuels, minerals and other natural resources. Extraction of construction raw materials such as sand, gravel and clay is also reaching its limits, in a number of cases. The task is to transform our economy into an economic system that is based on minimising the abiotic use of natural resources, such as marl, fine sand, petroleum and antimony. Our aim is to encourage the reuse of products, product components and (high-value) raw materials and the replacement of abiotic resources with renewable resources. Where the extraction of (construction) raw materials remains necessary, we will encourage more sustainable practice. In other words, a stable ecological system with sufficient biodiversity is an essential precondition for a circular economy.

Role of national government

The role of national government is to create the frameworks that ensure a level playing field for businesses to make this possible and to provide room for experimentation for technological innovations. A second role of national government is to create the conditions according to which the extraction of minerals can be achieved in an affordable, reliable and ecologically viable and safe manner. This of course refers to those resources that are part of the circular economy. National government holds result responsibility for the spatial structure of the North Sea.

14. Guaranteeing water safety and climate resilience (including vital infrastructure for water and mobility).

This national interest comprises the following elements:

Water safety

It is of national importance that water safety be guaranteed. That safety can be achieved by focusing on the three elements of multilayer safety: flood prevention by means of strengthening dykes, dams and dunes, (preventing) and mitigating the consequences of flooding by means of water-robust spatial planning and contingency planning (evacuation, disaster management plans). The most essential element in water safety is prevention, based on the strengthening and maintenance of primary flood defences, dunes and storm surge barriers, taking measures aimed at increasing the room for rivers, and undertaking sand suppletion measures in the coastal foundation. It is of national importance that sufficient space be reserved for sand dredging for coastal and water safety (including the future strengthening of flood defences) Ensuring that sufficient space is also reserved close to flood defences for future strengthening work is another element of national importance. The policy is aimed at ensuring that for everyone protected by primary flood defences, the risk of death due to flooding is equal to or less than 1:100,000 per year, by 2050. Additional protection is offered at those locations where there is a risk of large groups of victims and/or large-scale economic damage and/or serious damage due to the failure of vital and vulnerable infrastructure elements of national importance.

Task

In the Netherlands, faster rising sea levels, higher river discharge volumes, the intensification of peak precipitation and increased risk of extreme heat and periods of drought can result in additional risks for water safety, that may continue to be relevant depending on potential developments beyond 2050. These risks are further exacerbated in the Netherlands by soil subsidence. The task consists of:

- Maintaining, strengthening and reserving sufficient space for primary flood defences, dunes, coastal foundations and storm surge barriers, to prevent flooding. The aim is that all primary flood defences will satisfy the new standards in 2050;
- Reserving sufficient space for sand dredging to maintain the coastal foundations and to ensure water safety;
- Maintaining and reserving sufficient space for the rivers and river-widening measures;
- Mitigating the consequences of flooding via smart spatial planning and good contingency planning.

Role of national government

National government bears system responsibility for water safety and is responsible for setting standards and laying down frameworks for the prevention of flooding and for contingency planning. Alongside the water authorities, national government is working to strengthen the primary flood defences in the Flood Protection Programme[25].

[25] Dutch Flood Protection Programme (HWBP), see www.hoogwaterbeschermingsprogramma.nl

Climate resilient and water robust

Reducing CO_2 emissions will not be sufficient to prevent all climate change. Climate change means an increased risk of water nuisance, heat, drought and flooding. The resultant rise in sea levels and increased intensity of precipitation and periods of drought lead to risks for our economy, health and safety. It also engenders risks for resilient biodiversity. Moreover, the process of soil subsidence also influences (the costs of) water level management and our soil-based cultural national heritage.

It is of national importance for the Netherlands to adapt to these changes, also for the period beyond 2050. Although the pace of change is surrounded by uncertainty, climate change and sea level rise are set to continue beyond 2050. If we do nothing, the consequences will be an increased risk of flooding, water nuisance, heat stress and drought. A climate-resilient Netherlands is equipped to cope with these consequences of climate change, including sea level rise and soil subsidence. In many cases, climate adaptation will also influence the use of space for other functions and tasks.

Task

The task is to adapt our living environment to the consequences of climate change and to ensure that the Netherlands is structured to be climate resilient and water robust in 2050, also taking account of expected developments beyond 2050. This includes such elements as the capture of extreme rainfall and compensation for heat in urbanised areas.

Role of national government

National government has result responsibility for ensuring the climate resilience of its own buildings and infrastructure, including trunk roads, and for vulnerable functions vital to the national interests. In the Delta Plan for Spatial Adaptation[26] and through (the implementation programme of) the National Climate Adaptation Strategy Administrative Agreement on Climate Adaptation[27] and the Administrative Agreement on Climate Adaptation[28] national government has reached agreements with provincial and municipal authorities on the way in which these targets can be achieved. In many cases, it is the task of the lower tiers of government and private parties to put these measures into practice, backed up by national government, in the form of funding and knowledge development.

15. Guaranteeing good water quality, sustainable drinking water supply and sufficient availability of freshwater.

The availability of sufficient good-quality freshwater (in the form of surface water and groundwater) for societal and economic functions (drinking water, agriculture and processing and industrial processes, shipping, nature, etc.) now and in the long term is of national importance. Critical use functions are protected in periods of water shortage in accordance with the legally specified water consumption hierarchy *(verdringingsreeks).* In periods of surplus, it is essential that water be retained as long as possible, and groundwater supply replenished, without causing any nuisance. In addition to sufficient (ground)water, it is of national importance to the Netherlands that we maintain and ensure good-quality water (surface water and groundwater). Good water quality is essential for the use of that water for a variety of functions, including the development of nature biodiversity. European Directives (such as the WFD[29], MSFD[30], Natura 2000) make important contributions. Drinking water is one of the necessities of life, and sustainably securing a public drinking water supply is of national importance. In addition to the availability of freshwater and the quality of drinking water sources, the quality and delivery reliability of drinking water itself must be guaranteed.

[26] Delta Commission, *Delta Plan Spatial Adaptation 2018*, The Hague 2017, see https://ruimtelijkeadaptatie.nl/overheden/deltaplan-ra/

[27] Ministry of Infrastructure and the Environment, *National Climate Adaptation Strategy (NAS) 2016*, The Hague 2016, see https://ruimtelijkeadaptatie.nl/overheden/nas/

[28] Ministry of Infrastructure and Water Management, *Association of Netherlands Municipalities, Union of Water Authorities and Association of Provincial Authorities, Administrative Agreement on Climate Adaptation*, The Hague 2018.

[29] National government, Water Framework Directive (KRW), see https://www.helpdeskwater.nl/onderwerpen/wetgeving-beleid/kaderricht- lijn-water/Rijksoverheid

[30] National government, *Marine Strategy Framework Directive (KRM)*, see https://www.helpdeskwater.nl/onderwerpen/wetgeving-beleid/ kaderrichtlijn-water/

Task

Over time, the natural availability of sufficient water is decreasing, which could result in growing shortages of freshwater. The dry summers of 2018 and 2019 and the dry spring of 2020 are indicators for what this could mean. At the same time, demand for water is rising from use in agriculture and nature, in many places. Demand for drinking water is expected to grow considerably, through to 2050. The overarching goal is for the Netherlands to be resilient to shortages of freshwater, by 2050. The task is promoting the availability of water. This can be achieved by maintaining and fostering a healthy and balanced (ground)water system, by protecting crucial use functions and ensuring that the water that is available is used effectively and economically. It is also about protecting current drinking water sources and designating additional strategic stocks and national groundwater reserves in order to satisfy the demand for drinking water in the longer term. The task also includes ensuring that sufficient measures have been taken by 2027 to achieve the goals of the WFD (Water Framework Directive; Kaderrichtlijn Water KRW). The goals from the WFD for chemical water quality and for biological parameters such as aquatic plants and fish, will probably not yet be achieved everywhere, by 2027. The measures to be elaborated and implemented over the coming years in the framework of the Programme Approach for Large Waters are aimed at improving the (ecological) water quality and nature in and around the large waters. This will in turn contribute to still achieving the goals, in the slightly longer term. Dewatering and susceptibility to drought in weak soils leads to further soil subsidence and water quality problems. For that reason, reducing soil subsidence is yet another task for this national interest.

Role of national government

National government holds system responsibility for supplying drinking water and freshwater, and water quality. All levels of government have a responsibility within that framework for fulfilling their own tasks. National government plays a promotional role by providing funding and knowledge development. At the same time, national government bears result responsibility for its own main water system, which is managed by Rijkswaterstaat.

16. Guaranteeing and strengthening an attractive spatial-economic establishment climate

A competitive, sustainable and circular economy right across the Netherlands is the foundation stone for the prosperity of the country, now and in the future. The Netherlands is a world leader and one of the most dynamic and competitive knowledge economies in the world, and wants to be a frontrunner in the development, application and export of smart and sustainable products, technologies and services. In this way, the Netherlands will reinforce its position in the top five most competitive economies in the world, and can become a pioneer for the sustainable and circular economy. The development of new (key) technologies and digitalisation in production processes will deliver a new boost to Dutch industry. This in turn requires an excellent (inter)national spatial economic network and establishment climate with space for entrepreneurship, innovation, experimentation and knowledge development. Maintaining a large-scale research infrastructure is not only essential for innovation and the establishment climate, but also for the international position of the Netherlands in terms of scientific research. A key element of an excellent establishment climate is the availability of space that meets demands placed on it, including aspects of the physical living environment such as digital connectivity and safety, business locations, accessibility and quality of the living environment and nature. This must be combined with an internationally outstanding attractive, safe and healthy living environment. National parks, culture and cultural heritage can play an important role in this respect.

Task

In a globalising world, no country can be sure of its competitive position. The Netherlands, however, does have an excellent starting position. The task remains to ensure an excellent establishment climate with optimum (international) accessibility, an attractive, green, safe and healthy living environment, and the availability of space for commercial activities that matches demand, while avoiding excesses and shortfalls. In that connection, environment policy will facilitate sustainable growth of 2 percent in Gross Domestic Product (GDP) per annum, while retaining a position in the top five most competitive economies in the world. The Netherlands aims to continue as a world leader in a number of specialist fields (including radio astronomy). The task is to protect essential large-scale scientific infrastructure which for its functioning is dependent on an undisrupted environment, by ensuring that an undisrupted environment remains available.

Role of national government

The role of national government in this particular interest is to create the conditions in the living environment whereby the spatial economic establishment climate is and remains attractive. That includes encouraging the creation of clusters and cooperation between businesses, centres of knowledge, fieldlabs, start-ups and educational institutions, as laid out in the top sector policy and innovation policy. These policies represent a clear boost for the development and application of new technologies and the growth of new business. National government aims to maintain a high-quality science system with institutions that perform excellently and is therefore investing in the national research infrastructure. A further role for national government is guaranteeing parameters in the living environment for maintaining the research infrastructure.

17. Achieving and maintaining high-quality digital connectivity

An excellent digital infrastructure offers opportunities for digitalisation and innovation, and in that way guarantees a favourable entrepreneurial and establishment climate, and greater prosperity. It is of national importance that now and in the future, sufficient accessible, reliable and rapid networks continue to be available. The reliability, efficiency, affordability and security of these networks must be guaranteed for the whole of the Netherlands (including rural areas).

Task

Without further investment, modern networks are not sufficient to handle the Internet traffic generated by the new economy. The Netherlands must be a digital frontrunner in Europe. The task is to make our digital networks and our digital establishment climate among the best in Europe.

Role of national government

The role of national government in this interest is to offer the conditions that allow the realisation of high-end digital connectivity, and to guarantee the reliability, efficiency, affordability and security of these networks. Attention must also be focused on maintaining (both the digital and physical) security of networks and data centers.

18. Developing sustainable food and agricultural production

It is of national importance that agriculture and horticulture, as the biggest users of space in rural areas, are able to make the transition to cyclic agriculture[31], in which agriculture and biodiversity support and strengthen one another. In such an environment, Dutch agriculture and horticulture can sustainably supply high-quality products, specifically foodstuffs and other agricultural products, including raw materials such as biomass for the circular economy, while maintaining a balanced and future-proof earning model for the sector. Productive soil and a smoothly functioning soil-water system are of vital importance for cyclic agriculture, also with a view to limiting soil subsidence. As managers and users of the rural environment, the agricultural and horticultural sector will have to make real contributions to the quality of the living environment, and deliver ecosystem services that contribute extensively to fulfilling a whole range of national tasks. This depends entirely on a healthy and smoothly functioning soil-water system. To make this possible, regional livestock farming will have to become more soil-bound, agriculture and horticulture will have to operate in a way that maintains the good condition of soil and water quality (with practically zero emissions into the environment) and strengthened biodiversity in the area of land in agricultural use, and in nature areas close to agricultural land. In areas where pressure on the environment from agriculture (nature, landscape, public health, drinking water supply) is too high, targeted measures will be implemented to reduce the burden. Examples are financial compensation for the reorganisation of pig farming, investments in sustainability at source for animal accommodation, and the administrative agreement on Groundwater Protection Areas aimed at limiting the leaching of nitrates into specific groundwater protection areas.

Task

The task is to facilitate and bring about the transition to cyclic agriculture. In particular, peat pasturelands are faced by three major problems: **a.** Emission of CO_2 equivalents, **b.** Future perspective for agriculture, nature and landscape **c.** Soil subsidence. Developing an integrated approach to these problems (in combination with the Climate Agreement) is part of this task.

[31] Ministry of Agriculture, Nature and Food Quality, *Implementation Plan LNV Vision: Towards a new perspective (Realisatieplan Visie LNV: Op weg met nieuw perspectief).* The Hague, 2019. https://www.rijksoverheid.nl/documenten/publicaties/2019/06/17/realisatieplan-visie-lnv-op-weg-met-nieuw-perspectief

Role of national government

The role of national government in respect of this interest is to enable the turnaround towards sustainable food production. Actual implementation will often be based on a regional approach. The tasks of national government cannot be considered in isolation from the efforts of provincial and municipal authorities and civil society actors in fulfilling the joint tasks in rural areas.

19. Preserving and strengthening cultural heritage and landscape and natural qualities of (inter)national impotence

Preserving the core qualities of both urban and rural areas is of national importance. This is reflected in the conservation of valuable, open and vulnerable landscapes and built environment elements, based on their core qualities. In the process of (urban) growth, concentration, transformation or shrinkage, account must be taken of unique landscape structures and objects, man-made landscapes (or elements of those landscapes), archaeological monuments, built and laid-out monuments, urban and village conservation areas, and (nominated) world heritage and reconstruction areas of national importance.
These core qualities can also be utilised in spatial tasks and transformations, for example through the implementation of spatial design. National parks can make a contribution to major spatial tasks on condition the conservation of the unique values in these areas is guaranteed. This in turn will contribute to an attractive living environment with a good establishment climate. For a high-level knowledge economy like ours, the accessibility and attractiveness of the surrounding landscape is of vital importance in competing with other European metropolitan centres like London and Paris.[32]

Task

The landscapes so typical for the Netherlands are slowly losing their identity as a consequence of gradual erosion of the characteristic landscape elements. One cause of growing pressure on the landscape is the uncontrolled spread of warehouse-type buildings as a consequence of growth in the economy and the transport sector, vacant agricultural buildings, soil subsidence, and economies of scale in agriculture. The task is to develop, preserve, strengthen and utilise cultural heritage and (inter)national unique landscapes and natural qualities in area development and transformation processes. We are working towards a familiar living environment with a clear character.

Role of national government

On the basis of the European Landscape Convention, national government bears system responsibility for the nation's landscapes. This national interest is put into practice in cooperation with provinces, that share this joint responsibility. The role of national government in this interest is to create the (statutory) frameworks for preserving cultural heritage and landscape and natural qualities for the long term. National government supports other government authorities and civil society parties and will put this interest into practice in its own activities and properties. National government is result responsible for large waters and cultural heritage in the North Sea. National government is also jointly responsible for valuable landscapes, such as the Green Heart, the Wadden Sea, the Veluwe, world heritage areas and the National Parks. This responsibility means that all actors, from government, civil society and individual citizens must plan and monitor any changes in the landscape with care and attention for the quality of that landscape.

Responsibility for the preservation of cultural heritage and world heritage is the task of all governments, pursuant to the obligations arising from the Granada Convention[33], the Valletta Convention[34], the European Landscape Convention[35]₂and the World Heritage Convention[36]. National government is responsible for a correctly functioning system (of laws) for heritage and the living environment.

[32] Vereniging Deltametropool, *Blind Spot, metropolitan landscape in the battle for talent*, Amsterdam 2016.

[33] In 1994, the Netherlands signed up to the Granada Convention which states that protection of the architectural heritage is an essential objective of spatial planning: not only in the elaboration of plans but also the preparation of developments.

[34] In 1992, the Malta Convention was signed in Valletta, regulating the way in which archaeological heritage is treated, by the European Union.

[35] The Member States of the Council of Europe signed the European Landscape Convention in 2000.

[36] The aim of the 1972 World Heritage Convention is to preserve heritage of unique and universal value for humanity, for future generations.

20. Improving and protecting biodiversity.

Preservation and recovery of biodiversity in the Netherlands make an important contribution to the quality of the living environment. It is of national importance that efforts be made to meet the European (conservation) targets by which the Netherlands is bound. Wherever possible, the Netherlands will encourage natural processes in order to better achieve the conservation targets for species and habitats (for example in the Programme Approach for Large Waters[37]). In addition to maintenance, biodiversity recovery is another nationwide task: the loss of biodiversity cannot be viewed in isolation.
In a recent report from the Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES)[38] dated May 2019, it is clearly emphasised how healthy ecological processes contribute to other tasks, such as climate, health and wellbeing.
Biodiversity can only recover if there is an active focus on recovery in other related policy areas, such as nature-inclusive agriculture and green in the city. Work is being carried out on these tasks in coalitions, alongside other partners, such as the Biodiversity Programme, the joint national and provincial Nature Programme and in the Delta Plan for Biodiversity Recovery. The Delta Plan for Biodiversity Recovery is a broad civil society coalition with the ambition of turning biodiversity loss in the Netherlands into biodiversity recovery. Partners in the Delta Plan include farmers, land managers, private individuals, a series of research institutes and government bodies.

Biodiversity is important because of the intrinsic value of nature and the relevance of nature for society. This relevance for society is expressed in numerous different ways, such as clean water, clean air, the supply of food and biomass, opportunities for recreation, exercise and relaxation, a cooling effect during warm periods and living enjoyment.
Use functions will preferably be carried out where they match the characteristics and functioning of the natural soil and water system. This will require fewer technical support measures, for example in respect of fertilisers, crop protection and dewatering, which can cause negative environmental effects. In turn, these will benefit biodiversity.

There is real urgency in respect of nature and biodiversity. In the Netherlands, too, the situation is far from rosy. The most recent reports issued by the EU (evaluation of the Birds and Habitats Directives) and the UN (CBD countries report) reveal that the Netherlands will not achieve the goals set for 2020. The nitrogen crisis has further increased the urgency for reinforcing nature and biodiversity. If we are to achieve the European maintenance goals, we must reduce nitrogen deposits and reinforce nature values. Achieving the maintenance goal is essential to create space for new construction and development tasks on Dutch territory. National government is working on an approach for reducing the nitrogen burden in Natura 2000 areas. This too is essential if we are to bring the targets outlined in the European Birds and Habitats Directives within reach. It will on the one hand be achieved by recovery and strengthening of nature and biodiversity and on the other by reducing nitrogen emission (measures at source).

Task

The task is to assist the recovery and strengthening of biodiversity as laid down in the Birds and Habitats Directives. In the long term, this means that the conditions will be created whereby all protected species and habitats can continue to exist in a good state and that their state does not worsen in the intervening period. The target scope of the Birds and Habitats Directives based on existing policy equates to around 65 percent by 2027. In other words, a considerable policy task still remains. In 2019, in a letter to the House of Representatives[39] , the Cabinet stated that the target for 2050 is a 100 percent Birds and Habitats Directives target scope, and a halving of the ecological footprint.

An integral part of the existing task is to create 80,000 additional hectares of nature between now and 2027 (Netherlands Nature Network), as agreed by national government with the provinces, in the framework of the Nature Pact[40].

[37] Ministry of Economic Affairs, *Nature Ambition Large Waters 2050 and beyond*, The Hague 2014.
[38] Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services, *Global assessment of biodiversity and ecosystem services*, Bonn 2019.
[39] Parliamentary Papers 26407, no. 130.
[40] Ministry of Agriculture, Nature and Food Quality, *Nature Pact development and management of nature in Netherlands,* The Hague 2013. Parliamentary papers 33576, no 6.

Long-term financing for reinforcing nature awarded in the framework of the Nitrogen Approach[41], will make it possible to increase the ambitions expressed in the Nature Pact and also to contribute to achieving international targets. In the Nature Programme, national government and provinces have reached agreements on spending these additional resources over the next ten years, with a further horizon to 2050.

In addition to creating more good-quality nature areas, the task is to ensure that natural resources, our natural capital, are used sustainably and that other users do not shift responsibility to nature, and instead contribute to nature and biodiversity. In the face of important developments, such as changes to agriculture, the energy transition and the expansion of residential areas and infrastructure, account will have to be taken of nature (nature-inclusive development). In the Netherlands Nature Positive (October 2019), the joint ambition of the provinces and the Ministry of Agriculture, Nature and Food Quality with regard to nature was established. Nature will not only be reinforced within nature areas, but everywhere. In cities, in rural areas and in the large waters, all in collaboration with the provinces. Biodiversity recovery is an integral element of the sustainability agendas. In elaborating the vision Agriculture, Nature and Food: Valuable and Connected, ties will also be established with the Biodiversity Recovery Delta Plan[42]. To realise the targets of the Water Framework Directive, sufficient measures must have been taken by 2027. In the framework of the Programme Approach for Large Waters, investments will be made in increasing space for natural processes, creating missing habitats, connecting nature areas and establishing good ecological water quality in these large waters. This in turn will result in a stable and coherent ecological network of large waters, with the conditions necessary for a good state for the species and habitats to be protected.

Role of national government

In the Administrative Agreement on Nature[43] and the Nature Pact, the land-based policy on nature is decentralised, as laid down in the Nature Conservation Act *(Wet Natuurbescherming)* (that came into effect in 2017). National government remains result responsible for the implementation of the European Birds Directive and Habitats Directive, and international agreements such as the Bern and Bonn Conventions, the Convention on Biological Diversity and other treaties and regulations. National government provides the statutory frameworks with instruments and standards for nature conservation, and wherever necessary provides guidance, for example in the agreements in the Nature Pact and the nitrogen approach. With the set of statutory rules from the current Nature Conservation Act and soon the Environment and Planning Act, a situation will have been created in which new spatial developments take place within the European frameworks of the Birds and Habitats Directive, and at least a minimum level of protection is guaranteed.

National government has a role in knowledge development, monitoring and evaluation. It is responsible for designating Natura 2000 areas and granting permits on the basis of the Nature Conservation Act (as from 1 January 2022 the Environment and Planning Act) with regard to activities in the national interest (such as the construction of main roads, main railways, airports and military sites). The provinces are the competent authority for granting other permits pursuant to the Nature Conservation Act (as from 1 January 2022 the Environment and Planning Act).

National government is result responsible for realising the biodiversity targets from the Marine Strategy Framework Directive (WFD), and for taking all necessary measures. National government and the provinces are jointly responsible for the implementation of nature policy for the large waters. National government is responsible for generic policy for achieving the Water Framework Directive targets for groundwater and surface water in general, and for specific structural and management measures in the main waterway system.

[41] Parliamentary Papers 35334, no. 82.
[42] Parliamentary Papers 26407, no. 114.
[43] Parliamentary Papers 30825, no. 185

Because municipalities have primary responsibility for the quality of the living environment, of which nature and landscape form an integral part, they too play a crucial role in the conservation of the nature targets via their environment plans and other instruments.

21. Developing sustainable fishery

It is of national importance that the fishing industry is able to make the switch towards more sustainability and tackling wastage, while taking up ever less space.

Task

The task is to achieve an economically and ecologically sustainable future for fishery.
That requires the facilitation and realisation of the transition to more selective fishery with less seabed disruption and fewer emissions and less waste, while maintaining a balance with a future-proof earning capacity for the sector.

The yield from fishery is particularly high in the southern North Sea. Pressure on space is increasing heavily in this area, above all as a result of the expansion of offshore wind farms. Moreover, the ban on pulse fishing and potentially the Brexit will have major consequences for the fishery sector. The task therefore lies in achieving a sustainable future for fishery, while taking account of these developments.

Another question facing the fishery sector is whether and how functions can be combined. Is it for example possible to combine wind farms with forms of (sport) fishery and aquaculture (farming of seaweed, shellfish and crustaceans and algae) or passive fishery? And what opportunities are there for aquaculture, to enable the production of exclusive and/or regional products?

Improving the sustainability of the fishery sector is not only focused on healthy fish stocks and limiting seabed disturbance and greenhouse gas emissions, but also such issues as limiting the loss of material in the form of nets and lead, among others.

Role of national government

The role of national government in this interest is to facilitate the turnaround to a sustainable and futureproof fishing industry and to create the necessary conditions. It is essential that national government remains alert to fostering the best possible combination of fishery with other societal tasks.

3.3 National Main Structure for the Living Environment

Explanatory notes to the maps of the National Main Structure for the Living Environment, onshore and offshore

The maps of the National Main Structure for the Living Environment feature the structural elements at national level for which national government bears (system or result) responsibility. In other words, those elements at which the choices outlined in the NOVI are aimed.
The maps of the National Main Structure for the Living Environment contain selections from all the spatial elements of the national interests. Only those elements are featured which are spatially structured on a national scale. The maps describe the situation now, without including the choices outlined in chapter 4.

The Explanatory notes explain the nature of the task and the current situation for each of the national interests for which national government is responsible.

National Main Structure for the Living Environment (onshore)

Main structure for the transport of persons, goods and energy

- Main railway network
- Main road network
- Main waterway network (inland shipping)
- National high voltage network
- Network of pipelines, Airport
- Major port and/or industrial areas
- Large shore landing points for offshore wind energy

Urban main structure

- Cities with national or regional attraction and their nearby centres

Landscape main structure

- Netherlands Nature Network, National Parks and Natura 2000 areas

World heritage: Cultural and natural landscape

Economic clusters

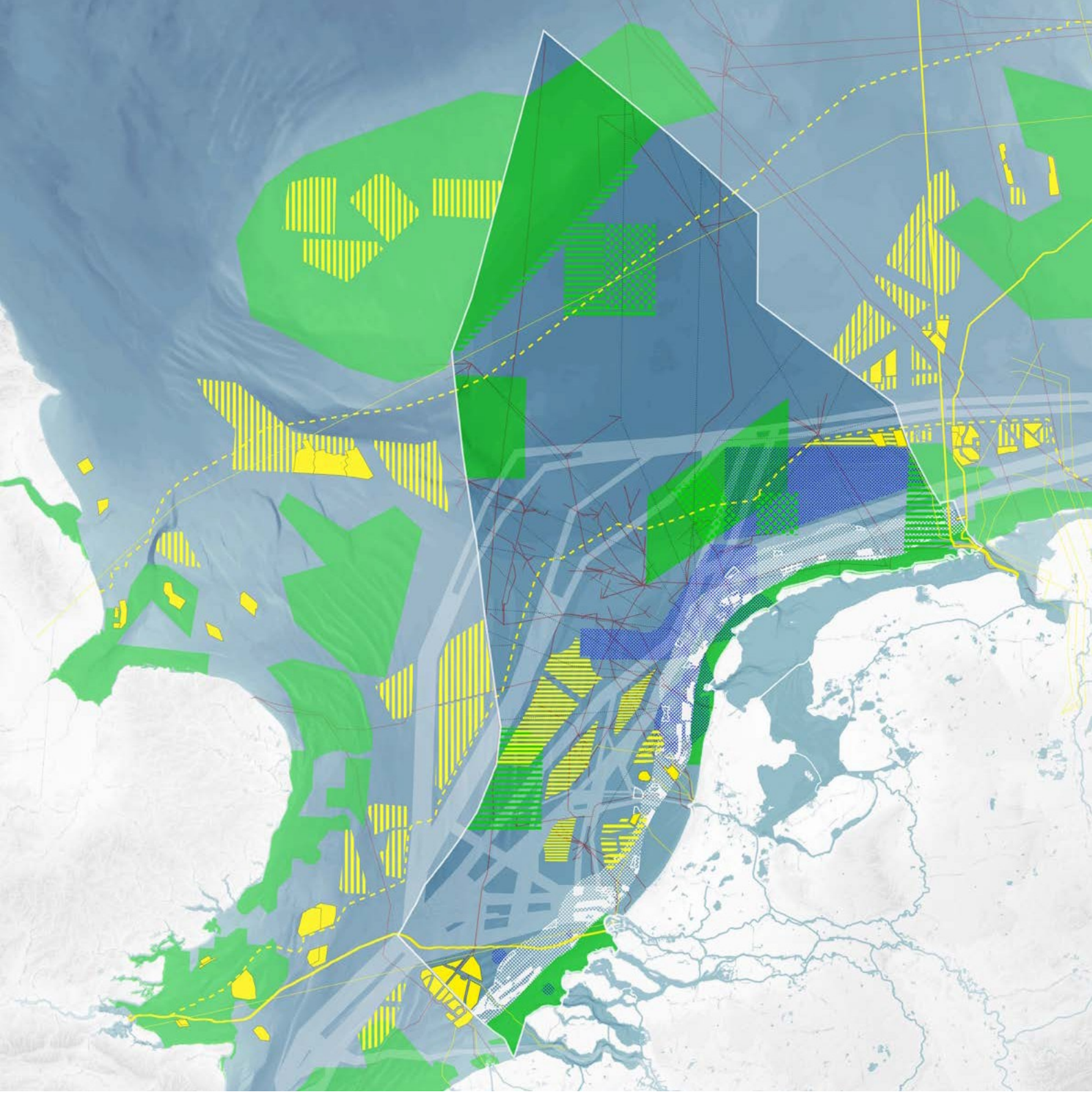
- Major ports and/or industrial areas
- Greenports
- Brainport

Water

- Primary flood defences
- Sea, lakes and large rivers (often part of the landscape main structure)

Background

- Other buildings
- Building, networks, nature and water abroad



National Main Structure for the Living Environment (offshore)

Space for renewable electricity [1]

Existing wind farm

Designated wind energy area roadmap 2023

Designated wind energy area roadmap 2030

Other designated wind energy area

Designated wind energy area abroad (approved/planned/under construction) [2]

High voltage cables and pipelines offshore

Existing cable from wind farms to shore landing points

International high voltage connection

Future international high voltage connection

Network of pipelines

Production of surface resources

Awarded sand extraction area

Search area for sand extraction through to 2027

Reserve area for long-term sand extraction

Protected nature areas

MSFD area

Natura 2000 area

Possible protected nature area to be designated on the basis of the North Sea Agreement

Defence

Military training area [3]

Shipping

(Inter)national shipping routes North Sea

Helicopter routes

(Inter)national helicopter routes North Sea

1 As outlined in the Roadmap Offshore Wind Energy, the southern side of the 'IJmuiden Ver' area will not be used because of the (possible) designation of the partly overlapping area 'Bruine Bank' as a Natura 2000 area. In plotting the areas 'IJmuiden Ver' and 'Hollandse Kust (west)', account will also be taken of integrating a shipping corridor for larger ships. Thea area 'North Hinder' will not be used so as to avoid negative effects on the accessibility of the port of Rotterdam.

[2] Data regarding wind energy areas/offshore wind farm were provided by the Dienst Continentaal Plat (Belgium), Bundesamt für Seeschifffahrt und Hydrographie (Germany) and supplemented with data from EMODnet and 4coffshore.

[3] The unsafe zone at Petten will still be operated in the near future, in line with the National Structural Vision for Offshore Wind Energy - Supplement for the Hollandse Kust (2016).

3.4 From tasks to priorities

To emphasise designation of the tasks facing the living environment in the Netherlands, each task must be specified individually. Hence their individual description in the paragraphs above. However, we must recognise that in many cases, there are interfaces between the various tasks, in particular if they affect specific areas. In many cases, these tasks cannot be tackled in isolation. Wherever a coherent, cross-sectoral, integrated approach is needed, this calls for a different strategy, and that is where the importance of the NOVI strategy becomes clear. For example, despite the need to build more homes, accessibility and quality of life in cities must be improved. We want to maintain a strong agricultural sector, but at the same time reduce environmental burdens, recover biodiversity and make rural areas suitable for a low-CO_2 power supply.

Four priorities

The relationship between all of these tasks is reflected in four priorities. These are complex, extensive and urgent tasks that emerge from or relate to major transitions. They will call for political and societal choices if any progress is to be achieved in these priorities in a way that enjoys broad support and contributes to the quality of the living environment.

1. Creating space for climate adaptation and energy transition

Climate change, the energy transition and the undertakings in the Climate Agreement have a major influence on the physical living environment and require considerations and far-reaching choices in the structuring of our physical living environment (both above and below ground). The measures for mitigating the negative consequences of climate change and bringing about the energy transition must be integrated, despite the enormous pressure on space from other interests and tasks. It is therefore essential that the possibilities for energy saving be utilised.

2. Sustainable economic growth potential

Based on our strong international competitive position, we must work towards a new (sustainable and circular) socioeconomic earning model, and continue to guarantee an excellent establishment climate with an attractive, safe and healthy living environment with sufficient physical space for commercial activity.

Developments in favour of a sustainable and competitive establishment climate call for a joint approach alongside other key tasks such as house building, access, landscape. energy transition, the environment, health, prosperity and social welfare.

3. Strong and healthy cities and regions

Providing an attractive environment in which to live, work and relax calls for choices according to broad-based considerations: a combination with accessibility, health and safety, climate adaption, strengthening and conservation of cultural values and increased sustainability in the built environment. All are essential; it is not only a question of the availability of sufficient high-quality housing, but above all the provision of that housing in an attractive residential environment. The aim is to create cities and regions that form a healthy habitat in which as many functions as necessary and possible are combined.

4. Future-proof development of rural areas

Natural systems and the landscape are under considerable pressure in certain regions. At the same time, rural areas face numerous tasks such as the transition of agriculture, the energy transition, climate adaptation, nature recovery, soil subsidence and expanding urbanisation. Any futureproof development will require the responsible restructuring of rural areas and improved environmental quality.

The aim of the NOVI is to formulate national policy choices (at strategic level) as clearly as possible, both with a view to the long term and taking account of shorter-term urgent requirements. Interests must be carefully considered based on the three consideration principles (see 4.1). Where choices at national level are not yet fully crystallised in the NOVI, or where this is not yet the wisest strategy, decentral choices will be guided via preferred order or strategies and/or an indication will be given of which (regional) processes are most appropriate for clarifying the necessary choices at a later stage, based on the principles outlined in the NOVI. Within these four priorities, attention will be focused on the mutual dependencies and interplay of tensions between the themes and tasks that are so heavily intertwined, such as the quality of the living environment, health, cultural heritage, water, soil and (national) security.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4. Setting the course

The tasks arising from the national interests for national government have been translated into four integrated priorities. We are creating space for climate adaptation and energy transition. We are encouraging sustainable economic growth potential. We are working to ensure strong and healthy cities and regions. And we are encouraging the future-proof development of rural areas. Based on an environment-inclusive approach, we employ three consideration principles that help us in making policy choices.

Explanatory notes to the maps in this chapter
The maps in this chapter show in outline how the national choices in the National Main Structure for the Living Environment are set to change. For each priority, the national choices from the NOVI are illustrated. These choices (in abbreviated form) are included as elements in the key to the maps. The maps show how national government is taking control in a selected? number of subjects. The maps also set the course for the way in which choices for the National Main Structure for the Living Environment will change. The national choices in the NOVI are only outlines, that will be further elaborated in our other programmes, Environment Agendas and NOVI areas. For that reason, the maps are schematic in form.

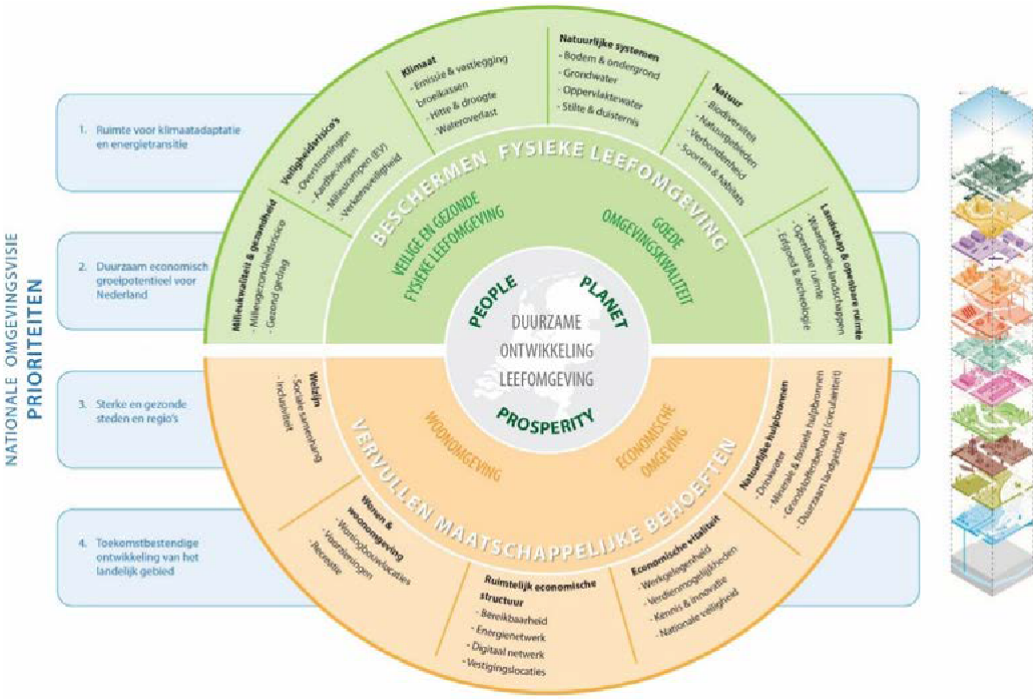
4.1 Environment-inclusive policy: consideration principles

Not everything will be possible, and certainly not everything will be possible everywhere. The pressure exercised by a whole variety of sectors (housing, agriculture, nature, water, aviation, accessibility, sustainable economy, energy and climate, defence) on the physical living environment is growing, both above and below ground (and sometimes also in the air). The growing pressure on the physical living environment demands clear and fundamental choices. Only in this way can we bring about a recognisable, healthy and safe living environment and create space for further growth and prosperity, throughout the country in the future. It is becoming increasingly clear that the various tasks can only tackled if we utilise the potential offered by the whole of the Netherlands and, in all the choices, consider both the aboveground and underground environment, in combination. This does not mean that the same things have to happen everywhere. But it does mean that all levels of government will employ the same consideration principles.

The central focus of all considerations between the various interests is the balanced use of the physical living environment in all its facets (above and below ground). In the Wheel of the Living Environment[44] these considerations are represented and linked to the various aspects of the physical living environment.
The wheel reflects the integrated approach outlined in the Environment and Planning Act for the term physical living environment and emphasises the urgent necessity of integrating all the considerations. The most important area of tension within those considerations is between protection and development.

[44] RHDHV, *Background document: the state of the physical living environment.* 2019.

Figure: Wheel of the Living Environment



The Wheel of the Living Environment forms the basis for the evaluation method of environmental impact assessments. It forms the framework for describing the state of the living environment: the reference situation.

The aim of the Environment and Planning Act is to achieve a balance between:'(a) establishing and maintaining a safe and healthy physical living environment and good environmental quality and (b) effective management, use and development of the physical living environment to fulfil the needs of society.' This dual objective from the Environment and Planning Act has been translated into an environment-inclusive approach to the living environment: development of the living environment goes hand in hand with reinforcing and protecting such values as health, landscape, water safety, nature, cultural heritage, quality of the living environment and environmental quality. Safety, health and sustainability are the basic preconditions for all activities by society, including commercial activities, the energy transition and house building.

However, protection and development do not automatically exclude one another, and can in fact be mutually reinforcing. The environment-inclusive approach aims to make optimum use of the opportunities that emerge from the combination of development and protection. This in turn calls for careful consideration, whereby preventive damage to the various aspects must always weigh heavily. Only if this is not (sufficiently) achievable can we turn to compensation of environmental damage and nature. With the introduction of the environment-inclusive approach, we will prevent the decline of the quality of our living environment, and where possible even bring about quality improvements.

Protection and development cannot always be combined, in every situation. In some cases, they are completely incompatible. Achieving the optimum balance between the two constantly calls for the careful consideration of dissimilar interests. At the same time, these interests cannot be made fully objective. As a result, political choices must be made, that enjoy broad-based support from society. The choices in question are dependent on location, time and other circumstances. Wherever protection and development cannot be combined within an area, the environment-inclusive approach aims to ensure that alongside the planned development, new qualities are also developed.

In order to set the course and to develop the environment-inclusive approach, we make use of three considerations in environmental policy, namely:

1. **Combinations of functions take precedence over single functions;**
2. **Characteristics and identity of an area are the central focus;**
3. **Shifting of responsibilities is prevented.**

Consideration principle 1. Combinations of functions take precedence over single functions

By means of the NOVI, we are seeking to maximise the combination of functions, with a view to the most efficient and carefully considered possible use of our space. At the same time we wish to strengthen the quality of the living environment and the identity of the Netherlands. This requires greater inventiveness and creativity both in the aboveground and underground environment, on water and in the air. It is a question of combination, intensification and transformation. In the Netherlands, we need plans that are developed according to a more integrated approach. Plans in which the full range of interests are taken into account, right from the start, and in which the above ground and underground environment are dealt with in one and the same context. These plans add more value to our living environment than single sector plans. If it appears that integration is undesirable or unnecessary, then this must be made plausible.

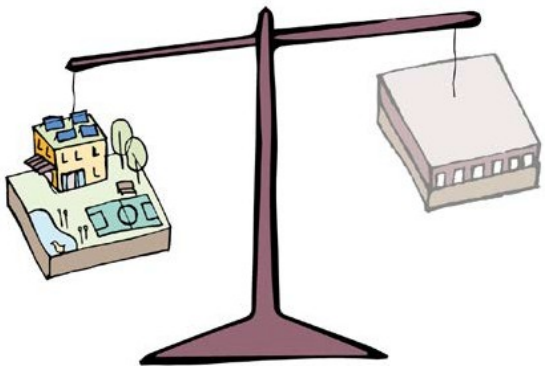
This consideration principle can be implemented as follows:

I. Identify functional synergy as a basis for the mixing of functions in the living environment. Examples are nature and agriculture in peat pasture landscapes, housing and solar energy, nature and housing in new out-of-town developments and country estates. In these cases, there is a 'dual objective' for the physical living environment, which will be integrated in the environmental plan.

II. If mixing is not possible due to a dominating interest or a dominating function, go in search of common interests and ways of 'linking' other functions to the dominating function. Take for example the Common Agricultural Policy, the aim of which is efficient, productive agriculture, while still focusing attention on managing landscape elements.

III. If functions can neither be mixed nor linked together, then the interests can be described as conflicting. In that case, it is essential that functions be separated if we hope to achieve a sustainable earning model (for example for agriculture) or to prevent unwanted external effects (for example if heavy industry is established). In that case, the solution must take the form of landscape integration and/or measures at source.

Consideration principle 1: Combination of functions take precedence over single functions

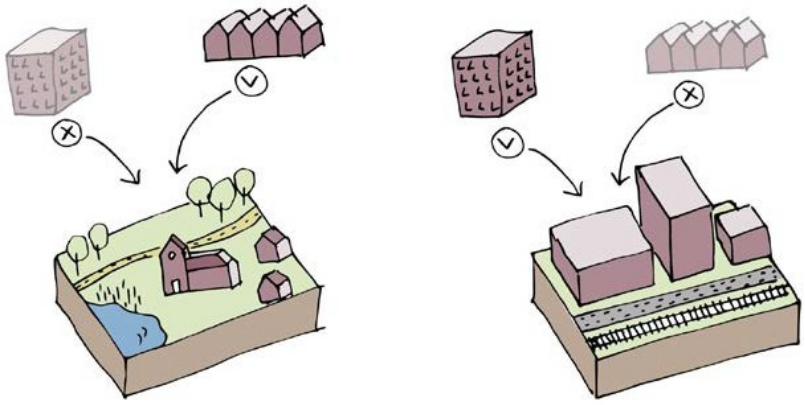


Consideration principle 2 Characteristics and identity of an area are the central focus

The optimum balance between conservation and development and between competitive capacity and quality of life differs from area to area. Certain tasks and interests are more important to one area than another. Appreciation of what already exists and the influence of possible changes may be perceived differently, from place to place. In integrating new functions, account must be taken of the quality of the soil, water, air, cultural heritage and nature. The already existing qualities and development opportunities as perceived by local residents and users are not identical everywhere. This should be reflected in the way in which the tasks are tackled, in each specific area. In the past, too much attention was focused on a single mode of operation, all across the Netherlands. In the NOVI, we aim to make an explicit distinction between individual areas, both in terms of development (for example economic clusters call for a different approach than areas of nature) and in protection (in areas where the Netherlands is below sea level, water safety takes precedence). The perceived (cultural and historical) identity and the opportunities offered by an area, and the appreciation of the characteristics that make up a district, landscape, town or village must all be reflected in the choices made.

Where this is has not already been done, the application of this principle requires a joint elaboration of the area-specific unique landscape and urban qualities and underlying values. Provinces, water authorities and municipalities must record these qualities and values in policy and regulations.

Consideration principle 2: Characteristics and identity of an area are the central focus



Consideration principle 3 Shifting of responsibility is prevented

It is essential that as far as possible our living environment satisfies the possibilities and needs of today's generation of residents, without negatively impacting the opportunities and needs of future generations. In other words, we must avoid shifting responsibility to the future. The same applies to the shifting of responsibility to other locations. As far as possible we must prevent interventions in one area having any negative impact on other areas and the people who live and work there.

The accumulation of problems in specific districts and areas must be prevented, as must the shifting of responsibilities to soil and water, for example by operating a layered approach. 'Avoided use' (saving) or, if that is not possible, more efficient use of the physical living environment can be useful tools. First and foremost, measures must be aimed at preventing safety risks, damage (to health) and pollution, and this must take precedence over the repairing of damage after the event (the principle of prevention and precaution). A fair balance must be achieved between the benefits and costs of measures, and anyone who does experience any negative impact must be duly compensated. Pollution for example should preferably be tackled at source, and in arriving at any decision, the accumulation of risks for people and the environment must be considered.

Application of this principle means at least guaranteeing the various environmental standards, while the aim is to achieve permanent improvement, even after the standards have been met, with the aim of reducing the negative environmental effects on our health and environment to a negligibly low level. The starting point is a source-based approach.

Consideration principle 3: Shifting of responsibilities is prevented

The aim of applying these principles is to develop the Netherlands in an environment-inclusive manner. Key transitions for the physical living environment will be structured by national government, the provinces, water authorities and municipalities in such a way that they contribute to environmental quality in the form of improving existing and/or adding new qualities (rural and/or urban). Depending on the plan and the location, the result could be nature-inclusive urban redevelopment or the creation of energy landscapes, for example. The balance between the three consideration principles can differ for each consideration, because of the different nature, scope and location of the choices. In vulnerable nature areas, for example, the combining of functions will play a less prominent role in the consideration spectrum than in heavily urbanised areas. Application of the layer approach to plan making can be a useful instrument in preventing the area-specific shifting of responsibility to soil and water.

In implementing the NOVI and in considering the balance between interests in programmes and areas, national government will demonstrate on the basis of the tasks and areas in question how the environment-inclusive approach and the consideration principles can best be used. The Implementation Agenda, for example explains how the agents of national government will include the principles, and the research and design programmes/guidelines on environment-inclusive development have already been announced. In the Cooperation Agreements, accords will be reached with other levels of government on how the consideration principles should be translated into a decentralised approach and how the various levels of government can work together. If developments in the living environment make it necessary, more control-based tools from the Environment and Planning Act (such as instruction rules in the Decree on the quality of the living environment, project decisions and instructions and instructions) may be added.

4.2 From priorities to policy choices

4.2.1 Priority 1

Space for climate adaptation and energy transition

Climate change, energy transition and the national and international climate goals have a huge influence on the physical living environment, and demand considerations and far-reaching choices in the structuring of our physical living environment (both above and below ground). These transitions must be carefully integrated, despite considerable pressure from other tasks and interests.

Policy choice 1.1

In 2050, the Netherlands is climate resilient and water robust. In (re)development processes, a greater risk of damage and victims due to flooding and extreme weather must be avoided wherever reasonably achievable. We retain and reserve sufficient space for future water safety measures.

A climate resilient Netherlands is geared to the consequences of climate change and sea level rise. Although the pace of change is surrounded by uncertainty, climate change and sea level rise are set to continue beyond 2050. The consequences are an increased risk of flooding, water nuisance, heat stress and drought. The Delta programme and the Sea Level Rise Knowledge Programme are focused on finding relevant solutions. At the end of 2019, the Policy Round Table on Drought issued recommendations to help make the Netherlands more resilient to the risk of drought. All 46 recommendations with a relevant timetable have now been allocated to individual parties, and given a place in regular (interadministrative) projects and programmes such as the Delta Programme, Integrated River Management and the environmental visions of provinces and municipalities.

Climate adaptation calls for important choices and robust design for both urban and rural areas, both in the higher and lower-lying parts of the Netherlands, in respect of the quality of the living environment. We make use of natural systems to reinforce green and blue structures. Particular attention is required for the vital elements of our infrastructure (such as energy, telecommunications, IT facilities, national security, main infrastructure, water and healthcare facilities). Climate change is also threatening public health. This fact underlines the necessity of taking measures for mitigation and adaptation. These will be focused both on the physical and the social domain. At the same time, account will be taken of undesirable side effects for public health.

To allow a flexible and adaptive long-term water safety strategy, we are making choices as outlined below.

Developing and protecting the coastal zone

The Cabinet contributes to a coherent programme of development, protection and management of the Dutch coastal zone guaranteeing the national interests now and in the future, as elaborated in the Coastal Pact *(Kustpact)*[45]. The objective of the Coastal Pact is to record and implement agreements between parties for identifying the best possible balance between protection and preservation of the core qualities and collective values of the coastal zone on the one hand and the development of that zone, on the other. The core qualities and collective values include panoramic views and large nature, the natural dynamism of the coastal system, robust water management, contrast between compact built-up centres and extensive unbuilt areas, contrast with the hinterland, coastal heritage in the dunes and the hinterland, vitality of coastal towns and the hinterland, the qualities for use and the cultural and mental relevance of the coastal zone. All partners in the Coastal Pact support these core qualities and collective values.

[45] Ministry Infrastructure and the Environment et al, Coastal Pact, The Hague 2017.

Water safety in the coastal zone.

Dual use of space: In the multifunctional flood defences in Katwijk, underground parking facilities have been created beneath the promenade.

The flood defences along the coastline with be maintained according to the principle ‘soft where possible, hard where necessary’. The foundation of the coastline consists of the sand bed between the inner line of dunes and the continuous depth line at NAP-20 metres (Amsterdam Ordnance Datum) in the North Sea. This sand bed is an integral part of the coastal zone, consisting of dunes, dykes and coastal towns, with their wide variety of functions. The coastline has now been made safe, partly thanks to the way in which the so-called weak links have been tackled. Nonetheless, the coastline is subject to structural erosion due to sea level rise. Without intervention, along the entire coastline, the Netherlands could shrink as much as 1 metre per year, on average. In response, the key theme is maintaining the surface area of the coastline through sand suppletion. This process successfully combines the targets for long-term safety and good spatial development.

In close consultation with other marine functions and along the coast, the Cabinet has ensured the availability of sufficient sand dredging locations on the North Sea. These are essential to satisfy the demand for sand for maintaining the coastal foundations of the North Sea. Investigations are underway to determine when other strategies will become relevant, for coastal reinforcement (such as using natural processes).

Major hydrological interventions in the last century meant that the Netherlands was safe and prosperous but at the same time changed the natural flow of water and sediment in the IJsselmeer region, the Southwest Delta and the Wadden Sea. As a consequence, characteristic habitats disappeared. These areas are characterised by multifunctional use of space, and are of major landscape and cultural and historical value. At the same time, new developments in climate change, energy transition, economic development and recreation are leading to new tasks and opportunities.

The Cabinet is working alongside regional governments and civil society organisations to make the large waters futureproof, combining high-quality nature with a powerful economy. By a series of measures, we aim to create missing habitats, to reinforce the estuarian character of the Delta, to recover the natural dynamism of the coastal zone and to ensure more gradual transitions between land and water and between fresh and salt water and/or better links between sea, estuaries and rivers. The aim is to arrive at a stable and coherent ecological network of large waters. In conjunction with the structuring of the water system, we will make the Natura 2000 areas and other nature areas in the large waters more robust. As part of this programme, Area Agendas have been drawn up for the IJsselmeer area and will be prepared for the Southwestern Delta and the Wadden area.

River area

The river area faces a huge and urgent water safety task, that has emerged from new water safety standards and the rise in river discharge levels due to climate change. This task can be tackled by a combination of dyke reinforcement and river widening. The government will also be considering the interests of low water levels, water quality, nature, ecology, shipping and freshwater, and is taking measures that will result in a sustainably functioning system of rivers.

Water safety in the river area.

Space for the River: New nature along the banks of the river Lek at Culemborg.

In the Rijnmond-Drechtsteden area, essential tasks have emerged due to climate change. The storm surge barriers, in particular the Measlandkering and the Hollandsche IJsselkering, play a crucial role.

Freshwater supply

As a result of climate change, water availability is decreasing, which will in turn result in shortages of freshwater. River discharge levels are set to fall and we will also face longer dry periods and sea level rise, which in turn will bring about salinisation as a consequence of seepage and salt intrusion. Land use is also changing, and demand for water is rising in many places, thereby further increasing the vulnerability of water consumers (agriculture, drinking water, shipping, nature, industry, recreation). Against that background, the Cabinet recognises the importance of also considering the effect of all choices made in the living environment on the robustness of the water and soil system. In recent situations of water shortage (for example the summer of 2018), the water consumption hierarchy *(see text block accompanying policy choice 4.1)* determines how the water is distributed.

In the National Water Plan 2016-2021[46], the Cabinet set the course for the sustainable and efficient management and use of freshwater. The Delta plan for Freshwater[47] contains the measures essential for ensuring a sustainable freshwater supply and making the Netherlands resilient to water shortages. Sufficient freshwater is a shared responsibility and requires combined efforts in the main water system, the regional water system and among users.

[46] Ministry of Infrastructure and the Environment & Ministry of Economic Affairs *National Water Plan 2016-2021*, The Hague 2015.
[47] Delta Commission, *Delta Plan Freshwater,* The Hague 2017, see https://deltaprogramma2018.deltacommissaris.nl/viewer/

Stress test

To prevent additional risks of damage and victims in the face of extreme weather conditions, far-reaching developments in the physical living environment will be preceded by stress tests. On the basis of plans and measures, we will reduce the risk of flooding in the framework of water safety policy. Those same plans and measures will be deployed to limit the possible consequences of flooding, drought and heat.

Policy choice 1.2

To achieve the climate targets for 2050, our choice is to provide for the majority of energy production by means of wind farms on the North Sea. Space at sea, however, is also scarce: as well as demand for space for energy, space is needed for shipping, fishery, nature (recovery), air transport, defence training areas, sand dredging, oil and gas production and recreation. The overall task is to achieve the ideal societal balance in the spatial development of the North Sea within the parameters of a healthy ecosystem. This is currently being elaborated in the North Sea 2022-2027 Programme.

The North Sea is one of the most intensively used seas in the world. At this moment, this scale of activity is primarily determined by the intensive shipping traffic from and to the port of Rotterdam and to other major international ports around the North Sea, fishing, military training areas and oil and gas production. Over the past decade, this demand for space has been intensified through the addition of reserves for ecologically protected areas and wind energy production areas. The map 'National Main Structure for the Living Environment (sea)' provides an overview of claims for space on the North Sea. Based on current understanding, wind energy is the most cost-effective means of generating renewable energy in order to meet the targets from the Paris Climate Agreement for 2030 and 2050. It is essential that a large number of wind turbines be installed on the North Sea, since the space for such turbines on land is limited.

Wind turbines on the North Sea.

In order to restrict the take-up of space on land, the focus is on the generation of wind energy on the North Sea. This picture shows the Princess Amalia Wind Farm.

In the search for more space for wind turbines, the NOVI will initially focus on the areas for offshore wind energy as referred to in the National Water Plan 2016-2021, the National Structural Vision for Offshore Wind Energy, Expansion area Hollandse Kust[48], the Roadmap Offshore Wind Energy[49] and the Roadmap Offshore Wind Energy 2030[50].

[48] Ministry of Infrastructure and the Environment & Ministry of Economic Affairs, *National Structural Vision for Offshore Wind Energy: Partial revision of the National Water Plan 2016-2021 due to the designation of the areas Hollandse Kust and North of the Wadden Islands for the component offshore wind energy*, The Hague 2014.

[49] Ministry of Economic Affairs, *Roadmap Offshore Wind Energy*, Parliamentary Papers 33561, no. A/11, The Hague 2014.

[50] Ministry of Economic Affairs and Climate Policy, *Roadmap Offshore Wind Energy 2030,* Parliamentary Papers 33561, no 42,

The NOVI also ties in with the Recommendation report: Assessment of North Sea Strategy 2030[51], in which potential offshore regions for new wind energy areas have been identified in relation to the draft Climate Agreement, together with the spatial elaboration of promising landfall points along the coast.

Shortage of space

As a consequence of all these developments, space in the North Sea is in shorter supply than ever. There are also growing concerns about the capacity of the ecosystem, in combination with the effects on this system as a consequence of climate change. We are already faced with the task of turning around the decline of the North Sea ecosystem into a situation of recovery. As a consequence of the history of its creation, and of the rich maritime past, the North Sea itself is rich in archaeological heritage, that also enjoys protected status. The further expansion of offshore wind energy (and space for cable routes from wind farms to shore) is therefore only possible if a number of conditions are met in respect of ecology, interfaces with other interests on the North Sea (fishery, shipping and passage through wind farms, sand dredging strategy and military training areas), the integration onshore of links to the high-voltage grid and a match to the demand for electricity. These are all integral elements of the North Sea 2022-2027 Programme.

All of the above developments nonetheless offer possibilities for earning models and export opportunities on the basis of innovative technology and synergetic effects, through the multifunctional and innovative use of the space available. There are for example already ideas, research and first-stage experiments in the field of combining wind farms with aquaculture, and alternative forms of fishery, the strengthening of nature with oyster banks, the generation of energy from the sun and tidal flows, and the storage of energy and CO_2 in empty gas fields.

International

Both the use of the environment and the nature of the North Sea extend across the entire international North Sea Basin. The image, as outlined above, of an ever busier North Sea and the resultant issues relating to the sharing out of the already scarce space and the pressure on the ecosystem, are also emerging in the neighbouring countries, to a greater or lesser extent. Research, assessment and policy development for the North Sea are to a large extent a matter for international and even global programmes at EU and OSPAR level.

In the Dutch sector of the North Sea, outside the 1 km coastal strip, the only competent body is national government. Within the context of international policy frameworks, it is the task of national government to identify the appropriate societal balance in the development of all uses that place demands on space in the North Sea, in respect of a healthy ecosystem. The ambition is to arrive at sustainable and safe use of the North Sea that contributes to the societal, economic and ecological goals of the Netherlands. This must take into account the fact that investments in the economy and the related infrastructure and recovery and development of the ecosystem are long-term objectives. This in turn requires clearly formulated future-proof choices with solid societal ownership for the longer term with regard to the combination, zoning and prioritisation of use, investments in sustainability and knowledge, adaptive policy and the efforts aimed at international consultation, cooperation and policy development.

Landfalls

In establishing a societal balance on the North Sea, the relationship with the spatial and economic development of the adjacent parts of the Netherlands must be considered, together with the spatial influence on land. Offshore wind energy will make landfalls at a limited number of sites along the coast, for connection to the national high voltage grid (for electricity) or gas network (for molecules such as hydrogen). In selecting the routes and landfall locations, we take into account spatial influence on land, and the existing network, natural environment and living environment. To make optimum use of offshore energy, landfall locations will wherever possible be further concentrated at sites of energy-intensive commercial activity (both industry and for example data centers). This prevents the unnecessary

The Hague 2018

[51] Consultative Body for the Living Environment, *Advisory report: Assessment of North Sea Strategy 2030,* The Hague 2019.

transport of energy to the hinterland, with the necessity for creating a new infrastructure, and the space required for that infrastructure. If it proves meaningful to continue to expand the growth of offshore wind energy to 2050 in response to growing demand for electricity, other landfall locations further inland may become necessary. Other possibilities for the energy infrastructure are also being investigated for industrial clusters located further inland, such as the Chemical Cluster Emmen and Chemelot, whereby one specific point of attention is maintaining a level playing field for energy costs. These clusters of energy-intensive commercial activity are themselves undergoing an energy transition and a transition to circular production methods. These companies also deliver large volumes of residual heat. It is extremely desirable for this residual heat to be used for example for heating the built environment.

The energy transition has consequences for the requirements imposed by these companies on the physical living environment. Sometimes more space is needed, or other types of connection, thanks to the creation of new chains. These changes also have consequences for example for residential locations or nature in the immediate vicinity.

Choices on the North Sea

The choices for the North Sea through to 2030, with further options through to 2050, will be laid down by national government in the North Sea Programme *(Programma Noordzee)* 2022-2027, on the basis of a Strategic Environmental Assessment (SEA). To ensure a solid administrative basis with societal ownership for the choices for the long term, national government signed a North Sea Agreement *(Noordzeeakkoord)* with the various interests groups and stakeholder organisations, in 2020. This Agreement outlines the undertakings relating to choices and policy aimed at establishing a balance between the strategic tasks for the energy transition from the Climate Agreement, for nature recovery and for a healthy future for fishery on the North Sea, in real terms, and for the long term, while taking account of other users such as shipping and sand dredging. The agreements reached relate primarily to 1) the protection and reinforcement of the ecosystem in accordance with EU regulations, 2) the rollout of wind farms through to 2030 and beyond, in accordance with the Climate Agreement and options for through passage and combined use, 3) the adaptation of beam trawling according to its nature and scope, and 4) the intention of establishing structural cooperation within a North Sea Consultative body.

Offshore airport

Space is not only in short supply at sea, but also in the sky above. The search for a possible location for an offshore airport is restricted by the already initiated rollout of offshore wind farms (in the framework of the Energy Agreement *(Energieakkoord*) and the Roadmaps *(Routekaarten)* 2023 and 2030 for the Climate Agreement *(Klimaatakkoord)* in accordance with National Water Plan (*Nationaal Waterplan*) 2016-2021 and the climate ambitions. It is already fixed Cabinet policy to implement the 'roadmaps for offshore wind' and to fulfil the further climate ambitions for 2015. At the request of the Dutch House of Representatives, a quick scan has been undertaken for a possible offshore airport site.[52] In its Aviation Policy document, the Cabinet has opted against the construction of an offshore airport and even against starting further examination of the possibilities. On the other hand, the parameters have been laid down for parties wishing to carry out new investigations on the basis of which the Cabinet may be willing to reconsider this decision.

Policy choice 1.3

We are making the energy infrastructure suitable for renewable energy sources and reserving the necessary space.

The transition to renewable energy will demand more space for the transport, distribution, conversion and storage of energy, both above and below ground. The map 'Energy infrastructure and large-scale energy generation' in the Explanatory Notes gives a picture of the current large-scale national energy infrastructure on land, and existing and designated wind energy areas. Instead of a small number of

[52] Ministry of Infrastructure and Water Management, *Results of the quick scan offshore airport*, Parliamentary Papers 31936, no. 577, The Hague 2019.

relatively large 'point sources' (power stations) and one-off transport of energy, we will see larger numbers of often decentralised sites, varying widely in size (solar, wind and geothermal energy) and two-way traffic (for use and production) for energy. It is important that future power supply be well integrated in the European energy network.

Energy Main Structure Programme

National government is drawing up an Energy Main Structure Programme of the energy system.[53] The ambition of the Energy Main Structure Programme is to ensure the timely availability of sufficient space for the national energy main structure, on the basis of an integrated assessment in relation to other tasks and interests, within an (inter)national context, and taking account of a good-quality living environment as the essential parameter. The programme relates to spatial policy on land and the large waters, and takes as its time horizon the period 2030-2050. In other words, the programme relates to the entire territory of the Netherlands, with the exception of the North Sea. In these considerations, account will also be taken of the physical occupation of space, and environmental and risk contours. The vital energy infrastructure must be built to be climate proof, and flood proof.

Large-scale national energy infrastructure

National government is drawing up a National Energy System Programme (Nationaal Programma Energiesysteem) to set aside space for the national energy main structure.

In the Energy Main Structure Programme, close collaboration will be sought with all levels of government and other stakeholders, and the programme will be established in interaction with other projects and programmes such as the Regional Energy Strategies (RES). In the National RES Programme, national and local governments will agree on the choices (each from their own roles and responsibilities).[54] Harmonisation will also be sought with the Soil and Subsurface Programme.

Hydrogen and green gas

CO_2 neutral gaseous energy carriers such as hydrogen and green gas will continue to play an essential role in the energy system in 2050 and beyond. These forms of energy will be required in industry as a raw material, supplying high-temperature process heat. In the mobility sector, gas-based fuels will be needed for a proportion of heavy mobility. In the built environment, they may be needed for supplying peak capacity in heating networks. In the process of making old city centres and peripheral areas more sustainable, they will continue to be needed wherever heat networks and electrification are difficult to achieve. Finally, renewable gases could play a role in delivering peak capacity in the event of high electricity demand or during periods of low electricity production due to unfavourable weather conditions. For this latter function, the use of hydrogen and green gas will be an element of the mix

[53] See also Ministry of Economic Affairs and Climate Policy, *Demarcation of the Energy Main Structure Programme,* Parliamentary Papers 31239, no. 317, The Hague 2010.

[54] National Programme Regional Energy Strategies, see www.regionale-energiestrategie.nl

with many of the other solutions available for this function, such as demand-based supply and electrical and mechanical storage.

This demand, which by 2050 will be greater than is currently the case, will have to be met. The frameworks for biomass policy (sustainability, high quality and efficiency) and the sustainable framework apply to the necessary upscaling of the production of green gas and hydrogen. Space will be needed for the production, transport, storage and conversion of these gases, both directly in the form of physical space for pipelines and installations, and indirectly in terms of risk contours and available environmental space. This demand for space will be considered in the Energy Main Structure Programme.

The production of hydrogen results in energy loss. As a consequence, for the same quantity of energy in hydrogen, more wind turbines or solar panels will be needed than if the same energy were to be purchased in the form of electricity. These additional wind turbines or solar panels will also require extra space. If hydrogen is then reconverted into electricity, the result is further energy loss. From the point of view of efficient use of space, it is therefore essential that hydrogen above all be employed in those applications where it is necessary, while other energy carriers are selected for all other cases. Nonetheless, such considerations must be viewed in a broader context of international market development, supply and demand, import and export, costs, etc.

Charging infrastructure

The transition task to fully sustainable mobility will require a smart and reliable charging network and energy system that covers the entire country. The underlying principle is that the provision and operation of the charging infrastructure is a primary responsibility of market parties. The charging infrastructure must not form an obstacle in the roll-out of electric transport. It must remain attractive for individual consumers, now and in the future, to drive electric, and to be able to make use of the charging infrastructure simply and uniformly, throughout the Netherlands. In the National Charging Infrastructure Agenda[55] activities have been planned that will guarantee:

- a charging infrastructure that offers sufficient coverage;
- shorter lead times and the strategic location of a charging infrastructure before demand emerges;
- accessible information for example about the location and availability of the charging points and charging prices;
- a futureproof charging infrastructure geared to smart charging in order to avoid overburdening the capacity of the electricity grid as far as possible.

Market parties, municipalities, provinces and national government are currently jointly responsible for the roll-out of the (fast) charging infrastructure. National government, centres of expertise and sector organisations and market parties are supporting the roll-out for example by encouraging cooperation at regional level and offering expertise, tooling, guidelines and standards.

Numerous choices about the charging infrastructure will influence the quality of the physical living environment. These choices relate to the location of charging points, the method by and route along which energy is transported to these charging points and choices about energy storage. In these choices,

too, the combination of tasks will take preference (for example combining high voltage lines to charging points with other infrastructure) while at all times taking account of the characteristics and identity of areas (fewer or other types of charging points in historic centres). The shifting of responsibilities must be prevented (for example locating charging points close to existing petrol stations alongside motorways. As in respect of other choices, here too, the influence of choices on the quality of the physical living environment, landscape and the robustness of the water and soil system will have to be considered.

Policy choice 1.4

We will fulfil the renewable energy task taking account of the quality of the environment, as far as possible in combination with other functions.

[55] Netherlands Enterprise Agency (*Rijksdienst voor Ondernemend Nederland* RVO), *National Charging Infrastructure Agenda (Background Memorandum for the sector table Mobility in the framework of the Climate Agreement)*, The Hague 2019.

The spatial implications of the renewable energy task may be considerable[56]. The most visible component will be the generation of electricity by wind and sun. The scale of the effects will depend on the volume of own generation and of specific choices about the layout (extensive wind and solar arrays versus intensive arrays). For solar PV on roofs, for example, the bandwidth for the required surface area by 2050 is between 67-215 km_2, for on-land solar PV between 160-783 km_2.
The bandwidth for onshore wind is 1,250-5,000 km_2 (10-20 GW), and for offshore wind 3,800-12,000 km_2 (38-72 GW). Electrolysis also requires space; the bandwidth suggests 1-15 km_2, which will above all have to be located in already densely occupied port areas. It goes without saying that the eventual spatial effects in terms of surface area and appearance will depend on the choices made. For example, were we to opt for nuclear energy, the installed wind and solar capacity would be reduced. Choices in terms of heat supply will also affect the required installed wind and solar capacity.

In collaboration with the energy sector, consumers and other stakeholders, the various levels of government will use the Regional Energy Strategies (REG) to fulfil the undertaking in the Climate Agreement that 35 TWh of large-scale renewable electricity generation on land (>15 kW) must have been established by 2030.
They must however take into account the supraregional effects on landscape, nature, agricultural land and the energy main structure. Municipalities bear primary responsible for renewable heat supply. In the Transition Visions on Heating, choices will be made on a neighbourhood by neighbourhood basis on the provision of heat.

Governments, market parties and civil society organisations are working together to achieve the targets on time as laid down in the Climate Agreement. The National RES programme provides a platform for mutual cooperation, comparison, learning and challenges. This programme also includes the monitoring of targets, as laid down in the Climate Agreement. National government is involved in the sense that the energy transition must be given the space it needs to ensure cost efficiency while protecting the living environment (spatial efficiency as well as cost efficiency). Utilisation of the possibilities for energy saving will prove valuable. As a consequence, less space will be needed for the production, transport and storage of energy.

The energy transition can serve as a lever for quality improvement both in spatial terms and for example for ecological, economic and social improvements. This can be achieved with the Pilot Programme Generating Energy of the Government Real Estate (*Opwek van Energie op Rijksvastgoed* - OER), according to which a variety of projects for energy generation will be organised in consultation with the RES. In line with the principle of the combination of functions, within those pilots, opportunities will be investigated for example of combining wind with the creation of woodland or nature, as is already common practice abroad, and installing solar panels on noise barriers, thereby more effectively integrating energy in specific landscapes. The planned creation of new woodlands and nature areas for example in the Woodland Strategy *(Bossenstrategie),* in combination with energy can offer new opportunities, specifically because energy can serve as an earning model for landscape management.

Depending on the characteristics and identity of the area, more or less defined roles can be attributed to RES and to the following considerations.

Underground environment

Both aboveground and in the deeper underground environment, the energy transition could have a huge influence on the use of space. In the form of geothermal energy, the underground environment can make a substantial contribution to the supply of renewable heat and cold. The subsurface also offers possibilities for the storage of CO_2 and energy carriers such as nitrogen, hydrogen and compressed air, and the seasonal storage of excess heat. These applications are all possible on condition they are implemented sustainably, safely and efficiently. All these activities will require both aboveground installations and underground source drilling, cables and pipelines.
In urban areas, the underground environment is already overfull. Lack of space for cables and pipelines is a particular point for attention. For the construction, maintenance and replacement of underground networks of cables and pipelines, it is therefore essential that as far as possible the tasks be combined

[56] Berenschot and Klavasta, *Climate-neutral energy scenarios 2050*. Scenario study for the integrated infrastructure assessment 2030-2050. Utrecht 2020. Appendix to the Ministry of Economic Affairs and Climate Policy, Cabinet Approach to Climate Policy. Parliamentary Papers 32813, no. 493, The Hague 2020.

while striving for the lowest costs to society and the least possible nuisance levels. In the interadministrative Soil and Subsurface Programme, these subjects will be discussed. The aim of this programme is to encourage the sustainable management and use of soil, the underground environment and groundwater.

Mobility

The Climate Agreement includes a whole raft of measures for mobility that will require spatial measures at regional level. Plans for 2030 specify that much transport will be battery-electric powered and (above all for heavier traffic) hydrogen powered. With this in mind, the already mentioned National Agenda for the Charging Infrastructure has been prepared[57].

One of the agreements in this agenda is that every Dutch municipality must have adopted an integrated vision on the roll-out of the charging infrastructure by the end of 2020, secured within the environmental vision, the environment plan and the RES. For provinces and municipalities, the implementation of this agenda will be translated into regional mobility plans. The local demand for a charging infrastructure will be an integral part of all these programmes. In addition, the signing of the Climate Agreement marked the start of a regional and national programme of smart and sustainable mobility. These programmes will frame the mobility components of the Climate Agreement. The National Programme RES will underline the links with among others the NOVI and the National Housing Agenda 2018-2021[57]. The agreements in the framework of these regional and national programmes will be placed on the agenda of the Administrative Consultation MIRT (Multiyear Programme for Infrastructure, Spatial Planning and Transport. At regional level, links will be established between the implementation programme for the National Agenda for the Charging Infrastructure, the Smart and Sustainable Mobility Programme and the RES.

Rural areas and large waters

Rural areas and the large waters will make a major contribution to reducing CO_2 emissions. The consequences of climate change must be taken into account in the structuring and restructuring of these areas. Wind turbines and solar farms must be carefully integrated in the landscape.

Innovation can prove useful in this process, for example with smaller wind turbines that generate more energy. Water offers space for energy production, both for the production of heat and electricity. Developments in the field of aquathermal energy are advancing rapidly. Solar farms and wind turbines can also become economic drivers for rural areas. For example if wind turbines are installed in agricultural areas, the production of renewable energy generates income for agriculture and for small rural centres (take for example a 'village turbine' that contributes financially to local facilities). Above all in areas where agriculture is under pressure due to salinisation and for example in population shrinkage areas, these opportunities can be valuable.

Biomass

There are also possibilities for biomass for example from agricultural residues. Sustainable biomass is a vital element of the climate task and the transition to a circular economy in the Netherlands. According to expectations, sustainable biomass will only be available on a limited scale, not only in the Netherlands but also globally, despite the huge demand for these materials. The aim of the Cabinet policy is to make responsible and effective use of sustainable biomass.

[57] Ministry of the Interior and Kingdom Relations, *National Housing Agenda 2018-2021*, The Hague 2018.

Innovations in renewable energy

Groningen Attero Green Gas: Pilot that links huge regional supply with national demand

Hydrogen refuelling station for public transport, Delfzijl

80% battery recharging in just 20 minutes at fast-charge stations..

Kipster chicken farm supplies electricity for bicycles.

Thermal energy from surface water: Blue Energy on the Afsluitdijk. In this trial installation, energy is extracted from the difference in salt concentration between freshwater and seawater.

Combination of tasks

In the regions, the measures in the RES programmes will be combined with other tasks in urban and rural areas. Reserves will also be set aside for transport, distribution and storage of energy. Because the changes brought about by these measures have such a direct influence on the human living environment and because measures often need to be integrated in already heavily occupied environments, it is essential that they be planned coherently, wherever possible. In urban areas, measures for the energy transition can for example be combined (and linked) with building tasks, with the healthy, safe and climate-adaptive structuring of our environment and with measures for accessibility and renovations that may be introduced for other reasons. In this way, nuisance will be limited as far as possible, resulting in the highest possible quality living environment. One essential precondition is three-dimensional planning.

The measures agreed upon in the RES will be implemented via provincial and municipal environment visions in the environmental plans, programmes and licences issued by municipal authorities. In the Climate Agreement, it is agreed that environmental permits will have been issued for solar and wind projects before 1 January 2025.

Choices for the integration of renewable energy

Suggestions in the RES strategy are:

1. *Preference for large-scale clustering*

Large-scale clustering of the production of renewable energy (using wind turbines, possibly in combination with solar fields) will reduce the shifting of spatial responsibilities and contribute to reduced costs. Wherever possible, this is the preferred option. However, there is an explicit consideration with regard to other values, such as landscape characteristics, national security, nature, cultural heritage, water and soil, and support in society and at administrative level. A precondition is that local residents are truly closely consulted, can influence the use and where possible can benefit from the revenue. It is essential that attention be focused on nature-inclusive design and management for renewable energy projects, in order to prevent disruption or harm to nature and biodiversity, as far as possible. There are also possibilities for reinforcing nature, for example by introducing underwater nature around wind projects on the water.

2. *Preferred order for solar pv*

At present, increasing numbers of solar farms are being developed in field arrays, sometimes to the detriment of the quality of rural areas. To encourage the careful selection of locations, in collaboration with other levels of government and other stakeholders, national government has elaborated a preferred order.

The consideration principles in the NOVI result in a preference for solar panels on roofs and facades of buildings. Integration on rooftops and facades not only contributes to the combination of functions; because they are placed on existing buildings, the introduction of solar panels at these locations will generally have less influence on the characteristics or identity of an area.

According to those same principles, unused sites in built-up areas are the next preference. In order to satisfy the outlined energy targets, it may prove that locations in rural areas are also needed. In that case, too, the preference will be to identify smart functional combinations. Although areas of nature and agricultural areas are not entirely excluded, the clear preference is on land with another primary function than agriculture or nature, such as water purification installations, waste dumpsites, inland waterways or land under national government management (for example Rijkswaterstaat, ProRail, the National Forestry Agency *(Staatsbosbeheer)*, wherever possible including motorways and railway banks and verges.

This preferred order has no sequential element. Once the possibilities for solar pv have been investigated, a start can immediately be made on putting the chosen possibilities into use. This preferred order will be included in the Regional Energy Strategies (RES).

As part of the RES process, the quality of the chosen sites will be assessed in the National RES Programme. This assessment will include an examination of how spatial interests have been considered in respect of one another. For solar pv applications, a determination will be made whether the preferred order from the NOVI was correctly applied in these considerations. Moreover, the Living Environment Buildings Decree (BBL - *Besluit Bouwwerken Leefomgeving*) will be revised, giving municipalities more options for promoting solar pv on roofs and facades. The subsidy scheme SDE++ will also be adapted wherever it can contribute to complying with this preferred order.

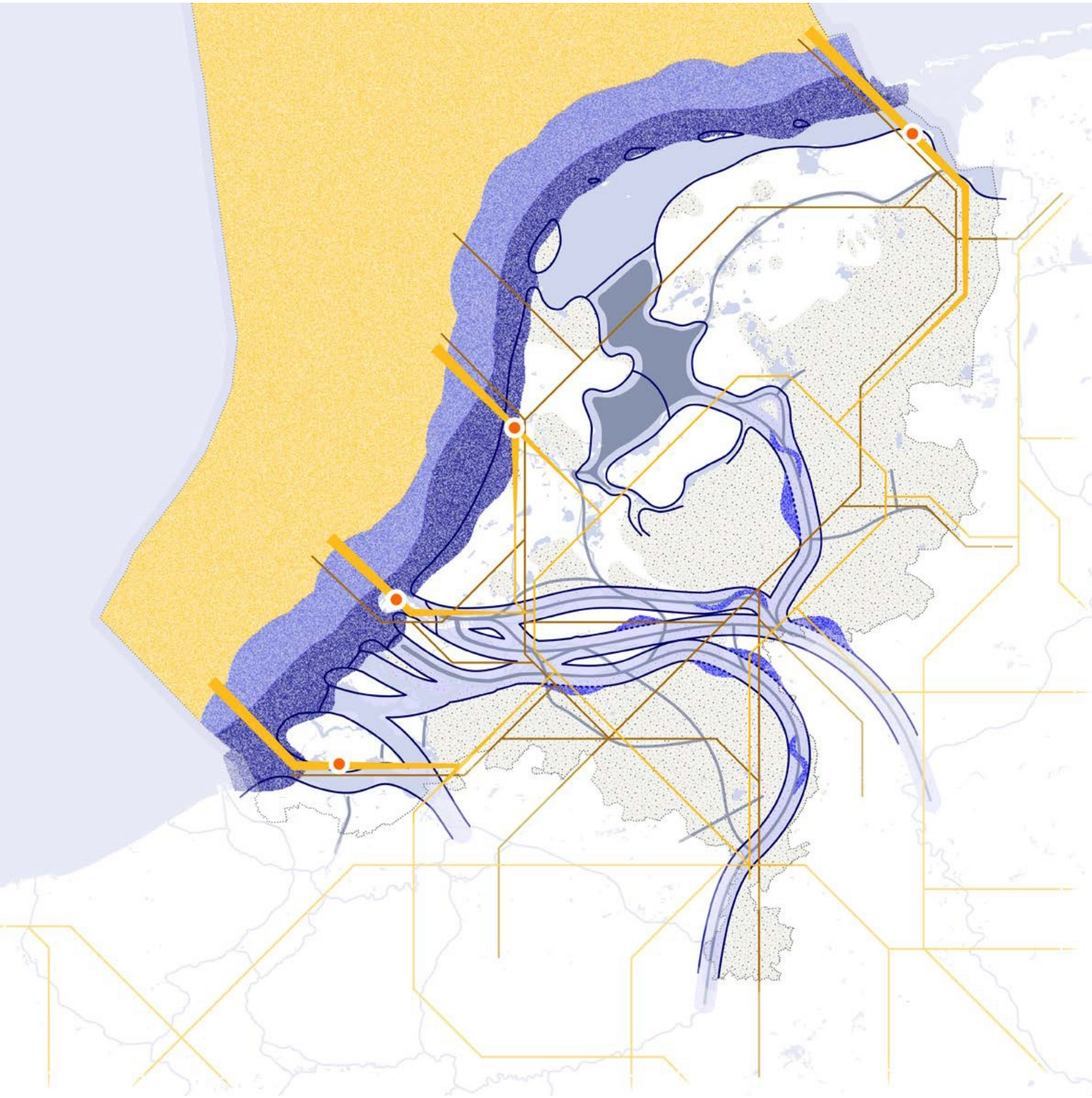
3. Energy saving, heat networks and other use of existing gas pipelines

The heat transition in the built environment calls for a strategy at regional and local level. Within this strategy, energy saving is a vital first step (also since it helps restrict the scale of interventions in the environment). For the remaining heat demand, alternatives for heating with natural gas will have to be implemented, such as residual heating, geothermal and aquathermal sources, renewable gases and all-electric solutions. The choice of alternative heat supply depends on many different aspects, including the availability of sources of heat, the heat demand, the technical building options for insulation, the costs, the possibilities for combining the heat transition with other social tasks ('smart combination') and spatial aspects.

Where heat networks are introduced, the spatial planning for those heat networks will have to be carefully considered and combined with other functions in the shallow underground environment. Municipalities are responsible for the planning, construction and phasing out of networks of cables and pipelines. Maintenance and management of the various infrastructures are in the hands of network operators and heat supply companies. Wherever possible, these activities will be combined with other social tasks, such as climate adaptation. In activities in the underground environment, the principles of the Structural Vision for the underground environment *(Structuurvisie Ondergrond)* will be taken into account. In order to ensure the availability of sufficient clean groundwater for drinking water now and in the future, the provinces will designate Additional Strategic Supplies *(ASVs - Aanvullende Strategische Voorraden)* (and the necessary protection regime). In considering the use of geothermal sources, account will also have to be taken of these ASVs on a regional scale.

The RES strategies also look into possibilities for the production of renewable energy from the underground environment (geothermal heat, soil energy), the temporary storage of energy and aquathermal energy. Wherever possible, these activities will be combined with other societal tasks, such as the construction and maintenance of sewer systems, cables and pipelines. Wherever necessary, governments will reserve space for 'backbones' between local heat networks.

From a spatial perspective, renewable heat production often offers the advantage of requiring fewer visible installations than would be needed for renewable electricity. This is for example clearly the case where there is much residual heat available from industry, and at locations where there are opportunities for geothermal heating. By using these resources via heat networks, space can be saved for the production of renewable energy (wind or solar) that would be needed for heating houses and other buildings, elsewhere. In other words, this added advantage of heat networks ties in with the consideration principle 'preventing the shifting of responsibilities'. Also for that reason, heat networks must be carefully investigated, and their benefits explicitly set off against other options.



National choices for climate adaptation and energy transition

National choices climate adaptation

Maintaining and reserving sufficient space for future water safety measures (Policy choice 1.1)

Primary flood defences (including storm surge barriers)
Maintaining the strength of primary flood defences

Coastal foundations
Maintaining the coastal foundations

Sand dredging
Reservation and search areas for sand dredging (short and long term)

River broadening
Powerful integration of dyke reinforcement and river broadening

River broadening outside the dyke River broadening inside the dyke

Sustainable and efficient management and use of freshwater (Policy choice 1.1)

Urgent areas in the main water system and regional water system

Main water system Urgent area regional water system

National choices for the energy transition

Offshore wind energy (Policy choice 1.2)
As many of the necessary wind farms as possible will be created on the North Sea, in balance with the space required for shipping, fishery, nature, aviation, defence training areas, sand dredging, oil and gas production and recreation.

Landing point offshore energy (Policy choice 1.3)
Concentration near energy-intensive industry on the coast Electricity and pipeline network (Policy choice 1.3)
Suitability for renewable energy sources and reserving the necessary space

Electricity network Pipeline network

4.2.2 Priority 2
Sustainable economic growth potential

The future economy is sustainable, circular, knowledge-intensive and internationally competitive. The result is considerable profit in terms of jobs, innovation, new business activity and employment and export opportunities. The Netherlands maintains its position in the top five most competitive countries in the world. In the future, too, the Netherlands attaches real importance to an open economy and sound ties with the economy of the surrounding countries and on a global scale. Optimum accessibility of (urban) regions and economic core areas and an attractive, healthy living environment are key establishment factors. The central focus is the development potential of the various regions in our country, with a wide variety of economic activities.

Global competition and rapid changes in the economy mean that the Dutch economy must continue to innovate and adapt to new circumstances. The spatial conditions and the physical living environment as a whole play an important role in that respect. They are able to encourage and facilitate a dynamic economy and create space for economic transitions, sustainable innovations and start-ups. Developments for a sustainable and competitive establishment climate call for an approach that is combined with other tasks, such as housebuilding, accessibility, the energy transition, digitalisation and the natural environment. A sound and internationally competitive establishment climate not only requires good connectivity and space for people and companies to work and do business, but also calls for a good quality of life in a living environment that offers residents an extensive and qualitative range of choices in terms of facilities for living, exercise, recreation, interaction and relaxation. The challenge lies in successfully combining the transition to a sustainable economy in our country with the maintenance and development of our solid international competitive position. This is vital as the foundation stone for prosperity, employment and wellbeing, in the future.

Policy choice 2.1

The character of the Dutch economy is changing, and by 2050 is entirely circular. Greenhouse gas emissions have then been reduced by 95 percent, with a 55 percent reduction as the intended intermediate target in 2030. The Netherlands occupies a solid position in the top five most competitive economies. A healthy and safe living environment and an attractive establishment climate throughout the country contribute to a sustainable capacity for growth of 2% of the Gross Domestic Product (GDP). National government invests, facilitates with knowledge and research and imposes requirements on the use of circular resources and is focused on reducing the consumption of natural resources by 50 percent, in 2030.

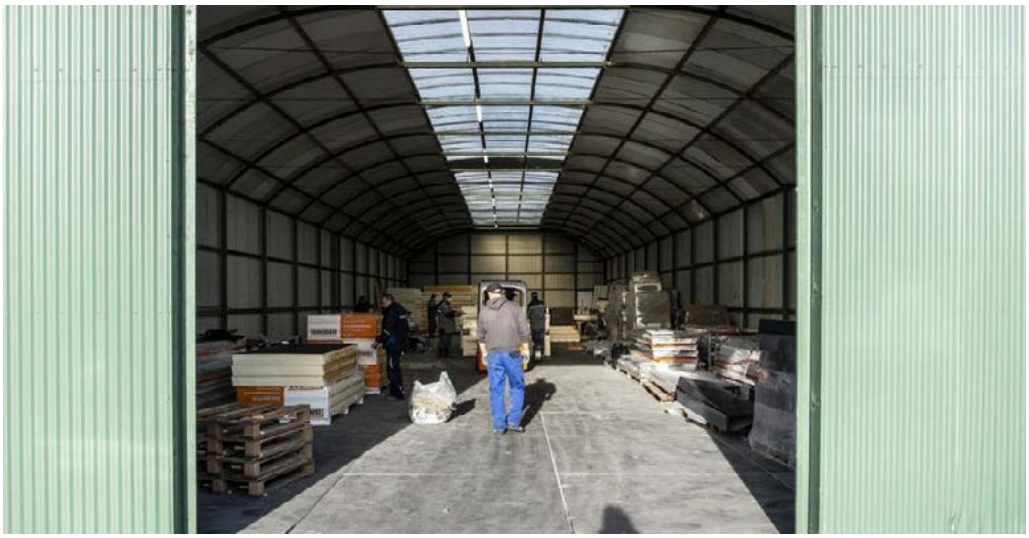
Circular economy

The growing shortages of certain raw materials and the harmful consequences of the extraction of natural resources mean that we must both reduce and improve the efficiency of the consumption of raw materials. It is essential that all natural resources remain in circulation and that ‘waste’ becomes a thing of the past. The challenge lies in designing and structuring industrial activities in a new way, so that materials, products and processes are designed that no longer cause any harmful emissions or other risks throughout their lifecycle and therefore result in negligible risks to health (known as ‘safe by design’).

Even a sustainable circular economy will cause environmental burdens and will take up space, if only due to environmental safety and the related risks that are also inherent in a circular economy. It is essential that a good balance be achieved between the advantages and disadvantages of circular production, and savings in the consumption of raw materials and energy, set against the environmental burdens of the recovery and reuse of materials.

The reuse of residues and used products will require an efficient and optimised collection process. In the circular economy chains must be shorter, where necessary subject to spatial management. Municipalities are responsible for creating the necessary conditions for space where used products and natural resources can be collected, sorted and made suitable for reuse, by business. To ensure that the necessary mass of used products is achieved while at the same time establishing a suitable number of collection locations, provinces will supervise this role and monitor the combined efforts.

Example of a collection location for products.



The Utrecht Building Hub (BouwHub): Building hubs help make building logistics more effective and reduce the length of chains. Locations of this kind require space on the outskirts of urban centres.

Use of space

The environmental and physical space available for industry, transport and distribution and other economic clusters must be handled with care. The space already in use for industrial and port functions must continue to be available for the planned transition, unless alternatives become available. As far as possible, the current use of space (for the environment) must be optimised by opting for more compact solutions, reducing the length of chains, reducing emissions at source and combining functions, on condition that safety can be guaranteed. The amount of space needed in the future is still uncertain. Wherever necessary, provincial and municipal authorities will provide additional space for the further development and transition to a sustainable, circular economy by the five energy intensive industrial clusters (Rotterdam/Moerdijk, Zeeland (Terneuzen and district), the North Sea Canal area, the Northern Netherlands (Eemshaven-Delfzijl and Emmen) and Chemelot (Geleen region, Limburg), our airports and other seaports, Brainport Eindhoven, the greenports and the digital (international) infrastructure, including data centers. A Taskforce Climate Agreement Industrial Infrastructure is currently elaborating four proposals that will help implement the energy and industry transition.

Accessibility

To extend and strengthen the leading economic position of the Netherlands, and to achieve sustainable economic growth, wherever necessary, government will provide room for development and invest in the further improvement of the national and international spatial economic network, sustainable mobility, optimum international access, and improved mobility between and within our cities. In the face of ever growing pressure on space and the infrastructure, it is crucial that our cities remain accessible, liveable and attractive, if we are to maintain our international competitive position.

Policy choice 2.2

Focus on the use of renewable energy sources and changed production processes. Sufficient physical and environmental space must be retained for ports and industrial areas. Functions must not come under threat.

Space for transition and economic functions

In particular in port areas - now and in the long term - space will be needed both for existing activities and for the energy transition at these companies and the establishment of new (circular) developments. As well as sufficient physical space, sufficient environmental space will also be needed in the form of noise zones, odour contours and risk (focus) areas. The availability of sufficient environmental capacity around these areas, and along transport routes to the hinterland is crucial for the transformation of port and industrial areas, and for that reason must at least be retained. As far as possible, urban areas must be avoided for the transport of hazardous substances to the hinterland. Wherever urban development results in a restriction of the (environmental) space available to ports and industrial areas, this space must be compensated for, elsewhere.

Smart industry

New developments such as robotisation, digitalisation and clean production processes call for a new approach. The advent of 'smart industry' means that production processes that in the past disappeared to low-wage countries are now being re-established in the Netherlands. The production and logistics chains are now organised to be so smart, effective and efficient that production in the Netherlands is viable, once again. This process is known as reshoring. For some time, both the 'old' and 'new' economy will continue to coexist, and the transition must be implemented cautiously, taking account of the various natural values, economic interests, the preservation and reinforcement of landscape quality, housing quality and environmental safety and standards. The transformation must fit into the environmental space available.

Energy-intensive industry

Renewable energy sources must be found for all energy-intensive industries, including data centers. The transition from the import, consumption and processing of fossil fuels to renewable energy will call for a transformation in our ports and industrial areas. Given the expected long period of transition, a variety of energy systems may continue to coexist for a number of decades, a fact that could raise the demand for space for the storage, transhipment, transport and consumption of both fossil and non-fossil based fuels and residues. Provincial and municipal authorities will play a key role in assisting businesses in the transition from linear to circular production processes.

Choices for ports and industrial areas

Major landfalls for renewable energy generated offshore are located close to the ports and industrial areas along our coastlines, including Eemshaven, the North Sea Canal area, Rijnmond and Vlissingen/Terneuzen. In all of these areas, additional space is actively made available for (new) energy-intensive industries. This approach makes it unnecessary to connect underground cables that make their landfall to high voltage stations sometimes far in the hinterland, thereby having to cross valuable landscapes. Another advantage is that it is precisely in these energy-intensive clusters that the transition to a sustainable circular economy is most urgent. A combination with the energy landfalls from offshore wind can accelerate that process, with additional opportunities for the use of residual substances (including heat) for the surrounding area.

It is particularly true for the ports of Rotterdam and Amsterdam that the transition relates closely to the broader task of urbanisation. The growth of production and transhipment in the port, and the more intensive use of land in the port area may clash with the local development and building plans. The functioning of the port may not be threatened as a result. Any loss of space for port functions as a result of urban transformation must be compensated for, wherever possible. To meet sustainable energy needs of industrial clusters located further inland, such as Chemical Cluster Emmen and Chemelot, consideration will also be given to alternatives in renewable electricity supply, rather than a direct connection to wind energy generated offshore. Retaining their competitive position and maintaining a level playing field are important points of focus for these clusters. In the Energy Main Structure Programme, energy hubs have been designated, the links to the national transport infrastructure is guaranteed and development plans are outlined for new routes for high-voltage grids (110 kV and higher) and national pipelines.

Given the expected worldwide growth in the transport of people and goods, it seems likely that the Netherlands, as home to Europe's largest and fourth largest port, and third largest airport, will be required to accommodate at least part of that growth. For the future of goods transport and logistics, the Cabinet will focus on the further optimisation of the use of the transport capacities already available. This means that the best available modality will be selected for transport. To facilitate this development, in designing the above average multimodal hubs along the goods corridors, the Cabinet has for example opted to encourage the establishment of water-based activity at locations with good or direct access to the water, via quayside mooring, etc.

This will necessitate a good balance between transport, economy and the environment, the urban economy and improving quality of life. The Port Policy Memorandum 2020-2030 *(Havennota 2020-2030)* includes an agenda for the future and transformation of Dutch ports in a sustainable and vital economy.

Circular building and the use of residual materials and residual heat in the construction sector

The use of residual materials by industry and residual heat by horticulture, offices and homes will impose requirements in terms of proximity between suppliers and consumers. For the construction sector (house building and civil engineering construction), the challenge lies not only in making new structures and homes nature-inclusive, climate resilient and energy neutral, but also in making the design, development, renovation, building and demolition processes circular too. As far as possible, raw materials must be kept in the construction chain through high-quality reuse, and more use must be made of renewable materials (such as timber construction, hemp, asphalt with elephant grass). The aim of these efforts is to preserve a clean, safe living environment for future generations. By ensuring that buildings, including homes and offices, are built to be as adjustable and flexible as possible (circular by design), those buildings will remain attractive for more future generations, making them suitable for other functions besides housing, now and in the future.

By focusing on new concepts in building logistics, transport and the use of space on construction sites can be considerably reduced. The ambition is that at the latest by 2050, but preferably earlier, the built environment will be circular. For building projects, the reuse of materials and of building and demolition waste will be compulsory. As we approach 2050, the requirements on Environmental Performance for Buildings *(MilieuPrestatie eis Gebouwen - MPG)* will be made increasingly strict. In selecting locations for new establishments for both providers and consumers of residual materials and residual heat, the reduction or availability of residual materials and residual heat will become a key criterion.

Future vision on the circular economy in the design study 'The Region of the Future' by the Association of Dutch Urban Architects and Planners (BNSP) and the Dutch Association for Landscape Architecture (NVTL)

Vintage Urbanisation: Circular manufacturing industry on the banks of the Schie in Delft.

The transition in Agriculture and horticulture

The Netherlands has seven greenports: Greenport Aalsmeer, Greenport Boskoop region, Greenport Duin- en Bollenstreek, Greenport Gelderland, Greenport Noord-Holland Noord, Greenport Venlo and Greenport West-Holland. These regional horticultural clusters are centres where horticultural businesses work closely together in developing an integrated approach to a variety of area-specific tasks that go beyond the limits of the horticultural sector. The objective is to bring about the essential area developments that will facilitate climate-neutral and circular horticulture, in collaboration with other sectors. Examples include the construction of regional heat networks and non-fossil based heat sources, the use and capture of CO_2 from industry, and an infrastructure for an optimum 'fresh produce' network, that ties in well with the mainport infrastructure.

However, a number of the horticultural production areas in the Netherlands are not yet equipped for the requirements of modern horticultural production. Large, easily accessible plots are needed, combined with the removable relocation or expansion of fragmented horticultural operators, with attention for the problems of solitary operators.
Modernisation of the entire area in use for horticulture also means taking account of water shortages (drought), flooding and salinisation, preventing the exhaustion of the soil and encouraging biodiversity. A regional approach is needed for joint investments for example in heat networks and water purification systems.
Greenports Nederland, the umbrella organisation for all greenports, is working alongside the provinces and the Ministry of Agriculture, Nature and Food Quality (LNV) on the sustainability and spatial (re)planning of growing areas. A Horticulture Agreement *(Tuinbouwakkoord)* was signed in 2019, to promote all these objectives.

Example of sustainable agriculture and horticulture

Growing orchids according to the 'gas-free greenhouse' principle in Ter Aar.

Policy choice 2.3

The aim is to optimise national and international accessibility for cities and core economic areas by focusing on missing links in the infrastructure and combining national infrastructure systems.

Cities and urban regions are essential to the Dutch economy, and their importance is expected to grow even further, in the future. To secure the international competitive position of the Netherlands, it is crucial that our cities and urban regions remain accessible, healthy, liveable and attractive. Proximity is extremely desirable, in the knowledge economy. Wherever necessary, clustering will be encouraged. The maps 'International links and hubs' and 'Establishment climate' in the Explanatory notes provide a picture of the international networks and (urban) regions as drivers for the Dutch economy. There are of course also vital economic drivers in specific sectors, outside the urban regions. The logistic and distribution sectors are heavily focused around our (air)ports but are also well-developed outside those areas (for example in Western Brabant, Tilburg-Waalwijk, Venlo-Venray and in Southern Flevoland). International distribution centres are developing extensively alongside the main transport arteries in the southern and eastern Netherlands. The high-tech manufacturing industry is heavily concentrated in southeast Brabant, based around Eindhoven as the centre of the Brainport area.

At the same time, however, there are also centres of (high-tech) manufacturing industry in other regions including Twente, Delft and Limburg. The agrofood industry is concentrated in Northeastern Brabant, Utrecht, Gelderland (Food Valley) and the Northern Netherlands. Major agricultural clusters (for example the greenports) are located all across the Netherlands.

Small and medium-sized enterprises are also widely spread across the country. With that in mind, national government aims to utilise the full development potential of all these regions. Assisted by civil society parties, national and regional governments are drawing up Environment Agendas for each part of the country, including an integrated future perspective and future tasks with the aim of encouraging economic and other developments in the regions.

Existing (inter)national and regional links

The Betuwe dedicated goods railway line and the A15 motorway near Herwijnen

The greatest concentration of economic activity and the related employment opportunities can be found in the area of the square formed by the urban regions in the Netherlands Urban Network (Amsterdam-Utrecht-Amersfoort-Zwolle-Arnhem/Nijmegen-Eindhoven-Brabant city ribbon-Rotterdam-The Hague). The greatest urbanisation task is also centred in this area.

The mutual proximity and excellent connections mean that the agglomeration strength of these urban regions can be further developed. The development of internal and external accessibility for this area therefore demands particular attention from national government. The numerous cross-border relationships and interactions are clear indicators that international harmonisation and consultation are vital for a number of the tasks from the NOVI. The competitive strength and attractiveness of the Netherlands, the quality of life, are closely related to the links, the cooperation and the competition with the countries and (urban) regions surrounding us.

In the competition to attract and retain internationally operating businesses, the international establishment climate and business climate of the five largest cities and the four Metropolitan Regions - Metropolitan Region Amsterdam (MRA), Metropolitan Region Rotterdam The Hague (MRDH), Metropolitan Region Utrecht (MRU) and Metropolitan Region Eindhoven (MRE) - are playing an increasingly important role. They are particularly attractive to international knowledge, labour and capital. Each of the urban regions occupies its own strong and recognisable position and is part of the joint network with other cities in the Netherlands and abroad. The Metropolitan Region Amsterdam is an international centre of business and tourist attractions, with Schiphol as its link to all continents. The Metropolitan Region Rotterdam The Hague is investing heavily in the next economy, the innovation of the port economy, new manufacturing industry, greenports and The Hague as an administrative centre and international city of peace & law. The Metropolitan Region Utrecht, with Utrecht Science Park, is a network of centres of excellence, businesses and live labs for the life sciences. High quality high-tech industry and design are characteristic for Brainport Eindhoven. For the further development of each of these areas, in the modern era, homes, mobility and a living environment offering a level of quality that appeals to an international audience are of particular importance.

The growth in the number of residents, businesses and employment opportunities in the large urban regions is leading to huge pressure in particular on the housing market and mobility in these regions. In that sense, from a spatial-economic perspective, these regions differ from other urban regions in the Netherlands, du to the urgency, complexity and scale of the tasks they face. Strengthening these cities and metropolitan regions will therefore require the strengthening of the connectivity of top locations,

improving the digital infrastructure and transformation of (inner)city areas. These tasks are further described in the Spatial Economic Development Strategy *(Ruimtelijke Economische Ontwikkelstrategie REOS)* of national government, the large cities, the affected provinces and the appropriate Economic

Boards.

Outside these areas, too, various other locations also require special attention from national government because of their strategic importance for the economic development of the Netherlands. These include the major industrial complexes such as Chemelot and Terneuzen and campuses in Groningen and Enschede with their centres of excellence and the related innovative companies, all with a solid reputation abroad.

With that in mind, national government is encouraging developments throughout the country, and is aiming to create and retain optimum national networks and Trans European Networks (TENs): the trunk road network, a high-quality rail infrastructure with good regional and international IC connections, a well-functioning network of waterways, sufficient capacity in the energy and pipeline infrastructure and a state-of-the-art data infrastructure. These tasks for housing and the living environment will be included in the regional urbanisation strategies and the Environment Agendas (see priority 3). The initiative for a public-private NOVI alliance for Spatial Investment Agendas *(Ruimtelijke Investeringsagenda's - RIAs)* will also be included (see also Chapter 5).

Strong links between economic core areas will contribute to the spatial and economic structural reinforcement of key economic locations. Public transport also has an important role to play in connecting cities and regions and facilitating traffic between home and work. In the network that makes up the hexagon Amsterdam, Zwolle, Arnhem-Nijmegen, Eindhoven, Breda and The Hague-Rotterdam, further efforts will be focused on intensifying public transport links. On the main traffic arteries between the Randstad conurbation and the North, East and South of the country, further improvement in overall quality is also important. This will demand a tailored approach for each artery in terms of frequency, stops and speed and the related strategies for the use of car, bicycle and public transport.

In less densely populated areas with a lower concentration of public transport due to insufficient passenger numbers, our focus is based on innovative, demand-based flexible mobility services, sharing concepts such as share cars, taxi services and the combination of group transport and public transport.

For international public transport, there are two levels of operation: the level for linking border regions and the rapid and sustainable linking of the Netherlands with key economic core areas in the surrounding countries. For these latter links, the European HSL network is of vital importance. Thanks to the HSL network, international rail travel will become a sustainable alternative for air travel and travel by car and truck, for medium to long-distance transport. By linking IC networks in the Netherlands to IC stations over the border, and connections to HSL networks, border regions can be more effectively linked together, thereby supporting the economic development of these areas.

Air transport

Air transport links the Netherlands to the rest of the world. International access and a leading position for Schiphol Amsterdam Airport are of vital importance both for the people of the Netherlands and for our competitive position and for the commercial activities and jobs that relate directly or indirectly to the airport. Nonetheless, the development of airports such as Schiphol, Lelystad, Rotterdam and Eindhoven clearly influence the living environment, public health and the natural environment. The efforts of the Cabinet and other stakeholders are therefore aimed at re-establishing a sound balance between nuisance, climate effect, health burdens and (spatial) restrictions that are generated by the airport on the one hand, and guaranteeing the essential international connectivity of our country, on the other. Naturally, safety remains a core value.

Growth in air transport.

Schiphol Amsterdam Airport is of huge importance to the competitiveness of the Dutch economy.

Choices for air transport

Air transport handles a huge demand, despite the restricted capacity at airports and in the airspace above Western Europe, in particular. The importance of the quality of the international network for transfer passengers at Schiphol, and direct links to Europe from regional airports have become almost self-evident. If these developments are to be sufficiently maintained, safety must be guaranteed in air transport both on the ground and in the air.

'Smart and safe', with safety as the number one priority, are the underlying principles behind the (Draft) Air Transport Memorandum *((Ontwerp) Luchtvaartnota)* published in May 2020. A smoothly functioning Schiphol Amsterdam Airport with a successful home carrier are vital to the Dutch economy and to our attractiveness as an establishment location. Aviation must also be ready for the future and must therefore guarantee less nuisance and lower emissions of pollutants. Any future development of aviation must go hand in hand with fewer negative effects on people, nature and the environment. Within these frameworks, aviation will be permitted to continue to develop.

The Air Transport Memorandum ties in with the following sustainable development goals (SDGs) adopted by the United Nations in 2015: Health (SDG 3), Energy (SDG 7), Economy (SDG 8), Infrastructure & Innovation (SDG 9), Climate (SDG 13), Biodiversity (SDG15) and Partnership (SDG 17).

Four public interests are key to the Air Transport Memorandum 2020-2050:

1. The Netherlands safe in the air and on the ground.
2. A well connected Netherlands.
3. Attractive and healthy living environment.
4. A sustainable Netherlands.

Now and in the future, the development and scale of air transport will result in considerable tension between the demands of the natural environment, sustainability, health and safety in the residential and living environment on the one hand, and the dynamic development of air transport and the economy, on the other. Housing development around Schiphol is itself a subject of discussion. The dynamic nature of the city of Amsterdam and its Metropolitan Region is considerable, as is the importance of Schiphol for the Netherlands. There must be space for housing and for flying (and the related safety and noise contours). As a consequence, there are specific zones in which building is restricted or not possible at all. The aim is to ensure that these zones are not made unnecessarily large.

In the near future, the rules concerning Schiphol will be further entrenched following amendment to the so-called Airport Traffic Decree *(Luchthavenverkeerbesluit)*. In the longer term, the sector can earn the right to grow in accordance with the principles and conditions from the Air Transport Memorandum.

Policy choice 2.4

Governments are investing in an attractive, healthy and safe living environment in cities and regions, and fostering a distinctive and attractive establishment climate.

Economic activities and those who have enjoyed higher education are concentrated in cities and urban regions. The presence of universities and universities of applied sciences plays an important role, accelerating economic dynamism, but also increasing pressure on the living environment. This applies in particular to our country's largest cities. Cities are a source of much innovation, not only among start-ups, living labs and research institutions, but also as a result of meetings at attractive locations in the city. The earning capacity of the Netherlands is however not restricted to the large cities. Throughout all regions of the country, there is a wide variety of economic activity, for which a good establishment climate is essential.

Cities and urban regions are important to our economy. This above all applies wherever there is an attractive and healthy environment, and a diversity of economic functions, culture, heritage, educational institutions and other facilities. The cities, their numbers of residents, their cultural and economic activities have grown quickly, over the past few years. This growth offers opportunities for the whole of the Netherlands. The quality of life in the cities must continue to be a point of focus, in order to reach an even higher level. Economic activities and those who have enjoyed higher education are concentrated in cities and urban regions.

Accessibility and quality of campuses

TU Delft Campus: High-quality outdoor space and excellent bicycle and public transport links contribute to the establishment climate in Delft

For the Netherlands – with its internationally appealing cities, urban networks and attractive varied landscape – there are clear opportunities for creating a distinctive establishment climate with an attractive, healthy and safe living environment. These are key establishment location factors for attracting well- educated (international) employees. With the transition towards an economy driven increasingly by knowledge and services, the quality offered by a city is growing in importance.
The size of cities (mass and density) can offer advantages due to the concentration of economic, social, political and cultural organisations in densely populated areas, but also due to the presence of universities, research institutions, facilities aimed at consumers, sector organisations and government organisations.[58] Regional access and a smoothly functioning system of home-work travel are essential for the economic performance of our cities and metropolitan regions. There is clear demand for sufficient development space for a high-quality selection of work locations. The availability of good and affordable housing and a healthy, clean, safe and attractive living environment is an increasingly important determining factor for economic success. Sustainable urban growth and innovations in mobility are essential preconditions for the growth of the urban economy.

Additional effort in the urban regions will be needed to raise the level of quality of the living environment, the natural environment and accessibility, since that in turn will foster an attractive establishment climate. Government can offer space for such initiatives and for social entrepreneurship, with a view to encouraging innovation and the further development of our sustainable knowledge economy. Increased sustainability in mobility is achieved in urban regions by improving public transport, creating more space for cyclists and pedestrians, refusing access to polluting vehicles and increasing the charge capacity of electric cars.

[58] Otto Raspe et al, *The economy of the city in global competition (De economie van de stad in de mondiale concurrentie),* The Hague 2012, see: http://www.pbl.nl/sites/default/files/ cms/publicaties/PBL-2012-essays-toekomst-van-de-stad-de-economie-van-de-stad-in-de-mondiale-concurrentie.pdf

Projects to encourage an attractive establishment climate

City Lounge: Rotterdam wants more people to live and work in the city centre, an objective that can be encouraged through more attractive outdoor space. Picture: The already completed Grote Kerkplein.

With the Brainport Eindhoven Regional Deal, the level of facilities throughout the region will receive a major boost. Partly funded by the deal, the light art festival GLOW can make an even clearer contribution to the attractiveness of the city for talent

Policy choice 2.5

Institutional, technical and operational obstacles and bottlenecks in regulations that hinder good-quality cross-border (rail, air, water and road) links must be overcome.

There is a clear need for a cross-border perspective for sustainable and vital area development, housing, employment, infrastructure (mobility) and general facilities with specific attention for dynamic development and the quality of the living environment in the border regions. A raft of healthcare, residential, employment and educational relationships have already been established with our neighbouring countries. There are also clearly visible cross-border effects in relation to water, nature and landscape. Climate adaptation is one example of a cross-border task. For urban regions in border areas, too, a coherent approach to socio-economic development will be needed. An economic future perspective in particular for young people in these regions is of essential importance. To make the optimum possible use of cross-border cooperation, agreements will have to be reached at national government level.

Industry in Terneuzen and Vlissingen enjoys closer ties with its counterparts in Western and Eastern Flanders than with the Netherlands. The North Sea Port has been established in the Canal zone, making it the first cross-border port in Europe, following the merger between the ports of Ghent and Zeeland Sea Ports. There is much cross-border home-work travel in the Northern Netherlands, between the Groningen region and the Federal State of Lower Saxony, as well as close ties with Bremen and Hamburg. There is also intensive cross-border (home-work) travel in the Eastern Netherlands. The A1, A12 and A15 corridor link both the Randstad conurbation and the regions that make up the Eastern Netherlands with the German Federal State of North Rhine-Westphalia and Lower Saxony. The economy of Zuid-Limburg benefits from improved cooperation in the international city diamond based around Heerlen - Maastricht – Aachen – Hasselt – Liège. The cross-border exchange of labour potential is often inhibited by differences in certificates, regulations and fiscal systems. Cross-border public transport for home-work travel also faces numerous challenges. For that reason, Environmental Strategies (see chapter 5) are often developed in consultation with at least the Flemish and Walloon Districts of Belgium, and the German Federal States North Rhine-Westphalia and Lower Saxony.

Policy choice 2.6

In cooperation with other levels of government, the network operators and the private sector, national government is creating space for the digitalisation of the economy in the roll-out of new networks and the selective growth of data centers.

The digitisation of our society is improving access to information, accelerating communication and information exchange and offering new opportunities for the organisation and development of employment, trade, education, recreation, mobility, healthcare, agriculture, energy and industry. The Netherlands is the digital gateway to Europe and a vital data hub. The Cabinet has set itself the ambition, as the Netherlands, of being digital frontrunner in Europe[59] with digitalisation, research, experimentation and the application of new technology. This will help strengthen the earning capacity of the Netherlands, by improving the focus of technological developments and facilitating the economic and social opportunities from digitalisation.

Digital infrastructure is an essential precondition for the Dutch earning model and establishment climate. The essence lies in the smooth functioning of the (future) proof digital infrastructure (including undersea cables), mobile networks and data centers. The availability of both fixed and mobile highspeed Internet is considerable in the Netherlands, and the growth of digitalisation is imposing ever more stringent requirements on the digital infrastructure. It is essential that the parameters for that digital infrastructure are in good working order. International data cables enable Internet traffic and the exchange of international data traffic. They represent the main transport arteries for the digital economy. Landing points for new international data cables via the North Sea will continue to be facilitated, and further elaborated to guarantee international connectivity.

Establishment of data centers

Data centers are another integral part of the infrastructure that will facilitate the further digitalisation of the economy and society as a whole. The day-to-day life of both businesses and consumers is hallmarked by the processing of a growing volume of data. At the same time, more and more businesses are opting to house their computer servers with external parties (colocation data centers) for reasons of efficiency. In that sense, data centers are essential for the digitalisation of Dutch society and the economy.

The Netherlands is an attractive country for data centers. This applies in particular to the area around the Amsterdam Internet Exchange (AMS-IX) which acts as one of the largest Internet hubs in Europe (alongside Frankfurt, Paris and London). This area represents what is known as an ecosystem with hyperconnectivity, where data can be processed at high speed. That connectivity will be further extended through the clustering of data centers. We are also seeing major tech companies building large data centers or hyperscales for their Internet activities. In terms of establishment location, data centers of this type are less dependent on hyperconnectivity (and hence proximity to the AMS-IX).

Nonetheless, it is becoming increasingly difficult to sustainably facilitate data centers. The space taken up by data centers is growing, and given their high power consumption, they place considerable demands on the energy infrastructure. The necessary capacity cannot be provided everywhere. The realisation is gradually growing in the Netherlands that choices must be made with a focus on selective growth. The establishment of new data center (clusters) will call for careful spatial consideration and harmonisation with other interests in the living environment. Local levels of government bear primary responsibility for regional establishment policy of businesses and hence also data centers. These lower governments can include the establishment of data centers in their integrated plans, Regional Energy Strategy and the Transition Vision on Heat. This too will require careful consultation with the network operators and an overarching consideration of all other energy-demanding functions, the generation of electricity and spatial planning for transport links.

[59] Ministry of Economic Affairs and Climate Policy, *Dutch digitalisation strategy,* The Hague, 2018.

Provinces and municipalities are seeing the emergence of bottlenecks in the establishment of data centers and in response are developing new policy. Within the Metropolitan Region Amsterdam, where demand for data centers is greatest, these levels of government are already working together to successfully manage growth while still satisfying the ambitions related to digitalisation. National government is also involved on the basis of the Spatial Strategy for Data Centers, which has been drawn up in consultation with a number of municipalities, provinces, Economic Boards and the private sector. Broadly speaking, according to the Spatial Strategy for Data Centers[60], data centers can be established where:

1. energy demand can be met in a sustainable manner via existing or future energy networks. This in turn calls for a careful match between supply and demand;
2. the delivery of residual heat to heat networks is possible, preferably to urban areas (pursuant to the Heating Act 2.0 for the utilisation of residual heat, the collection right will be introduced for heating companies to collect residual heat at offloading cost), and
3. the requirements imposed by market parties on digital connectivity can be satisfied.

The efforts of national government are aimed at investigating the possibilities for facilitating colocation in the MRA for those data centers for which hyperconnectivity is an essential precondition for establishment. For these colocation data centers, regional assessment of developments towards Almere and Zuid-Holland appear the next logical steps. The establishment of hyperscale data centers is possible at locations where there is large-scale availability of (renewable) electricity, where connection to the electricity grid can be ensured and where space is less in short supply. The preference is for establishment in the periphery of the Netherlands, as is the case for existing locations in Eemshaven and Middenmeer.

In line with and as the next step in the Spatial Strategy for Data Centres, via the Environment Agendas, national government aims to join other levels of government in taking steps and reaching agreements on further achieving the selective growth of data centers, whereby the growth of data centers will be considered in relation to the Dutch digitalisation strategy.[61] If the accommodation of (a cluster of) data centers calls for the planning of the national energy infrastructure, this will be included in the Energy Main Structure Programme, on condition it matches among others the requirements for energy system efficiency, and is in line with the Spatial Strategy for Data Centers, and of course other interests in the living environment.

Policy choice 2.7

Locations of new offices, business parks and large wholesale and retail outlets must be matched to the traffic and transport network, appropriately geared to demand from businesses, and should contribute to the strengthening of the economic vitality, quality and attractiveness of our cities and the country as a whole.

Shops

As a consequence of autonomous developments such as population shrinkage, population ageing, technological developments and certainly also changing consumer preferences, many shopping areas are under pressure. The effects of the COVID-19 pandemic on the buying and mobility behaviour of consumers remain uncertain, but it seems possible that the use of the Internet for the purchase of goods will receive an additional boost, as a consequence. The most obvious changes are taking place in medium-sized towns and cities. In the past, these towns fulfilled a centre function within their catchment area but that status is changing. In the end, we expect only a limited number of cities (according to estimates around 20) to retain their central function at the same level. The other cities will face growing numbers of vacant properties. This will not only have huge consequences for the retail trade but also for the quality of life in these Dutch towns and cities. To help guarantee quality of life now and for the future, and to ensure that these cities remain attractive to visitors and local residents, they must face up to a complex transformation task. In physical terms, it is essential that the remaining core shopping areas be kept compact and that new functions be identified for those buildings that fall vacant. By opting for multifunctionality, inner cities are capable of responding flexibly to future developments.

Offices and business parks

[60] Ministry of the Interior and Kingdom Relations, *Spatial Strategy for data centers: Roadmap 2030 for the growth of data centers in Netherlands*, The Hague, 2019.

[61] https://www.rijksoverheid.nl/documenten/rapporten/2020/06/25/nederlandse-digitaliseringsstrategie-2020

At various locations there is still evidence of high levels of low occupancy in the office market. At the same time, certain businesses and institutions are unable to find suitable accommodation. There are clear shortfalls at popular locations. There is also a lack of modern buildings that meet current requirements. In a number of provinces, supply far outweighs demand and/or fails to meet quality requirements. Business parks are often outdated and poorly connected to the main road network.
The establishment of a restructuring fund, itself from the revenue from the development of new business parks, can help encourage the redevelopment of outdated business parks. The clustering of commercial activities at locations close to infrastructure hubs can help promote the economic vitality of a region. This also calls for greater attention for the integration of business parks in the landscape. As far as possible, the unbridled development of large-scale storage and distribution centres of uniform appearance in ribbons along trunk roads must be avoided. Clustering, both from the point of view of successful integration of business parks in the landscape and in respect of the road infrastructure, utilisation of roof areas for the installation of solar panels and the existing electricity network are the underlying principles for the development of new parks.

Clustering of businesses.

The clustering of businesses around hubs can improve the economic vitality of the region.

Shortages and surpluses of office space, shops and business parks can for the most part be prevented. Carefully estimating the demands on space and the level of supply at regional level are of key importance for the efficient use of space[62]. In the framework of the Urbanisation and Housing Programme, all levels of government will jointly adopt policy principles for determining demand. In determining the demand for new offices, shops and business parks, the transformation opportunities for existing sites will always be considered. The policy serves a national interest but requires implementation at local level. In order to consider area-specific tasks, including economic activities, in a coherent manner with regard to other tasks, and where necessary for jointly ensuring the optimum use of space, the various levels of government are drawing up Environment Agendas. The elaboration of area-specific tasks will be carried out in consultation with the private sector, employees' associations, all levels of government, civil society organisations and local residents. The frameworks of the national interests of national government, as laid down in the NOVI, are the central starting point. One key area for attention in the Environment Agendas is whether additional agreements are actually required, or whether solutions can be found within already existing programmes. As a consequence, no additional space will be required, while other areas can be transformed, for example by ending certain business activities (take for example the transhipment of coal).

[62] BCI/EIB, *Economic development and future spatial requirement for business sectors in the Netherlands* , 2019.

Choices for the integration of logistic functions

Our aim is to encourage active clustering of (large-scale) logistic functions at logistic hubs located alongside (inter)national corridors. This will reduce the influence of widespread locations on the landscape and additional mobility requirements, and will reinforce the logistic system and our economy. In turn this means developing further concentrations of logistic functions and supraregional logistic activities. In addition, at regional level, activities will be concentrated to meet at the demand for space from regional parties. National and regional government will reach agreement on new locations, in conjunction with the Environment Agendas, because this activity calls for a coherent approach or further elaboration in conjunction with other tasks (see Chapter 5).

We have opted for the following approach:

- First and foremost, for every potential establishment, there must be demonstrable demand. Provinces will assess the demand for business parks. National government and the provinces will together lay down the principles for the assessment of demand;
- If there is demonstrated demand, priority must be given to establishment at existing business parks, if necessary following restructuring;
- If that is not viable, depending on the required size - establishment must take place within one of the (limited) number of predesignated national and supraregional clusters.

Logistic clusters must have multimodal access for goods and persons.
Buildings must also be designed to be circular so that in the event of their falling vacant or at the end of their lifecycle, new functions can be found for the space. Every cluster must satisfy the requirement of optimum integration in the landscape, so that higher-quality working landscapes are created. The establishment of these clusters will call for more active control by government. The national and provincial authorities are therefore developing a coordinated strategy to restrict the influence on landscape, environmental quality and mobility/the infrastructure. Together they will identify the suitable locations and reach agreements in the Environment Agendas.

Thanks to their large-scale character, warehouses and distribution centres offer excellent possibilities for rooftop solar panels and can make a major contribution to generating renewable energy. Warehouses and distribution centres are also suitable for green-blue roofs capable of retaining water.
Via new regulations, municipalities will be given powers to make the sustainable use of roofs (for solar panels and/or water capture) compulsory, at new centres.
We are investigating which legal powers municipalities need to be given to enable them to impose the sustainable use of roofs, via a tailor-made approach in individual cases, if necessary also on existing buildings.

Policy choice 2.8

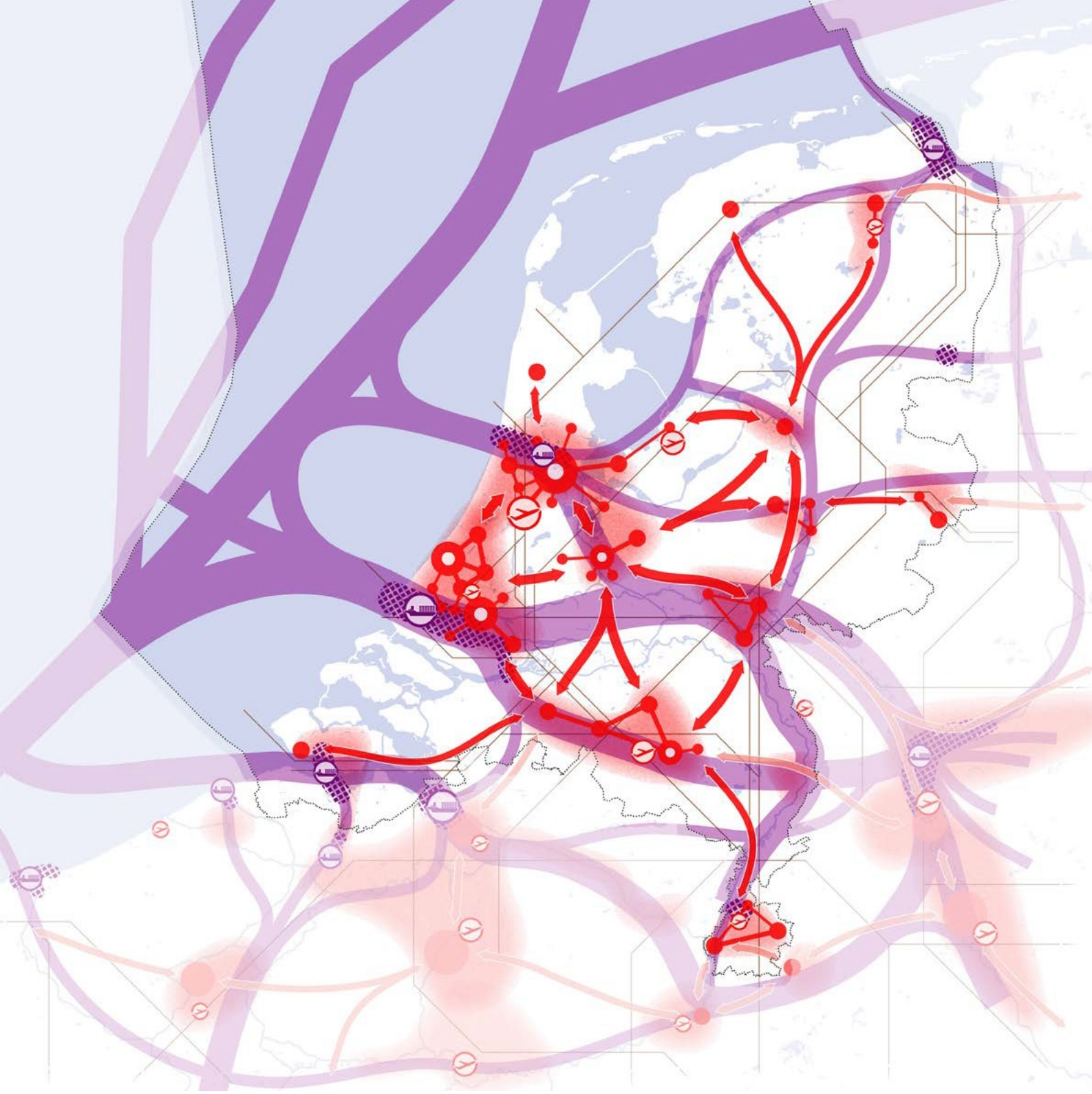
New tourist attractions should preferably be established outside existing top locations and close to public transport or existing connections to the main road network.
To establish a good balance between the pressure from tourism and the coping capacity of the living environment, municipalities and provinces are preparing a tourist development strategy. Wherever necessary and possible, national government will support the provinces and municipalities in spreading the pressure from tourism, to establish a balance between the economy and the living environment.

Tourism and recreation are increasingly important for the economy of the Netherlands, but are also responsible for considerable pressure on our capital city and a number of other (historical and coastal) locations, nature areas and their local infrastructure. To ensure that tourism and recreation develop successfully, and to reduce the pressure on our capital city, tourist locations must be distributed across the country by means of targeted marketing and cooperation between regional and local governments. To respond to the growing pressure from recreational and tourist visitors, it is essential that the public space be structured attractively, in a manner that is also clear to visitors, with optimum road and public transport connections, good enforcement of law and order and – wherever possible – the national distribution of tourist attractions. In this way, tourism can deliver a positive contribution to the economic development of various regions in the Netherlands and contribute to a new, positive dynamism with the related employment opportunities. On the other hand, all improvements in the spatial layout and quality of the Netherlands will contribute to new tourist opportunities.

In the tourism development strategy, municipalities and provinces can record their choices on the desired development of tourism and of the accompanying policy measures to tie in with the regional tasks and needs. This will of course require harmonisation with nature policy, (sustainable) mobility and the built environment, and cultural policy.
This strategy will also be integrated in the Environment Agendas. To ensure management of the development of tourism, the starting point is support from the living environment and society.

The spread of tourism.

Rotterdam is a successful cultural destination and is becoming increasingly popular among tourists.



National choices for sustainable economic growth potential

Ports and industrial areas (Policy choice 2.2)
Focus on the use of renewable energy sources and changing production processes

Cities and economic core areas (Policy choice 2.3)
Focus on optimum (inter)national access

Focus on optimum (inter)national access Transport corridor

Seaport

Cities and regions (Policy choice 2.4)
Governments are investing in an attractive, healthy and safe living environment and encourage a diverse an attractive establishment climate

Cross-border links (Policy choice 2.5)
Solving institutional, technical-operational obstacles and bottlenecks in regulations

Netherlands Urban Network (see elaboration in priority Strong and healthy cities and regions)

Airport
Strengthening network quality

Energy network (pipelines and high-voltage network >220 kW on shore)

4.2.3 Priority 3
Strong and healthy cities and regions

The whole of the Netherlands is taking part. We have opted for sustainable cities and regions that make an optimum contribution to the strength of the Netherlands as a whole and that offer a healthy and climate-resilient environment for everyone who lives, works and spends time there. These major tasks are so intertwined that in every city and region, they require a more integrated approach and a quality boost in a number of aspects of the urban living environment. The spatial dynamism varies from city to city and region to region.
Processes of growth, shrinkage and renewal or transformation are taking place in every city and every region, but at different paces and to different extents.

Policy choice 3.1
We are strengthening the Netherlands Urban Network by supporting the development of urban areas and providing solid internal and external links. The Netherlands Urban Network is expanding, whereby the extent of urbanisation is linked to the expansion and development of the public transport infrastructure. Urbanisation is taking place in regions where there is sufficient demand, while the large open spaces between cities can retain their green character.

On a national scale, the Dutch urban regions form a polycentric network of well-linked urban areas separated by open spaces. It is vital that the basic form of this structure and the open spaces in the network, such as the Green Heart, are retained. As far as possible, living and working will be developed in close proximity in those regions where there is demand. The Netherlands Urban Network is reproduced in diagrammatic form on the map 'National choice for sustainable economic growth potential' and the map 'National choices for strong and healthy cities and regions'.

Good links between the urban regions are necessary in order to fully utilise the strength of the network as a whole. At present, the process of urbanisation in terms of scope and density is concentrated in the urban regions in the broad mid section of the Netherlands (the area of the hexagon demarcated by Amsterdam, Utrecht, Zwolle, Arnhem/ Nijmegen, Eindhoven, Breda, Rotterdam/The Hague). The urban regions in this area form the current core of the Netherlands Urban Network. Their close proximity and the excellent links in this area reflect the agglomeration capacity of the Netherlands. At the same time, the number of households is growing, and demand for housing is gradually rising in this area, too. The branches extending to Groningen, Hengelo/Enschede and Maastricht, Leeuwarden and Middelburg will reinforce the structure of the Netherlands as a compact whole. National government is focusing on the further development of the Netherlands Urban Network, in combination with the development of (above all the public transport) infrastructure. By linking Groningen, Hengelo/Enschede and Maastricht to the IC network of the surrounding countries, these regions will also be better integrated in further spatial and economic development. The long-term aim is to improve links to all parts of the country. Robust links between the cities and an improved public transport system as outlined in the Future Picture for Public Transport 2040[63], will result in shorter travel times between the urban regions. As a result, cohesion in this area will be emphasised and the spatial economic development of the core urban areas expanded. This also ties in with the aim of making the best possible use of the potential and specific qualities of all regions to contribute to the development of the Netherlands as a whole.

[63] Ministry of Infrastructure and Water Management, *Contours of Future Policy for Public Transport 2040*, Parliamentary Papers 23645, no. 685, The Hague 2019.

Policy choice 3.2

Our cities are developing sustainably thanks to a coherent approach to housing, working, mobility, healthcare, security and quality of the living environment. National government employs an integrated urbanisation strategy, and is an active player in formulating a regional urbanisation strategy.

Strength through quality of life

Three quarters of the Dutch population lives and works in urban areas, and our cities are essential to our economy. It is vital that our cities are healthy, attractive, safe and clean places in which to live and work, that they offer good-quality affordable housing and that residential and working locations are easily accessible. The relatively limited size of Dutch cities can be an advantage. Urban areas and nature are relatively nearby, and job opportunities and facilities are available or within easy reach. These features contribute to the quality of life in the broadest sense of the word. The presence of green and water in our cities is also important for the quality of urban living and the attractiveness of city life. It offers opportunities for recreation and healthy exercise and assists in mitigating the consequences of climate change. Built cultural heritage such as monumental buildings, village and urban conservation areas and cultural heritage landscapes play an important role in the physical living environment, both in cities and the surrounding regions. Heritage reflects the history of the Netherlands, thereby helping to clarify the identity of an area. In processes of transformation, it can be a carrier and source of inspiration for urban development.

Choices for urbanisation: integrated urbanisation strategy for development and quality improvement.

Step 1. Quality requirements and ambitions from the surrounding area

Draw up an integrated picture of existing and expected quality of the living environment in and around our cities, and determine the ambitions for the quality of the area and the health of the residents. The goal is to achieve a good-quality living environment in the broadest sense of the word. That certainly includes air quality, noise, soil, environmental safety, cultural heritage, nature and biodiversity, climate resilience (for example against heat stress), water (capture) and landscape quality of the surrounding countryside. Area biographies provide an insight into the existing characteristics and identity of the areas.

Step 2. Spatial-physical needs

Then chart out the demand for housing, offices, business parks, logistic functions, shops, urban (recreational) green, cultural and other facilities and the accessibility requirements for each of those functions, in both quantity and quality, including any particular obstacles in these fields. Take account of trends and developments that influence the physical living environment, such as digitalisation.

Stap 3. Opportunities for urbanisation

In assessing the opportunities for accommodating these needs, focus specific attention on the expected effects on the environmental quality and the realisation of the quality ambitions (both for new areas to be developed and for existing built-up and undeveloped areas). Also take account of indirect effects. In reaching decisions on new spatial developments, identify the consequences for the mobility system and how these can be compensated.
In the considerations, also include the possibilities for contributing to the energy transition.

In respect of possible measures for quality improvement, directly consider the possibilities for accommodating existing needs. Implementing an overall plan for greening up cities, which in (larger) cities will be an integral part of the urbanisation strategy, requires physical space and contributes to the environmental quality and opportunities for recreation for local residents.

Any sustainable urban development will require space and measures for living and working, for accessibility, climate adaptation, renewable energy, water safety, more nature and a healthy living environment (safety, noise, air quality, soil and a layout that encourages healthy behaviour). On top of all these, it requires the development of an urban environment that is perceived by its residents as attractive and valuable.

Broad-based tailor-made consideration

Urbanisation demands carefully and area-specific consideration based on a broad approach. The possibilities for urbanisation and the related tasks differ from location to location. In many cases, the essence is to create opportunities for new developments and to improve the quality of the living environment. In areas where there is strong growth, the efforts will be more focused on facilitating new developments in which new spatial developments also generate additional quality for the city and region, while at the same time demanding additional attention for the quality of the existing built environment as a fundamental precondition for success or for avoiding unfavourable side effects. In other areas, where there is less growth, the focus will be more on improving quality, for example by concentrating more heavily on green in and around the city. Tasks that relate to the decline of shopping facilities in (inner) cities and in respect of business parks, as described under the priority Sustainable economic growth potential, are particularly relevant in urban areas. In many cases, a series of different development tasks are concurrent, and the challenge lies in finding sufficient locations to house them all. That in turn calls for an integrated approach to thought and action, that exceeds the interests of a specific sector. For that reason, national government is operating an integrated urbanisation strategy.

The housing and labour markets and day-to-day movement patterns of the Dutch people exceed the scale of municipal boundaries, indicating that urbanisation is primarily a regional issue (and partly even exceeds regional scale). The formulation of an integrated regional urbanisation strategy calls for sound involvement and cooperation by all administrative partners in the region. Involving individual citizens, entrepreneurs and other stakeholders in advance will prevent the desired developments eventually proving impossible or actually undesirable. If investments by multiple parties, including non-government players, are needed to bring about developments in the physical living environment, it can be valuable to prepare a Regional Investment Agenda according to which the necessary investments can be coordinated and anchored in agreements. In this way, a Regional Investment Agenda can be a valuable tool for implementing elements of the Environment Agenda for urbanisation (and potentially a building block for an Environment Agenda that still has to be drawn up). In five regions[64] , the various stakeholders are involved in a trial to draw up a Regional Investment Agenda aimed at further developing and refining the nature of the policy tool. Developments in the region can also have negative effects on environmental quality outside the region. In that situation, the affected region must also be consulted to mitigate or compensate for those effects. One example is the nitrogen problem as a result of which close to Natura 2000 areas it may be necessary to limit the negative effects of a residential development via a regional area-specific approach. In certain regions the national interests (for example for housing, economy, accessibility, digitalisation or quality of the living environment) play such a role, also with involvement by national government itself, that that same national government participates actively in implementing the regional urbanisation strategy and/or can be a party in drawing up a Regional Investment Agenda.

[64] Regions Noord-Holland above the North Sea Canal, Breda-Tilburg, Arnhem-Nijmegen, Eindhoven, Haaglanden.

Future visions on integrated urbanisation in the design study 'The city of the future' by the Dutch Architects Association (*Bond Nederlandse Architecten BNA*).

Haven-Stad Amsterdam.

Central Innovation District The Hague.

Policy choice 3.3

Urbanisation is concentrated in the region while any additional new housing and working locations will be carefully integrated in a manner that makes efficient use of space and mobility. The housing stock in the region matches the demand for numbers and types of housing, residential environments and price class.

Pressure on the housing market

It is essential that people who wish to live in urban regions are also able to live in locations where there are plenty of jobs. In various regions, there are already considerable housing shortages. The efforts to reduce existing housing shortages demonstrate clearly that satisfying the demand for housing in a large number of regions will be a huge challenge, that requires joint efforts on the part of national, provincial and municipal authorities. To ensure smooth cooperation between the various levels of government, it is essential that the affected administrative organisations reach agreements on the approach to be followed and the principles to be employed. This refers to the principles for identifying housing demand, but also the scale of and continuity in the development of planned housing stock, dealing with temporary fluctuations in demand and uncertainties surrounding demand in the longer term. For those regions facing the largest task, the starting principle is a planned capacity of 130 percent of housing demand through to 2030. It is up to the provinces to ensure that municipalities provide sufficient planning capacity at regional level to satisfy the demand for housing on the basis of the formulated principles and to guarantee consistency with the regional efforts in related policy fields such as accessibility. To manage this process, among others agreements will be needed about information exchange for programming and monitoring of plan preparation processes and housing production. Sound cooperation at regional level can considerably reduce the burden represented by the provincial task. In the framework of the interadministrative Urbanisation and Housing Programme, this joint approach will be further developed.

Part of the response to potentially diverging demands in the short and longer term and the uncertainty about longer-term demand may lie in a larger stock of temporary and flexible housing (which can be divided up or re-merged to form smaller or larger homes). To respond to the dynamism on the housing market, homes will also have to be made available for temporary occupation.

Differentiation in the residential environments

The Krasse Knarrenhof in Zwolle is an example of a residential project aimed at self-sufficiency.

The heart of the building task is to rapidly achieve sufficient numbers to match the qualitative needs now and in the future (also in the face of an ageing population), and qualitative restructuring of existing housing stock, wherever necessary. This must go hand in hand with the affordability of both the investment by government and of the homes to be created. In this Cabinet period, the Cabinet has delivered an additional boost to housing production by providing additional financial resources for a number of municipalities, and reducing the landlord levy for the housing associations.

Space and mobility: efficient urbanisation

To satisfy the housing need and the demand for commercial space, in many regions large numbers of new housing and/or working locations will have to be added to existing urban areas. As far as possible, housing and employment opportunities will be developed in close proximity, with the aim of establishing a concentrated urban development that is also efficient from the point of view of use of space and mobility. Any development that helps preserve urban areas while creating proximity will contribute to the efficiency of the Dutch economy and the sustainability of Dutch society. Within urban regions, residential areas and areas of economic activity are not always equally distributed across the region. In regions with areas with a heavy geographical focus on employment, when developing new residential areas, it is above all desirable to consider suitable locations close to these focus areas (and as far as possible avoiding locations on the other side of spatial barriers, such as large waters). However, there are other considerations too. Not all areas in the region are suitable in every respect, and many will not satisfy the demand; in many urban regions, for example there is above all demand for housing in the central city and less in the outlying towns and villages.

Example of station development.

High-density development around stations makes it possible to increase the range of public transport services on offer.

Viewed from an international perspective, Dutch cities demonstrate relatively low density[65]. Changes in the economy such as economies of scale and growth of the service industry mean that a proportion of business parks in urban areas are losing their functional value. In many cities, new concentrated developments with high-density housing and high-density employment opportunities are being planned at these locations. The availability of business parks, additional focus on green in the city and a sustainable mobility system with less space for private cars in well-designed high-density urban areas will offer Dutch cities further opportunities for increasing density, over the coming decades. At the same time, it is clear that increased density also means extra pressure on the city, which in turn will demand extra attention for the quality of life in the city. From the point of view of sustainability and the economy, inner-city building clearly enjoys a preference, but it is not the intention that high-density development should detract from the qualities of the city and the urban region as a whole. Such a development could mean that cities become less attractive as a healthy and appealing place to live and work. Nonetheless, there are no general standards or criteria about when increased density can no longer be combined with quality improvement. Cities simply differ too greatly in terms of size, spatial opportunities for redevelopment and expansion, and the needs and priorities of society. Moreover, over time, new design concepts, technological developments and changes in financial possibilities can create new opportunities. Ensuring that increased urban density and improved quality of public space and urban green go hand in hand represents a major design challenge. We can accommodate more people in our urban areas, while at the same time increasing the quality of the environment.

The greatest opportunities for high-density building are offered in inner cities and close to public transport hubs. We wish to make use of those possibilities for types of housing and working environments that are appropriate for such concentrated building developments. Housing types (for example ground-based housing) and working environments that demand more space will have to be offered room elsewhere in the urban area, but preferably within the existing built-up zone. Possible exceptions are business parks for businesses that take up large amounts of space but require little passenger transport. These can best be created outside existing built-up areas, elsewhere in the urban region, at locations with multimodal access to the main infrastructure for road and rail transport and/or transport by water.

[65] OECD, *Land Use Policies for Green Growth*, November 2016

High-density projects

Holland Park: Housing diversity in a high-density development close to the Diemen Zuid station.

Wonderwoods: City centre housing in a high-density development close to Utrecht Central station.

Sluisbuurt Amsterdam: New residential district with a mix of functions and high-rise urban residential environment.

Groene Kaap: Varied selection of rented accommodation on the densely developed Pols van Katendrecht in Rotterdam.

Meeting the housing demand

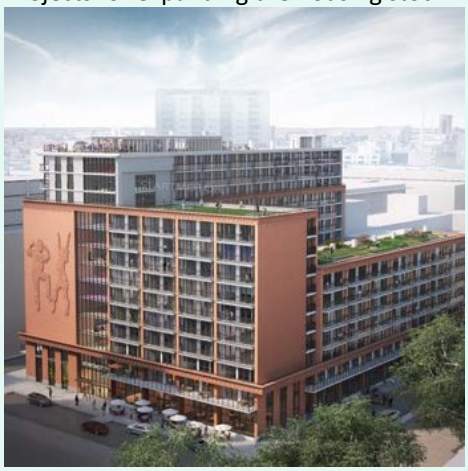
Government (in urban regions) is faced with the task of delivering housing stock that matches the housing demand in the region while offering sufficient differentiation in terms of type, residential environment and price class (with explicit attention for affordable housing and the middle segment). Their joint task is to provide housing for all target groups (including the elderly and families) based on agreements on the distribution of social housing.

Living in urban areas is currently fashionable and house prices in urban areas are higher. Further migration into cities will result in further price rises. Improving the quality of the urban living environment also adds extra value to city life and urban real estate, and not only generates increased prosperity but in principle also means higher prices.

Government is therefore being called upon to ensure that housing in the city remains affordable, as well as retaining social cohesion in the city, in particular in those districts where investments are also being made in essential improvements to the quality of life. By introducing legislation and regulations, national government offers policy support to efforts aimed at the balanced development of a housing market in which the availability of affordable housing in urban regions is a basic principle (while preventing speculation on further price rises as a result of housing shortages).

Excessive spatial segregation can harm social cohesion in the cities. The combination of affordable, mid-range and expensive houses in a single district, which in the past was a clear goal, has proven to be difficult to achieve and ineffective in encouraging social contact. However, the emergence of entire parts of the city that offer only neighbourhoods with cheap or only expensive houses is also not good for social cohesion in the city or in society as a whole, and can lead to problems of crime and nuisance.
A variety of different types of residential districts and smart spatial planning at locations where large numbers of people congregate can help to preserve social cohesion and prevent a downward spiral. It is essential in all residential areas to invest in active citizenship at grassroots level, and to maintain or create space for initiatives and (social) entrepreneurship in mixed residential and work areas. Such developments will make the city attractive for people with different lifestyles and from different cultural backgrounds. In urban regions we are encouraging social cohesion by ensuring sufficient variation at district/neighbourhood level in terms of housing types and price classes, the development of mixed residential and work environments and safe, accessible and attractive public space, designed along healthy principles. For city dwellers themselves, the development of more communal forms of housing could contribute to a living environment with better social ties. Legislative and regulatory obstacles to a role for housing associations in developing complexes of this kind will be removed, as far as possible. Municipal authorities will also be called upon to provide space for citizens housing initiatives.

Projects for expanding the housing stock



The Startmotor in Rotterdam-Zuid is an initiative that offers young people a safe arrival point in the city from which to start their housing career. It serves as a community where young people live together with shared facilities, and that offers assistance and support where necessary.

The Antillenstraat in Groningen: Urban housing by the waterside, in social rented accommodation.

Over the coming period, the vast majority of growth in the number of households will result from a rise in the number of households in the age category 70+, and in the period through to 2050 the increase will consist (almost entirely) of 70+ households. Building for the future calls for age-aware house building and urban development geared more towards the residential needs of the elderly.

This relates both to the quality of the dwelling (possibly smaller, low-threshold, facilities for healthcare and remote healthcare) and the location of the homes (near to shops, public transport, meeting places) and the creation of an environment with sufficient social cohesion (close to other elderly people, but also families and children). At the end of their period of employment, a proportion of elderly people will deliberately opt for a new residential and living environment (for example a concentrated urban location with plenty of facilities, more rural with more peace and a green environment, or close to their children) but a large proportion retains ties to their own residential district and social environment, and wish to remain living there. To arrive at housing stock that is also attractive to the elderly, housing suitable for them will also have to be created in existing residential areas. In addition, for those elderly people who wish to move to a quieter environment, existing buildings that become available outside urban areas can also be transformed into housing complexes for the elderly.

Increased housing stock for the elderly will also create opportunities for greater transition within and improved take-up of the housing stock. Many elderly people live alone in single-family homes, and would be happy to move into smaller accommodation. However, the availability of suitable housing stock alone is not sufficient to exploit those opportunities; in addition, both national government and municipal authorities will have to take additional measures to remove financial obstacles (including rent averaging) and practical obstacles (for example physically moving home) as far as possible.

Preferred order for urbanisation

In implementing the integrated urbanisation strategies on a regional scale, national government is aiming for the following preferred order for the development of new residential and working locations.

Choices for urbanisation: preferred order

- Based on the nationally agreed principles, local government authorities (and as necessary national government) will determine housing demand for the region for the shorter and longer term (in terms of affordability, residential environments and housing types). The housing needs of the municipalities and the regions will tie in with the provincial needs (and the provincial needs with the national needs). The same applies for the space required for business parks and offices (see Policy choice 2.7).

- Sufficient regional planning capacity will be made available on time, to provide for housing demand in the short term (10 years) and the long term (30 years). Preferred locations and fallback locations for satisfying demand during the planning period will as necessary be simultaneously mapped out and developed. The aim is to satisfy the demand and to deliver quality, on time. The principle is to maintain a planning capacity of 130 percent of the demand for housing in 2030. The development of locations must also go hand in hand with affordability (both in terms of government investment and the housing to be created).

- In developing new residential and working locations, the target will be the best possible spatial layout of the region to prevent unnecessary mobility flows for passenger transport (including home-work travel) and goods transport, while taking account of the differences in demand across the region (for example a preference for the central city).

- Inner city areas and areas close to and surrounding public transport hubs will be optimally used as concentrated residential and working locations with high building density combined with excellent access. Building types that do not suit the objective, such as ground-based houses, will be realised elsewhere in the urban environment. Those locations will be selected that achieve the highest score in terms of proximity or good connections to the existing or still to built (public transport) network.

- The demand for space for housing, working and facilities will preferably be accommodated within existing urban areas. In each region, the accommodation capacity within existing urban areas will have to be quantified. Accommodation within existing urban areas will take place within the frameworks and legislation and regulations on air quality, noise, odour and environmental safety.

- Wherever inner city accommodation is not possible, based on the required segments and the scale of the demand, the frameworks of legislation and regulations or the quality and attractiveness of the cities and urban region as a whole (additional) urbanisation locations will be selected, adjacent to existing urban areas. Here, too, careful consideration will be necessary in respect of the other interests and good access to public transport.

- If even these developments do not provide sufficient capacity, locations elsewhere in the urban region/agglomeration will be chosen. Here, too, locations within the built-up area or immediately adjacent to built-up areas will be preferred, from the point of view of careful use of space. However, in certain regions, it may be necessary to consider other locations, too. New locations must be carefully selected in relation to other local interests, and linked to good public transport access.

The spatial and financial possibilities of each region must be immediately coherently and consistently assessed, together with the specific actions that need to be taken in respect of all the above described elements. This must be carried out in such a way that it does not detract from more difficult inner city transformations and that fallback locations outside urban centres are not selected too easily. This will ensure the optimum use of existing locations and existing access.

- Business parks for businesses that take up large amounts of space, such as large storage and distribution centres, will be developed outside existing urban areas along the main infrastructure for road and rail transport and/or transport by water.

- In developing new urbanisation locations (both inside and outside existing urban areas), the possibilities will be utilised for:
  - the production and consumption of renewable energy (connection to heat networks/use of geothermal and residual heat);
  - adaptation to climate change (tackling heat stress and sufficient water capture) for example through establishing more green. Unfavourable locations for water management or soil subsidence (for example in deep polders on or weak soils) will be avoided, or their effects will be mitigated;
  - retention and reinforcement of nature and cultural values in the living environment (greater biodiversity, sufficient nature and development of heritage values and unique character of areas);
  - contributions to the transformation of outdated areas;
  - improving the regional economic perspective and establishment climate;
  - implementing smart (high-tech) solutions for urban management and smart use of space.

This order also applies to planned growth in non-urban areas. In that case, urban areas should be understood as existing built-up area.

National government is working together with other levels of government to develop the integrated strategy and this order of preference in the Urbanisation and Housing Programme, in order to arrive at a harmonised approach. In this framework, we are investigating whether and how this strategy and order (or its integral components) can be placed in an instruction rule.

Contribution from regional urbanisation strategies

The integrated urbanisation strategy and preferred order will also be used by national government in formulating and implementing regional urbanisation strategies in regions where national government is a partner.

In the most stressed housing market regions (the Metropolitan Regions Amsterdam, Rotterdam The Hague, Utrecht and Eindhoven, the city of Groningen and the Arnhem/Nijmegen region), by means of Housing Deals (Woondeals), in structural cooperation between national government and these regions, national government is attempting to remove obstacles for the realisation of building locations, and more general obstacles to the smooth functioning of regional housing markets. The overall aim is to jointly accelerate and increase building production. At the same time, on top of the growing population, these regions also face serious bottlenecks in respect of accessibility. With that in mind, combined national and regional government accessibility programmes are being undertaken in a number of these regions. Investments in national and above all urban traffic and transport networks are often preconditions for achieving the urbanisation task. Due to their high cost, these investments in networks are key determining factors for location choice and phasing.
Moreover, choices for the concentration of urbanisation can be decisive for investments in the networks.

In regions with the highest pressure and/or complex urbanisation tasks in which multiple national interests combine, national and regional government are working together on urbanisation strategies that require integrated choices in respect of housing, working, mobility, green recreation, climate adaptation, landscape and energy transition, among others. The urbanisation strategy is an essential building block for the drawing up of the joint Environment Agenda.

In a number of regions, because of the interrelated tasks, the urbanisation strategy is being considered on a slightly larger scale: these include the regions Groningen/Assen, Brabantstad and the region Arnhem/Nijmegen/Food Valley. As well as in the Housing Deal regions, for the Zwolle region, work is underway on an urbanisation strategy in which climate adaptation is one of the key tasks.

Outside these regions there is also growth in other cities and regions, and national and regional government are working together. National government is also contributing on the basis of the urbanisation strategy and preferred order outlined above. The formulation of a joint urbanisation strategy in these regions is part of preparing the Environment Agenda.

Choices for urbanisation: search areas for large-scale development locations

For the housing market regions under the greatest pressure, the search areas for large-scale development locations are:

- Metropolitan Region Amsterdam (MRA): the eight regional 'key areas' identified by the MRI, including Havenstad and Almere (whereby the Kronenburg location requires further decision making);
- Metropolitan Region Utrecht (MRU): Utrecht station area, Merwede canal zone, Utrecht Science Park/Rijnsweerd and A12 zone (wide);
- Metropolitan Region Rotterdam The Hague (MRDH): The Hague CID/Binckhorst, Rotterdam Stadionpark and A16 zone, remaining zone Urbanisation Alliance Zuid-Holland;
- Metropolitan Region Eindhoven (MRE): Railway zone Eindhoven (including Eindhoven International Hub XL, Strijp S and Strijp T);
- City of Groningen: Suikerfabriek site and Eemskanaal zone;
- Arnhem-Nijmegen: Nijmegen Canal zone and Nijmegen Station area.

Completing these large-scale development locations is of vital importance for achieving the ambitions for urbanisation in these regions. It is a joint task for all levels of government to achieve that success. In the regional urbanisation strategies and the implementation of the Housing Deals, the way in which the various parties can contribute to achieving this ambition will also be considered.

Policy choice 3.4

With regard to existing buildings, we are aiming to integrate urban development and management to arrive at an efficient approach to the numerous tasks in these areas.

Also in areas where new residential and working locations are to be added, there are a series of major tasks over the coming years for the layout of the physical living environment. These tasks include homes that no longer satisfy modern demands, business parks that are outdated, public space that no longer meets the quality requirements and must be redeveloped (for example in respect of parking facilities), areas that have been made climate resilient, pipes that have to be replaced or buildings that must be made more sustainable to reduce the CO_2 emissions. Tackling these different tasks together, in areas where space is already intensively used (also belowground) is often essential in terms of space management and in general will generate added value through efficiency gains, quality improvement and increased support among local residents. The interadministrative Soil and Subsurface Programme, will also consider these subjects. The aim of this programme is to encourage the sustainable management and use of soil, the underground environment and groundwater.

The Environment and Planning Act will form the basis for a more coherent policy in terms of content, thereby facilitating an integrated approach to the living environment, creating space for measures tailored to the local situation and better and faster decision making. This in turn can result in different choices for the measures to be taken in the public space and in the built proportion of the environment, and eventually to better results. These choices can be laid down by municipalities in municipal environment strategies. The Transition Strategy on heating to be drawn up by the municipalities in 2021 is another important building block for this coherent approach.

In order to arrive a coherent approach, an integrated spatial design will be needed[66], according to which various tasks are brought together at the different design levels. This applies both to the built proportion of the environment such as residential complexes and for the public space between the buildings.

[66] The municipality of Amsterdam is developing a method for an integrated approach to public space, on this basis.

When it comes to renovating blocks of flats and disconnecting them from the natural gas supply, in an integrated design, it is possible to combine improving the architecture and making the shell more sustainable, with water retention measures such as green roofs and interventions that encourage biodiversity, such as nest boxes integrated in the facades. If poorly insulated, old dwellings cannot be renovated in a profitable manner in terms of energy, the combined tasks can result in demolition and new building. Renewal and sustainability measures can therefore be utilised to arrive at healthy housing. The measures aimed at the various tasks can for example be combined in developing outlines for the public space and street profiles, whereby aboveground developments, developments at ground level and belowground are all considered coherently. An integrated spatial design at district level can be used to map out the ambitions for mixed residential and working environments, which for example include housing for the elderly, ready for the future, with more green, water and space for the energy infrastructure.

The integration of urban development and management could result in an efficient approach to multiple tasks.

A part of the potential synergy in the approach for existing districts also lies in harmonising the approach to the policy tasks with the management of public space and public facilities[67]. The scale of the policy tasks facing us calls for an integrated approach that as far as possible ties in with the planned investments in replacement, for example for the sewer system. An integrated design, for example in a facade-to-facade concept[68], and an integrated approach represent the basis for the efficient solution of all the tasks.

An overview of development plans, planned measures for area tasks and proposed management interventions in every part of the city at every time period, for example in the form of a total plan or a digital system for urban development and management, can be extremely important. This system should also take account of construction and management interventions by private infrastructure managers (the operator of the energy infrastructure, cable operators, etc.). This will help reveal how the various management cycles could be synchronised for a combined approach.

[67] The Kopgroep Beheer has acquired experience with this approach in five pilot districts. Based on the resultant insights, a City Deal is being prepared and a new professorial chair will be introduced at WUR (Wageningen University).

[68] In pre-war districts, the municipality of Rotterdam is working according to a facade-to-facade method, whereby sewer management is combined with the restructuring of the street profile for climate adaptation.

In certain cases, this means bringing forward interventions that were originally planned for later; government authorities will have to release the necessary additional funding. Given the long duration of the various management cycles, a quick scan of the various tasks and a thorough understanding of the tasks for the longer term are important so as to not miss out on opportunities over the coming years. An efficient coherent approach is a serious substantive and organisational task for all levels of government. To some extent, that coherence will have to be achieved over the boundaries of the levels, in the framework of the Environment Agendas and Regional Investment Agendas. For area-specific activities, the parties will have to reconsider the possibilities for harmonising plans and timetables. Tackling the tasks together calls for freedom of action for the operational parties; frameworks for higher levels of government and interadministrative agreements will have to be formulated in such a way that they offer both security about the total result to be achieved and the space for the executive organisation to realise the various transition tasks in a single coherent approach.

Smart Cities and Regions

Technological developments, such as the use of sensors and digital systems for processing large volumes of data, offer the cities and regions of the Netherlands opportunities for more efficient and more flexible management, thereby enabling the better handling of traffic and waste flows, for example, as well as reducing the energy required for road lighting, while necessary repairs to facilities in public space are identified more quickly. Digitalisation and innovation can offer solutions for the various tasks for the physical living environment, facing cities and regions. At the same time, digital technologies offer other opportunities for cities and regions that will also indirectly impact on the physical living environment. Take for example healthcare, where they enable other forms of care provision, thereby influencing the housing behaviour of the elderly. Digitalisation and ICT can influence (the use of) the physical living environment, in that certain activities can be undertaken anywhere, on a digital platform, for example home working and online shopping. As a result, the functions of the physical living environment may change faster, allowing more flexible use. In addition, the digital infrastructure (for example transmission masts) also require physical space in urban areas. At the same time, digitalisation can facilitate other and more far-reaching forms of participation by individual citizens in reaching decisions on the layout and management of the city or region.

Since 2017, on the basis of the joint NL Smart City Strategy, the large Dutch cities have been working together with national government, the private sector and knowledge institutions to accelerate the introduction of innovation and technology in the Dutch cities, and to reinforce their international competitive position. To bring this about, the five largest municipalities of the Netherlands have taken the lead role in respect of one of the following themes: safety and security, health, mobility, resilience and the circular economy. National government is encouraging the development of digital techniques in and for the physical living environment on the one hand from the point of view of the general introduction of digitalisation and innovation, and on the other hand in the form of specific innovation programmes in policy sectors aimed among others at remote healthcare and smart mobility. These programmes relate both to the development of technology and the use of technology in society and the related issues, for example vulnerability to digital crime and the right to privacy. In 2020, a number of cities from the G40 network jointed national government and the private sector and knowledge institutions to sign the City Deal 'A smart city, that's how it's done' (*'Een slimme stad, zo doe je dat'*). This City Deal is investigating how digitalisation and the spreading of technology are leading to change in our cities, regions and villages and which tools we need to improve the liveability of our cities, while guaranteeing our democratic values.

Policy choice 3.5

We are organising the living environment in such a way that it encourages an active, healthy lifestyle and social participation, while improving air quality so that the guidance values issued by the World Health Organisation are met by 2030.

It is important that the residents of cities and regions are able to live, work and relax in a healthy environment. That in turn calls for a good-quality living environment in terms of soil, water, air, noise, odour and external safety, and the risks of infectious diseases, whereby spatial interventions always take account of health and well-being.

Mobility and movement play an important role in the functioning of any city. Clean traffic and transport systems that encourage people to exercise can help make cities healthier. Against that background, a mobility system must be encouraged that promotes active forms of transport (cycling and walking) and the use of public transport. Public open space must also offer sufficient room for relaxation, exercise and play, and encourage interaction between the city's residents.

The living environment can make an important contribution to encouraging a healthier lifestyle (exercise, relaxation, no smoking areas and healthy food supply) and improving the health potential of vulnerable groups (in particular the elderly and people with low socioeconomic status). Fostering public health via the living environment will therefore be made a priority in districts and neighbourhoods with poor public health records. This requires enhanced, recurring cooperation between the spatial domain and the social health domain. Such cooperation is not yet self-evident. To develop and share knowledge and to arrive at a coherent approach across the boundaries of the policy fields and between the numerous organisations involved, national government is launching a Healthy Living Environment programme, among others bringing together municipal health services *(Gemeentelijke Gezondheids Dienst - GGD)* and the other municipal authorities. In terms of content, this programme will focus on fostering physical and social health (exercise, sport, play, meeting, social cohesion, healthy food supply, mental pressure, growing old healthily, accessibility) and protecting physical health.

Example of design for active, healthy lifestyle

By correctly designing public open spaces, an active healthy lifestyle can be encouraged. Image: Project 'Into the wild, The Hague'.

In areas where industrial activities are combined with housing, in the framework of licencing processes, particular attention will have to be paid now and in the future to environmental safety and managing and preventing environmental risks. By introducing strict emission standards and as a result of the growing electrification of traffic, air quality in residential and living areas can be improved in a way that reduces health risks from air pollution. The ambition is that all new cars sold by 2030 will be emission-free. Government organisations and civil society parties are working on the introduction of an urban distribution system according to which, from 2025 onwards, deliveries to urban centres in the 30 to 40 largest municipalities will all be emission-free, and that this will be introduced as a standard from 2030 onwards.

Clean air in urban areas also calls for a cutback in emissions from agriculture, wood-fired heating, industry and shipping. For areas with very high concentrations, the various levels of government are working on an area-specific approach to improve health as quickly as possible.

Based on the Clean Air Agreement *(Schone Lucht Akkoord)*, national, provincial and municipal governments are working on the task of achieving a permanent improvement in air quality. Health is a central focus of our efforts and we are working towards satisfying the quality guidelines issued by the World Health Organisation, by 2030.

Social safety is also an important factor in urban development, at district level. In the Netherlands, 700,000 people live in an environment where quality of life is below standard and where unsafety and nuisance are present at an unacceptable level. To improve overall liveability, national government is working together with municipalities and social partners within the interadministrative programme Quality of Life and Safety, to develop a coherent approach in the policy fields housing, employment and participation, education and safety. This approach will be introduced in 16 urban renewal areas, where quality of life and safety are under pressure[69].

Policy choice 3.6

We are enhancing the range and quality of green in the city and improving links to green areas outside the city in a coherent approach to the urban green structure, based on the underlying principle of nature-inclusive development of urban regions and nature-inclusive building.

The presence of green and water in and around our cities is a key factor for the quality of urban living and the attractiveness of city life. It contributes to a pleasant and healthy residential environment and an attractive establishment climate. It helps create a relaxing environment and offers space for recreation, personal interaction and healthy exercise. In this way, parks and play areas contribute to social cohesion in residential districts. In particular when adding new stationary surface waters, particular attention must be paid to preventing new risks of the spread of infectious disease. Green and water in the city also play an important role in mitigating the consequences of climate change. Both are also crucial for reinforcing the contribution by urban areas to biodiversity. Even small-scale provisions such as nest boxes can prove valuable.

Additional attention must be paid to the peripheral zones of urban areas and their interaction with the surrounding landscape. These areas are often hallmarked by changing spatial quality. In some places the transition between residential areas and a green urban overflow area is attractive but often there is evidence of cluttering. City outskirts and the surrounding countryside are areas where space must be handled more carefully. Improving the structure of these areas can add value for local residents (by offering more space for exercise) while uninterrupted green structures can act as ecological link-up zones. Based on a coherent approach between city and surrounding countryside, the links between the two can be re-established, thereby enhancing the quality of both the city and the surrounding countryside. This can be promoted through the use of spatial design(-based) studies. The woodland strategy represents a similar opportunity. Thanks to large-scale reafforestation close to urban areas, the public will be offered more opportunities for recreation.

[69] See Parliamentary Papers 30995, no. 98

Example of nature-inclusive design.

The presence of green and water contribute to a pleasant and healthy residential environment, and residential streets have a clear contribution to make. Image: Nature-inclusive redesign in Genderdal, Eindhoven.

Based on the important role of green and water in urban tasks, government authorities are focusing additional attention on greening up cities and adding water, expanding the opportunities for recreation and enhancing the nature value of urban green. The numerous objectives served by greening up the urban environment are currently leading to a fragmented approach. The value green can add to the development of new real estate is often not recognised in the planning process, and when green facilities are added, future management is often poorly organised. Drawing up an urban/regional green plan as part of the regional urbanisation strategy or environment strategy can be an excellent starting point for a coherent approach for greening up paved and built-up areas. The aim is to create a green structure and links at the level of the urban region, so that city dwellers are able to spend their leisure time close to the city, in an attractive green area while nature values can make their way into the city. This includes green areas in the city where city dwellers can ramble and jog, green facilities in residential districts that tie in with the needs of the local residents and that improve the overall look and living climate, and nesting sites for animals in/on buildings. Together with the municipalities, national government will develop the policy tools for a coherent approach to green in and around the city, and reach agreements with them on implementing those developments. The establishment of an urban green fund that brings together public and private funding can serve as the financial basis for an active and coherent approach to reinforcing urban green. When the Environment and Planning Act comes into effect, it will be possible for municipalities to lay down requirements in their municipal environment plan for nature-inclusive building, both at individual building and area level.

Policy choice 3.7

Climate-resilient development of cities and regions.

Extreme weather conditions will become increasingly common, possibly leading to victims (mainly due to heat stress) and considerable damage (>€70 billion by 2050), all as a result of climate change. Many of the climate risks will not actually emerge until later on this century, but even now more extreme weather types are increasingly common. Making the physical living environment climate resilient takes a great deal of time. It is therefore now time to take action, and even in the shorter term, measures must be taken in urban areas. Government is constantly assessing decisions on the development and layout of urban areas based on the consequences for climate resilience.

Every six years, local government carries out a stress test to chart out the risks and consequences of heat, drought and flooding. The results of these stress tests can be used to determine where further measures are necessary in the existing built environment, and when making choices for the location of new spatial developments.[70] In consultation with other stakeholders such as water authorities, municipalities will have to draw up plans on how and when the various elements of the urban area must be adapted to the expected changing climate conditions. This will also have to tie in with an urban green plan that will still have to be drawn up (see policy choice 3.6) and the approach to existing building (policy choice 3.4). By 2050, the entire built environment must be water robust and climate resilient.

Example of greening up the urban environment.

Urban areas can also contribute to the climate adaptation and healthcare goals. The picture shows the Raadhuisplein in Emmen, with much space for planting and water.

As well as measures in public open space, to ensure appropriate adaptation to the changed and still changing climate, measures will also be needed in privately owned land and privately owned buildings. These measures must for example be aimed at fewer paved gardens and more green roofs with planting that retains water, reduces heat stress and offers more shadow. In consultation with the municipalities, national government will asses whether an approach based on encouragement is sufficient to bring about an effective approach, or whether more imperative measures need to be developed, to supplement the voluntary efforts.

Climate adaptation must also be a permanent component of new spatial developments and investments that are made necessary by major transitions. Concentration in urban areas must be combined with green and water in order to ensure sustainable and high-quality urbanisation. This is not yet self-evident. Compact urban developments in combination with preparations for the consequences of climate change call for a carefully conceived and well-balanced structure for the use of public and private space. Unfavourable locations for water management or soil subsidence must be avoided (deep polders, weak soils, desiccation and salt seepage) or their effects must be mitigated. New developments behind the dykes and dunes will as far as possible be implemented in a manner that does not increase flood risks.

[70] The blue chamber (blauwe kamer) commissioned by BNSP and NVTL, Region of the Future: Sketches for the National Strategy on Spatial Planning and the Environment, 2019.

Policy choice 3.8

The mobility system (for passengers and goods) in, around and between our cities delivers good accessibility. We make optimum use of existing networks and ensure that the various transport modalities are well interconnected, and are used according to their specific qualities. An efficient and sustainable mobility system contributes to a healthy living environment and a healthy lifestyle.

Mobility is an essential element of any urban development and planning. Building without carefully considering the location and mobility solutions can have major negative consequences for the accessibility and quality of life of our cities and regions. Certainly in the absence of alternative means of transport, new residential and working areas quickly lead to a sharp rise in car movements on already busy roads. Against that background, the primary choices about the development of housing locations and working locations and mobility must be carefully harmonised. At the same time, we must do justice to the relationship between collective and individual transport for both short and longer travel distances. The only way we can guarantee that our towns and cities remain accessible and offer a suitable quality of life is by following a coherent, multimodal approach.

Changing mobility behaviour

In expanding urban areas, pressure is rising on the mobility system. In compact cities, more people are able to move around more easily and more efficiently by bicycle, on foot and by public transport. For that reason, many cities are aiming to reduce the use of private cars in urban regions, in particular in the more compact parts of the city. Instead, they are freeing up space for these alternative means of transport, and encouraging shared mobility. Reducing the role of private cars in the city results in less demand on space, lower CO_2 emissions and energy consumption, improved air quality, less noise nuisance and better health. The mobility system should encourage sustainable and healthy mobility behaviour. This will require additional efforts in adapting the mobility system, by providing additional bicycle facilities, cycle paths and footpaths, revised parking policy and parking standards, improving public transport and better transfer facilities between the different forms of transport. In and around our cities, we will structure our mobility system to be more integrated and sustainable, while ensuring that each transport modality is used according to its specific qualities.

Example of encouraging a change in mobility behaviour.

The red carpet in Amsterdam creates more space for pedestrians.

System leap in the Public Transport system

In growing urban regions with high density, as well as more efficient use of existing networks, a system leap in urban public transport systems will be needed in order to allow even more concentrated development and sustainable mobility. High density development makes efficient, high-quality public transport possible, in the same way that high-quality public transport makes compact development possible. That interdependency calls for combined efforts on the part of government, project developers and public transport operators to offer residents and businesses in the various target groups a tailor-made full-service concept for housing, work and mobility. In the Future Picture for Public Transport 2040 *(Toekomstbeeld OV 2040)*[71] , three spearheads have been outlined for the further development of public transport, whereby above all the pillars Focus on the value of public transport and Low-threshold travel from door to door will be useful in supporting these efforts.

Quality improvement and integration of the road infrastructure

The emergence of electric (autonomous) cars (low costs of use, no emissions) is expected to lead to growth in car use. Outside urban regions (and in parts of the urban regions too), the car is and remains the most important mode of transport. However, any major rise in car use will call for new choices in the urban regions. The space for expanding the network is physically restricted in the regions, and very costly in terms of finance. For that reason, preference will be given to transfer points and city centres closed to individual car use.

Within urban regions, the main roads often form a spatial barrier. The road network in these urban regions also demands investment in the capacity of the connections and in improved spatial integration, to reduce these barrier effects. Outside the cities, a transformation will be needed to allow the development of an infrastructure suitable for speed cycles and autonomous vehicles. All these investments will be integrated in the regular MIRT system.

Transport hubs

Urban regions attract high volumes of traffic. Above all incoming car traffic imposes severe demands on the area, and the urban mobility system, and future developments are set to increase that pressure. To achieve the successful integration of the transport system and to offer passengers user-friendly transfers, the transport modalities must be linked together at strategic points at the periphery of our cities and regions. Various levels of government are reserving space for (the development of) hubs at the edges of our cities and regions and are joining forces to integrate the transport system and develop these hubs. The task is to create not only efficient transfer points but also to establish attractive facilities. This will require the combined efforts of all levels of government. For the largest urban regions, these are elements of the accessibility programmes currently being drawn up. Within the ring of transfer hubs, the costs of car and public transport use must be harmonised in such a way that it becomes attractive to use the transfer facilities. Within the cities themselves, small transport hubs will have to be developed in the various districts, so as to create a well-integrated and sufficiently finely meshed transport system. Community centres and large public transport stations will have to be provided with bicycle parking facilities and well integrated with footpaths and cycle paths.

[71] Ministry of Infrastructure and Water Management, *Contours of Future Policy for Public Transport 2040*, Parliamentary Papers 23645, no. 685, The Hague 2019.

Example of a transport hub in the region.

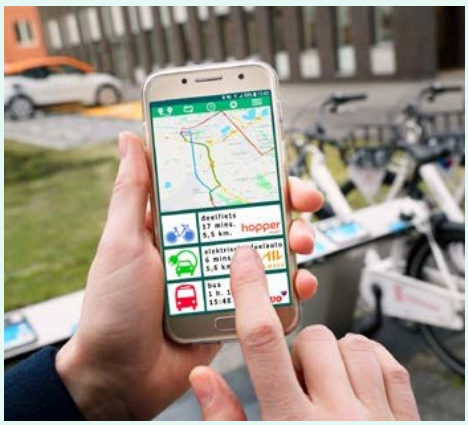
Transport modalities are brought together at strategic locations. Picture: NS Station Sassenheim with a large free carpark and excellent bus, car and bicycle connections.

The authorities will also have to set aside space for transhipment activities, in connection with the introduction of specific urban distribution systems, according to which the city centres of the 30 to 40 largest municipalities will be stocked and supplied emission-free, from 2025 onwards.

Smart mobility

The possibilities for mobility offered by smart technology appear considerable, both in terms of autonomous vehicles and managing, controlling and distributing traffic flows and means of transport. Opinions differ about exactly when autonomous vehicles will be available for general use on public roads, but for the time being use in the compact and historical cities of the Netherlands appears to be something for the distant future. In urban areas, smart public transport and smart systems for shared use of cars and bicycles are already helping improve accessibility. In the long term, autonomous shared cars could contribute to the accessibility of cities. At the same time, traffic management and social aspects will require further investigation. Outside the cities, the use of autonomous cars will offer opportunities but the conditions for shared use in these areas are less favourable.

Innovations in the mobility system



The Municipality of Eindhoven is organising a 'Mobility as a Service' pilot, with a focus on sustainable and CO2 emission-free mobility movements.

Demand-based mobility combines high-quality public transport and residential locations. Picture: Shared car for the neighbourhood in Breda.

In compact cities, parcels are delivered by bicycle. Picture: Introduction of electric delivery bikes in the centre of Arnhem.

Hydrogen buses make clean and emission-free public transport possible. Picture: Hydrogen bus in the Groningen Drenthe region.

Joint investment in accessibility

Within expanding urban areas, more structural investment will have to be made in accessibility. At the same time, the quality of connections between urban regions will have to be improved and where necessary expanded. Both aspects are essential, given the huge task in house building and the growth of the cities. Municipalities, provinces, water authorities and national government will have to make area-specific considerations to arrive at harmonised choices for the development of the mobility system. This will take place within the MIRT and is already part of the accessibility programme in the largest regions (for the Metropolitan Region Amsterdam (MRA), Metropolitan Region Rotterdam The Hague (MRDH) and the Metropolitan Region Utrecht (MRU) and within SmartwayZ.NL)

Policy choice 3.9

For areas outside the Netherlands Urban Network, areas at the periphery and/or in areas facing the problems of shrinking population, the various levels of government are jointly developing an integrated area-specific development strategy.

It is becoming increasingly clear that all these tasks can only be successfully tackled if we work together to ensure sustainable development and bring together all the parts of the Netherlands. This does not mean that the same things have to happen everywhere. Each region will require its own specific strategy. In border regions and in a number of other regions where the population is shrinking, there are other issues to be dealt with, in different circumstances. In these areas, there is no quantitative growth in the number of homes; the questions are far more qualitative in nature, for example in respect of the housing needs of the elderly or flexible housing, combined with issues of quality of life. In the border regions, for example, not all the available economic potential is being utilised. These are options that are not only relevant for these regions, but in more general terms are also vital for the development of our country as a whole. However, due to the barrier that is effectively created by the borders, to date, those possibilities have only been partially taken up. For this and other reasons, population development is stagnating in various border regions. This is having clear consequences for the provision of facilities that are essential for the social and physical elements of quality of life in these regions.

Falling population numbers impact on various domains. Population shrinkage places additional pressure on public facilities. A downturn in economic activity and spending results in lower income levels and employment opportunities and applies pressure on the retail trade and commercial services. In the physical domain, this can result in declining quality and growing numbers of vacant homes, business parks and other real estate. All these effects influence the quality of the physical living environment and can in turn lead to a further reduction in population numbers.

At the same time, these areas are still facing the same tasks as the rest of the Netherlands. Space must be created for climate and energy transition, the economy is changing and agriculture is undergoing a transition. The demographic context requires a different region and location-specific approach and other perspectives for action. Just like in other places, these tasks also offer opportunities.

Future visions on strengthening vitality and quality of life

Care2Share - Oosterparkwijk, Eastern Groningen: An integrated concept for healthcare and support by combining healthcare funding and tailor-made care provision; a subscription to the good life.

Wijk als (t)huis, Geleen-Zuid and de Kluis: An appeal to restructuring neglected residential districts as a coherent living environment in which cars give way to space for meeting and interaction.

Mark Us Familiehuis, Sittard: This residential concept re-empowers families by creating family homes around shared courtyards, where they live together, under one roof.

De Hofjes van Carnisse, Rotterdam: Courtyards as meeting places between the city parks, care centres and primary shopping streets. A city district in which the elderly have the opportunity to play an active role in a productive, urban community.

Integrated area-specific development strategy

In the combined approach by government, civil society organisations, entrepreneurs and local residents, an integrated future perspective and development strategy are being formulated, to use the economic capacity of these (border) areas. We are tackling the tasks both in the physical living environment and on the tasks facing society and economy. We are responding to the opportunities for the area according to the specific unique qualities and the space available for new developments and tasks. National and regional government are working together to prepare Environment Agendas in which these development strategies can be integrated.

In principle, the drawing up of a spatial development strategy follows the same three steps that make up an integrated urbanisation strategy, but with the proviso that in further developing facilities, accessibility and housing stock, the focus will be placed on strengthening vitality and quality of life by making use of the possible opportunities and potential for cross-border development.
If this involves new urbanisation locations, then the follow-up steps are as already outlined.

Regional distribution of facilities and accessibility

In situations in which population numbers are shrinking, but household numbers are rising, the support for facilities can be retained by creating combined facilities and by expanding building programmes in the smaller centres, to meet local needs. There can be advantages in combining various types of facility (for example family doctor's practice and dispensing chemist, school library and community centre or library and shopping facilities) In addition to primary and secondary education, it is also vital for these areas that (accessible) facilities for vocational education (if necessary as a satellite facility) must be preserved. Legislation and regulations must be capable of providing solutions of this kind. For example when it comes to the criteria for the minimum size of facilities, independent accommodation or operational management. If these criteria are not sufficient in practice, then national government will provide experimental capacity to allow new approaches.

As well as combining facilities, technological developments offer new possibilities for efficiency improvement, so that sufficient levels of service can be maintained even in areas with lower population density. Developments in ICT, for example, offer far-reaching new possibilities for remote healthcare. New transport concepts such as mobility as a service, bicycle and car sharing, combined with target group transport and public transport, networks for transport run by volunteers and new technologies such as autonomous vehicles could in the future offer a high-quality alternative in supplementing public transport, as well as meeting the transport needs of residents with no own motorised means of transport. The innovation programmes currently underway in respect of these subjects are not yet specifically targeted as the potential applications and circumstances in areas where population numbers are falling. Within these programmes, a subprogramme will therefore have to be developed aimed at application in (border) areas facing shrinking population numbers.

If population numbers fall even further, such that a combination of facilities provides no adequate solution, and even technological developments (as yet) provide no additional solace, regions will be dependent on a strategy of spatial concentration of facilities and of categories of residents especially dependent on those facilities, such as the elderly and care recipients.
In these regional subcentres/central villages, an adequate level of service provision can be maintained.

Renewal of housing stock through transformation and demolition.

In the longer term, due to the falling number of households, areas facing major population shrinkage will face the challenge of having to reduce housing stock. At the same time, they also face the same challenges facing the rest of the Netherlands, namely the need to renew, transform and make the existing housing stock more sustainable. In many cases, the transformation task is the result of a shortage of homes suitable for the elderly and singles. The situation differs from municipality to municipality, and sometimes even within the same municipality, making it necessary to split or combine individual dwellings. The transformation of existing vacant real estate into homes will in most cases be preferable, in connection with retaining the existing spatial structure and the use of natural resources, but in certain cases, new building, and the demolition of existing buildings will be necessary. The task of transforming and demolishing homes is above all a regional issue. Regional agreements on financing and locations for undertaking these transformation or demolition tasks are an integral part of the spatial development strategy. The financing of these tasks will be simplified by establishing regional restructuring funds; all owners of real estate will benefit from an improved balance between supply and demand on the real estate market. In selecting locations for transformation and demolition, the principal objective will be to maintain compact centres in the region.

In line with this spatial development strategy, a coherent approach to socio-economic development in the region will be needed, which specifically takes into account possibilities over national boundaries, where there are often more urban areas that offer additional economic opportunities. One key building bock in this respect is a realistic and widely supported economic future perspective. By involving individual citizens, businesses, educational institutions and external experts, the specific qualities and opportunities currently available in the region will have to be examined, in combination with the possibilities that can be offered by digitalisation, the energy transition and agricultural transition, and cooperation with surrounding regions.

A joint future perspective developed by government and institutions, and the specific initiatives developed in response by citizens and entrepreneurs will be essential in order to ensure the successful further development of the region.

An economic future perspective for the regions can be of vital importance in offering young people in these regions positive prospects for the future. Close cooperation between vocational education and businesses will be needed in order to establish a future perspective for the region and good future prospects for young people. State financial aid for strengthening the SME sector in the region (SME deals), boosting cooperation between vocational education and regional businesses (Regional Investment Fund for senior secondary vocational education (MBO)) and regional investments via the Regional Envelope (Region Deals) can all be tapped into.

Besides (the prospect of) sufficient employment in the region, another area for attention will be regional shortages on the job market. Due to faster ageing population, labour shortages in the healthcare sector can emerge more quickly in these regions. Non-professional mutual support in regions with a close social structure can help in limiting the demand for healthcare, but can only offer a certain degree of compensation. Here, too, cross-border cooperation may offer solutions.

In a number of areas facing specific tasks of supraregional relevance and/or in respect of which the necessary support goes beyond the capacity of the region, together with (public and private) partners, the Cabinet is signing Region Deals. In these Region Deals, national and regional government are joining forces in developing joint integrated approaches to improving the economic, social and ecological tasks. The parties to these deals undertake to work together over the coming years on new, practical solutions. The deals are built around the regional tasks. These tasks are characteristic for the region, and wide ranging in nature. Region Deals can for example be signed in respect of further improving regional cooperation between parties or tackling bottlenecks in regulations, enabling support in attractive private investment funds, the smart sharing of knowledge and networks, now and in the future calling each other to account in respect of agreed undertakings, and other collaboration agreements. The additional funds supplied by national government from the Region Envelope can be used as a catalyst or a temporary financial boost to bring about sustainable, societal change.

A number of the areas facing shrinking population numbers are located in the border regions. Differences in legal system, language, culture, etc. represent real barriers to accelerating economic development. Links with and access to the labour market in neighbouring countries can prove vital factors. Cooperation between vocational education and local businesses can be further expanded by the region to become cross-border cooperation to the benefit of regions on both sides of the border. To make better use of the opportunities available to these regions, border country agendas have been prepared while specific investment will also be made in these regions, in the form of Region Deals. National government is for example also consulting with Germany and Belgium on the potential for extending the mutual recognition of certificates, and whether communication about the existing agreements on the equivalency of the various certificates can be reinforced. Cross-border accessibility is another essential element. In implementing the Future Picture of Public Transport 2040, links with the Netherlands Urban Network for a number of these areas will be improved. A further focus on connections from this network to all regions and connections to the IC network in the neighbouring countries (from Groningen, Hengelo/Enschede and Maastricht) will also help ensure that the potential of the border regions can be utilised.

National choices for strong and healthy cities and regions

Netherlands Urban Network (Policy choice 3.1)
Reinforcing the Netherlands Urban Network and linking the aim of urbanisation to development of the public transport infrastructure.

Urban regions (Policy choice 3.2)
Contributing to the formulation of a regional strategy for a coherent approach to housing, working/employment?, mobility, health/healthcare?, security/safety? and quality of the living environment in the regions.

Healthy living environment
(Policy Choice 3.5) Improved
air quality

PM2.5 > WHO guideline PM10 > WHO guideline

Mobility system (for passengers and goods) in, around and between the cities (Policy choice 3.8).
Guaranteeing good accessibility, optimum use of existing networks and linking modalities while using their specific qualities

Areas with predicted fall in housing demand 2030 through 2039 (Policy choice 3.9)
Combined development of an integrated area-specific development strategy

4.2.4 Priority 4

Futureproof development of rural areas

The Netherlands aims to develop its rural areas to be futureproof. This means that land use is in balance with natural systems and developments in the rural areas are not at the expense of landscape qualities. This will help establish rural areas where it is pleasant to live and spend leisure time, and where now and in the future there is space for a vital agricultural sector, with healthy farms with good economic prospects that work in and towards a healthy environment. Rural areas are the playground for many national interests that demand space, including the development of sustainable (cyclic) agriculture for food and agricultural production, guaranteeing water security and climate resilience, sustainable drinking water supply and sufficient freshwater, and good-quality surface water and groundwater, the preservation and strengthening of our cultural heritage and landscape and natural qualities, the production and transport of renewable energy and improving the protection of biodiversity. All these tasks need space. Against the background of the nitrogen crisis, reinforcing our nature values has become an urgent task. The various, growing and contradictory claims on the physical living environment call for close consideration both nationally and in regional and local area processes.

Policy choice 4.1

In rural areas, the balance between land use and quality of landscape, soil, water and air is improved.

National Programme for Rural Areas

At certain locations in rural areas, emissions from agriculture are resulting in huge pressures on local residents, nature, the quality of the soil and water system and air quality.
The transition in agriculture towards sustainability, the long-term approach for nitrogen, more efficient and less use of fertilisers, crop protection agents and freshwater are all necessary to achieve environmental, nature and water targets. The nitrogen crisis has made it clear that as well as reducing nitrogen, it is essential that Dutch nature as a whole be recovered and improved. This can be achieved by strengthening nature and ensuring that spatial developments are nature-inclusive while focusing particular attention on the individual Natura 2000 areas as vital carriers.

To achieve the structural nature targets in the Netherlands and to create the space needed for economic and social developments, it is essential that extra nature be established to comply with long-term international obligations. On the one hand this refers to protecting nature against harmful external influences, joining nature areas together, and increasing biodiversity in agricultural and other rural areas (insects, soil life and meadow birds), and on the other hand, at the same time, creating space for a living climate in which it is pleasant to live and work. In which - both literally and figuratively - there is space now and in the future for highly innovative and extensive nature-inclusive agriculture. Account must be taken of the diversity of agriculture and the structure needed in agricultural areas. This will in turn maintain sufficient space for sustainable economic growth and prosperity in the Netherlands.

To determine how all of these targets can be realised, we are elaborating a strategy for rural areas in the National Programme for Rural Areas. This strategy is both national and area specific. It is an outline strategy that sets the course for the futureproof development of functions. These include both the recovery of nature and the recovery of soil and water systems. Climate adaptation is another integral part of the approach. In each area, we assess which functions can be integrated in the zones around Natura 2000 areas, with the lowest possible impact. These functions can be nature, but could also

include extensive, low-emission agriculture, other appropriate economic functions or (small-scale) house building. The relocation of functions is an option, and we are further investigating the possibility of deploying a more activating spatial policy in order to restructure rural areas.[72]These investigations include an assessment of what will be needed to initiate soil mobility in a way that best serves futureproof development of nature and agriculture, among others. Possibilities include (regional) land funds. These too will require appropriate financial arrangements. The agricultural function in vulnerable areas is further discussed in Policy choice 4.3. The Nitrogen Spatial Assessment *(Ruimtelijke Verkenning Stikstof)*[73], which considers the possibilities for the realisation of nature-inclusive land use, is a vital building block.

The National Programme for Rural Areas brings together nature-related and agricultural tasks and tasks related to housing, mobility, energy, recreation, the water and soil system and climate adaptation. In the face of developments in rural areas, cultural heritage and unique landscape and nature qualities will be retained and strengthened. Wherever possible and desirable, new qualities will be added. This approach will prevent the landscape turning into an accumulation of sectoral choices, so that transitions can combine and together generate added value. Based on this strategy, we will contribute to the optimum planning of functions so that the already scarce space is used efficiently and effectively to support the social task in these areas. This approach will also reveal where, in the longer term, space can be created for new functions, such as the production of renewable energy and freshwater availability. Together with all levels of government and civil society organisations, we are drawing up the process approach for this spatial strategy, which will be ready by the end of the year. The approach will then be undertaken as a programme within the NOVI. The task of nature recovery and nature expansion in the framework of the nitrogen approach will be an integral component.

Living and working in rural areas

Rural areas supply a variety of services to our society, including an attractive residential environment. On average, people living in rural areas are very satisfied with the quality of life in the areas they live in.[74]To a large extent, agriculture determines the appearance of rural areas.

Because certain rural areas are faced with a combination of complex spatial and socioeconomic issues, the question of how the quality of life and prosperity can be retained across the board is of key importance. On the one hand, this relates to the low population density and limited base of support for facilities (including public transport access). In the spatial development strategy outlined in policy choice 3.9 this is further elaborated. On the other hand, there are issues relating to intensive livestock farming that in certain areas results in additional pressure on the quality of the living environment from odour, and health problems from livestock farming. In the Noordoost-Brabant Regional Deal, for example, national and regional government are working to find solutions to these problems. Agriculture of the future will have to satisfy the requirements of sustainability and animal welfare, but will continue to be an important economic driving force in rural areas.

A better balance between the functions and better environmental quality will improve the quality of life in rural areas. This is vital for people who currently live in rural areas and for future development. To ensure the liveability of villages, the construction of a limited number of new homes will be necessary. For a rural environment capable of futureproof development, accessibility, economic capacity and the availability of facilities will also be taken into sufficient account in the National Programme for Rural Areas.

Decommissioned agricultural buildings can be used for the development of new functions and housing concepts, for example for the elderly. This also offers opportunities for improved sustainability and more green. In the process of conversion, inspiration can be sought in the principles of ecological residential zones and ecodistricts.

[72] The recommendations from the Remkes Committee with regard to the nitrogen approach are being further investigated in that connection. https://www.aanpakstikstof.nl/documenten/rapporten/2020/06/08/niet-alles-kan-overal

[73] Letter from the Minister of Agriculture, Nature and Food Quality regarding the problems of nitrogen and PFAS, EK 35334 no. P. The Hague 2020.

[74] www.leefbaarometer.nl

Soil and water

By dealing more carefully with the natural systems in our rural areas, that provide us with a whole range of services and resources, the balance between soil and water can be improved. This calls for a better alignment of developments in the aboveground environment, the natural processes in the soil and water system and in the underground and natural environment, as expressed by the Council for the Living Environment and Infrastructure *(Raad voor de leefomgeving en infrastructuur - Rli).*[75] Agriculture is key to these developments. In the National Programme for Rural Areas, in an area-specific approach, we are examining in outline the ideal (nature of the) agricultural function, in the right place in order to set the necessary course. The outcome will be a healthier system, with reduced use of resources and lower emissions. The Implementation Programme for Soil and Subsurface *(Uitvoeringsprogramma Bodem en Ondergrond)*[76] aims to ensure the sustainable management and use of soil, the underground environment and groundwater. In the Action Programme for climate adaptation for agriculture[77] , a clear picture is created of how the agricultural sector can prepare for extreme weather and other risks from climate change.

Finally, in the National Programme for Agricultural Soils *(Nationaal Programma Landbouwbodems)*[78], aims to have achieved the sustainable management of all Dutch agricultural soils by 2030. The result will be improved soil fertility, climate resilience, cleaner surface water and groundwater, greater biodiversity and the capture of carbon. The programme also helps satisfy the agreements from the Climate Agreement, namely to retain 0.5 Mtonnes of CO_2 equivalent per year, in mineral agricultural soils, by 2030.

The map 'Environmental burdens' in the Explanatory notes uses a series of indicators to identify areas where environmental burdens are greatest, and where the soil is vulnerable. In areas where pressure from agriculture on the environment (nature and public health) is too high, this pressure will be reduced through targeted actions. At regional level, the provinces will take control of these tasks. Protecting the quality of the living environment is a national interest, partly due to its influence on health. Among others by setting standards, national government is responsible for protecting the healthy living environment. This can also be achieved through policy rules and agreements, for example the Clean Air Agreement *(Schone Lucht Akkoord)*[79]and by providing information about health and livestock farming aimed at reducing risks to health and the living environment at local level, in areas with very high livestock numbers. This ties in with the efforts to bring about a transition towards more sustainable livestock farming and the LNV vision on cyclic agriculture.[80]

Freshwater

Regional differences in the (effects of) drought call for tailor-made solutions at regional level. On higher-lying sandy soils, longer periods of drought are leading to the lowering of groundwater levels and consequently a shortage of freshwater. In general, freshwater shortages will as far as possible be corrected within the affected areas. Land use must be matched more closely to the availability and consumption of freshwater. In areas where freshwater shortages threaten (now or in the future), we will not undertake any new developments that demand a freshwater supply - for example industry or intensive agriculture - unless sufficient measures are taken to guarantee a sustainable water supply. We will also ensure a sustainable supply of drinking water, with new and alternative sources to guarantee the availability of sufficient drinking water in the future.

[75] Council for the Living Environment and Infrastructure, *The Bottom Reached (De Bodem Bereikt),* The Hague 2020.
[76] Ministry of Infrastructure and Water Management & Ministry of Economic Affairs and Climate Policy *Structural Vision for the Subsoil/Subsurface? (STRONG)* The Hague 2018.
[77] Ministry of Agriculture, Nature and Food Quality, *Action programme climate adaptation in agriculture,* The Hague 2018.
[78] Letter from the Ministry of Agriculture, Nature and Food Quality on soil policy, Parliamentary Papers 30015 no. 58, The Hague 2019
[79] www.schoneluchtakkoord.nl
[80] Ministry of Agriculture, Nature and Food Quality, *Implementation plan LNV Vision: On the road with a new perspective,* The Hague 2019.

Dealing with natural system in the rivers area.

Redevelopment of the Hondsbroeksche Pleij polder; a floodway will allow additional water to flow into the IJssel river.

Provinces will designate Additional Strategic Supplies *(Aanvullende Strategische Voorraden AVS)* with the appropriate protection regime.[81] At the same time, households and businesses must be encouraged to save water. Saving water will also result in energy savings and a reduction in the volume of waste water to be purified; a win-win situation. It is essential that users be given transparent information about the availability of freshwater. The objective is a robust system that will be capable of mitigating as far as possible the damage to social and economic functions, in the long term, in the event of drought.

[81] Ministry of Infrastructure and Water Management & Ministry of Economic Affairs and Climate Policy, *Structural Vision for the Subsoil (STRONG),* The Hague 2018.

Choices for regional water management: preferred order

With the new insights gained from the dry summers of 2018 and 2019, a preferred order has been drawn up for regional water management. The underlying principle is that the demand for water must be matched to the availability of water, when allocating water-demanding functions to areas, by taking account of the water availability in those areas and by encouraging the careful use of water by the water demanding functions.

Our goal will be to prevent flooding and water shortages by operating the following preferred order within each area:

- improved water retention to prevent flooding and to guarantee availability;
- in the face of a flood threat, the sequential steps are 1) storage and 2) discharge. In the face of a threatened shortage of water, the sequential step is the smart distribution of water-demanding functions across an area;
- in the face of a natural phenomenon, it is never possible to prevent all damage, so if these measures prove insufficient, we as a society will have to accept (residual) damage.

Natural climate buffers

Climate adaptation in rural areas also calls for natural climate buffers (for example water retention) which in turn will contribute to landscape recovery. An essential requirement for futureproof rural areas is the availability of sufficient measures for retaining water. These tasks will be further specified on a regional basis, in the Environment Agendas. In the Delta Programme[82] the climate buffers will focus on freshwater supply, nature and biodiversity and spatial adaptation to climate change. Also within the framework of the Action programme for climate adaptation in agriculture *(Actieprogramma klimaatadaptatie landbouw)* and the Action Lines for climate adaptation in nature *(Actielijnen klimaatadaptatie natuur)*, we will be working to improve water retention in (agricultural) soil.

In the intervening areas, the flow from the rivers means that sufficient water is generally available. The soil here is ideal for intensive forms of land use, such as high-production agriculture. In addition, as a result of new safety standards and advancing climate change, the Netherlands is faced with a major and urgent water safety task, in particular in the rivers area. In the national government Integrated River Management Programme *(Programme Integraal Riviermanagement)*, national government and regional (water) partners have set themselves the goal of mapping out the tasks for water security, water quality, navigability, freshwater availability, nature and spatial and economic quality, and to tackle each of these tasks, together. Another aspect of the ambition is to achieve spatial quality within the rivers landscape, with high-quality nature.[83] Sea level rise and soil subsidence along the coastline are also causing structural erosion, so constant interventions are needed in order to retain the overall volume of land.

[82] Ministry of Infrastructure and the Environment & Ministry of Economic Affairs, *Delta programme 2019: Continue to work on the delta: adapt the Netherlands to climate change, in time.* The Hague 2019.

[83] Letter from the Ministers of Infrastructure and Water Management & Agriculture, *Nature and Food Quality in respect of futureproof rivers with high-quality nature combined successfully with a powerful economy,* Parliamentary Papers 27625, no. 422, The Hague 2018.

Soil subsidence

In some peat soils, groundwater levels will have to be raised, in the future. Low-lying areas along the coastal strip will be faced with growing levels of salinisation as a result of sea level rise and soil subsidence. At certain locations this can lead to changes in functions - for example from agriculture to nature and water - or to other types of nature or crops. This will change the face of the landscape.

In cooperation with the people living and working in these areas, the various government actors will less often employ 'level follows function' and will increasingly apply 'function follows level' as the active policy principle. They will aim to raise groundwater levels to reduce soil subsidence and CO_2 emissions. Together with the water authorities and provinces, national government will aim for these effects, examining the most desirable and vital measures for each individual polder. In certain areas, this could also result in function change. The key principle is that there must be a good future perspective for today's users.

In the Peat Plan *(Veenplan)* phase 1[84] the focus has been placed on raising groundwater levels, because this is expected to be most effective in reducing CO2 emissions from peat soil, without specifying the related function. The underlying policy principle is that raising groundwater levels will set the pace, rather than following function. If groundwater levels are raised, existing functions may have to be adapted or changed entirely. In this way, raising groundwater levels will influence the possibilities for structuring the soil, a process that will be shaped carefully and locally, under the auspices of the provincial authorities.

Provinces will organise or facilitate this process with land users (including farmers), civil society players, local residents and other levels of government, all with the aim of drawing up a programme for each area of peat pastureland (Regional Peat Pasture Strategy). A draft programme will be prepared in 2020.

Future investigations into raising water levels in peat pastureland

Impression of the draft Regional Energy Strategy for Fryslân: Rewetting peatland areas in combination with other functions such as extensive livestock farming, biomass farming and nature development.

[84] Ministry of Agriculture, Nature and Food Quality, Veenplan 1st phase, Parliamentary Papers 32813, no. 562, The Hague 2020.

Impressions from the investigation into Wet energy generation to retain peat landscapes: Wet crops contribute to the sustainable preservation of the historical peat pasture landscape, as well as offering opportunities for new functions and qualities.

In drawing up the Regional Peat Pastureland Strategies, the influence on the physical living environment and long-term quality of life (through to 2050) will be considered. Attention will also be focused on landscape qualities that go beyond the local boundaries, and the careful handling of unique historical landscapes.

For an overview of the area, see the map 'Soil subsidence' in the Explanatory notes.

Choices in respect of soil subsidence in Peat pasturelands

The Climate Act states that by 2030, the emission of greenhouse gases must have been reduced by 49% as compared with 1990, and by 2050 by 95%. How this will be achieved has been elaborated in the Climate Agreement. This Agreement sets a CO_2 reduction target for peat pastureland of 1 megaton by 2030[85]. The problem of CO_2 emission and soil subsidence in peat pastureland is heavily dependent on the characteristics of the regional soil and water system. The opportunities for dealing with soil subsidence in a cost-effective manner differs from area to area. The Netherlands Environmental Assessment Agency (2016)[86] has elaborated and calculated three measures. Two technical measures, underwater drainage and level fixation, and the third, transition in land use (due to raised water levels). The outcome is a change in the function to nature or wet agriculture.

[85] Ministry of Economic Affairs and Climate Policy, *Climate Agreement,* The Hague 2019.

[86] Netherlands Environmental Assessment Agency (PBL), *Balance for the living environment 2016*, The Hague 2016.

Underwater drainage and level fixation
Underwater drainage slows down soil subsidence with no tangible consequences for crop yields, and no consequences for the landscape. This measure is not suitable for use everywhere and does not offer a permanent solution. It can result in increased demand for freshwater and leads to little change to nature or biodiversity.
The effectiveness of underwater drainage and the consequences for the water system are being investigated in the framework of the National Investigation Programme into Greenhouse Gases in Peat Pastureland.[87] Level fixation (passive rewetting) also slows down soil subsidence and is likely to have a favourable effect on nature, but in the long term does call for adaptations in agricultural use due to crop loss or reduced milk production.

Transition in land use
The third measure, transition in land use (if water levels are raised) halts soil subsidence, is good for nature and biodiversity, but may have negative economic consequences for agriculture and the cultural historical value of the landscape. There are opportunities for wet agriculture, but a realistic estimate is difficult. Further studies for example via area pilots will have to identify the extent to which these three measures or a combination of the three are a cost-effective means for also limiting CO_2 emissions. At present, soil subsidence in peat pastureland is not only leading to restrictions for agriculture, but also to damage to buildings and infrastructure in towns and villages due to the method of building and preparing land for building use. This means that the solution in each area will require an integrated approach, whereby consideration will also have to be given to the different causes of soil subsidence, between urban and rural areas.
This is influenced by climate-related, economic, housing and natural interests, in both the agricultural sector and in the surrounding towns and villages. The proposed solutions will have a direct influence on the business operators and residents in the affected area.

Future perspective
One increasingly pertinent question is in which areas existing land use still offers a long-term future perspective, and in which areas current land use is no longer viable. For certain areas, efforts could be focused on introducing innovative (underwater) drainage techniques. In areas where there is no longer-term perspective, a switch to other forms of agriculture or other functions will be necessary, at some point in the future. Taking account of the importance of reducing CO_2 emissions as quickly as possible, the decision could be taken to switch to other wetter forms of land use even sooner, in these 'borderline areas'. A key precondition is the expected future perspective for the current user.

Based on their responsibility for spatial planning, the role of taking charge of this process lies primarily with the provinces. In consultation with all stakeholders in the area, and in harmony with other relevant area tasks, they can arrive at a coherent and broadly supported future vision for peat pastureland areas. National government will call upon the provinces to draw up their own visions on peat pastureland. This will put them in a position to identify those areas where there are long-term future perspectives for current land use, and those areas where a switch to other wetter forms of land use is desirable. These area visions will be seen in conjunction with the Regional Energy Strategies that are still to be drawn up, and the stress tests to be undertaken as part of the Delta Programme (2016).

[87] 7 www.nobveenweiden.nl

Policy choice 4.2

Biodiversity is protected and strengthened and natural capital is sustainability utilised.

The average quality of Dutch freshwater and terrestrial nature (and biodiversity) has been declining for years. This process is slowly being reversed but stable recovery has not yet been achieved. This reversing trend is above all the consequence of the growth in the area of land allocated to nature in the Netherlands, and the improvement of the quality of water and nature areas. Over the next few decades, the Cabinet wants biodiversity to recover. This will call for a robust and interconnected system of nature areas. With this in mind, the Netherlands Nature Network *(Natuurnetwerk Nederland)* will be further protected, expanded and combined, in the future. In accordance with agreements in the Nature Pact[88] entered into with the provinces, at least 80,000 hectares of additional nature will have been created by 2027. In the letter from the Cabinet about the nitrogen approach[89] a multiyear additional budget is set aside for reinforcing nature. An integral part of that policy is the improvement of the water and environmental conditions of nature areas. In this way, biodiversity will enjoy sustainable protection. At the same time, efforts will be made to combine nature and landscape development with the implementation of large (civil-engineering) structures. Attention will also be focused on expanding CO_2 storage in nature areas, in combination with reinforcing biodiversity and achieving the nature goals. This will not only be achieved in (newly established) woodland, but also in new salt marshes and mudflats (blue carbon).

Water quality

By 2027, sufficient measures will have been taken to achieve the objectives of the Water Framework Directive[90]. The catchment area management plan to be implemented in the period 2022-2027 contains packages of measures for the structuring and management of regional bodies of water, to counter foreign burdens and to ensure the adequate functioning of sewage water purification plants. The development towards cyclic agriculture, improved soil management, implementation of the seventh and eighth action programme from the Nitrate Directive and the Implementation Programme for the Future Vision on Sustainable Crop Protection *(Toekomstvisie duurzame gewasbescherming)* should result in almost zero loss of nutrients and crop protection agents from agriculture and horticulture, so that standards in this area are no longer exceeded in achieving the desired quality of surface water and groundwater. That quality will also be improved via a chain approach to drug residues in water and investigations into solutions for emerging substances and microplastics. To achieve the targets of the Natura 2000 programme, more efforts will be needed in certain areas. These will include the measures from the Programme Approach for Large Waters (PAGW). The PAGW aims to improve ecological water quality and to establish and strengthen robust nature in the large waters. This will in turn help to achieve the Nature Ambition for Large Waters (*Natuurambitie Grote Wateren*). These measures will be elaborated at area level, based on the integrated approach to the relevant functions (including economy, recreation, water safety, etc.). The existing nature targets (in the framework of the Birds and Habitats Directive) will form the starting point. The Nature Profit Plan *(Natuurwinstplan)* will examine whether it is possible to shift targets between Natura 2000 areas in order to arrive at robust and climate-resilient nature. In the North Sea Programme[91] , attention is focused on the importance of a good environmental state of the sea, combined with sustainable and responsible use.

[88] 88 Ministry of Agriculture, Nature and Food Quality, *Nature Pact,* Parliamentary Papers 33576, no. 6, The Hague 2013.
[89] Letter to the Minister of Agriculture, Nature and Food Quality *in respect of the problems surrounding nitrogen and PFAS*, Parliamentary Papers 35334 no. P, The Hague 2020.
[90] National government, *Water Framework Directive (WFD), see* https://www.helpdeskwater.nl/onderwerpen/wetgeving-beleid/ kaderrichtlijn-water/
[91] Letter from the Minister of Infrastructure and Water Management, *Marine Strategy for the Dutch sector of the North Sea (Mariene Strategie voor het Nederlandse deel van de Noordzee),* Parliamentary Papers 33450, no. 55, The Hague 2019.

Measuring water quality

To identify the necessary measures, the quality of surface water is measured. Image: Pilot with online water quality measurement.

Nature

To comply with national and international agreements on 'biodiversity, considerable efforts will be needed, to expand the scope of what can be achieved. The national ambition for 2050 is to fully comply with the objectives of the Birds and Habitats Directive[92] (in other words: achieving conditions according to which all protected species and habitats can be sustainably maintained) and to at least halve the ecological footprint of the Netherlands, in the world. To further elaborate that ambition and the task in respect of nitrogen reduction, the Cabinet has also opted for a target value for nitrogen deposition: by 2030, at least 50 percent of the hectares containing nitrogen-sensitive nature in Natura 2000 areas must have been brought below the critical deposition values (CDV). In addition to nitrogen reduction and nature conservation and recovery, we will also be aiming for nature-inclusive spatial planning.[93]

To achieve the necessary intensification of nature policy, the Cabinet has announced long-term investment plans, rising to € 300 million for the period 2021-2030. This will involve acceleration and intensification of recovery measures, improving hydrology in and around nature areas, increasing the payment for nature management, accelerating the acquisition and development of land for the Netherlands Nature Network and planting new woodland to compensate for tree felling as a consequence of Natura 2000 management plans. The activities will be specifically elaborated in the Nature Programme *(Programma Natuur)*[94] developed by national and provincial governments.

Strengthening biodiversity

The efforts to establish a robust Netherlands Nature Network and to link up areas of nature, creating buffer zones around vulnerable nature areas and forms of extensive agriculture and agricultural nature management around Natura 2000 areas, will all contribute to stronger biodiversity. By working on landscape development and recovery and developing an attractive living environment, biodiversity will receive a major boost.

[92] Letter from the Minister of Agriculture, Nature and Food Quality, Parliamentary Paper on the progress of Natura 2000, Parliamentary Papers 33576 no. 189, The Hague 2020

[93] Letter from the Minister of Infrastructure and Water Management, *Marine Strategy for the Dutch sector of the North Sea (Mariene Strategie voor het Nederlandse deel van de Noordzee),* Parliamentary Papers 33450, no. 55, The Hague 2019.

[94] Letter from the Minister of Infrastructure and Water Management, *Marine Strategy for the Dutch sector of the North Sea (Mariene Strategie voor het Nederlandse deel van de Noordzee),* Parliamentary Papers 33450, no. 55, The Hague 2019.

This applies in particular to the national parks (New Style) but will also be common practice elsewhere. In each area, an assessment must be made of which functions can be integrated in zones around Natura 2000 areas, while generating the least possible burden. By combining the tasks in rural areas, new opportunities will be created for nature. The National Programme for Rural Areas referred to above will be useful in improving biodiversity and nature recovery, landscape recovery and improving environmental and water conditions. Via an area-specific approach, involving all relevant stakeholders, we can identify the optimum opportunities for nature in combination with agriculture (and vice versa) and other functions.

Biodiversity will enjoy sustainable protection.

Nature-inclusive agriculture offers space for the recovery of biodiversity and nature.

This ties in with the first consideration principle 'combined functions take precedence over single functions'. Together with the provinces, we will also be investigating further requirements for bringing the (international) biodiversity targets within reach, over and above the agreements in the Nature Pact. This also ties in with the recently published European Commission Strategy on Biodiversity which, explained briefly, specifies that biodiversity and the ecosystem services must be protected, appreciated and appropriately recovered by 2050. These targets will be elaborated among others in the Biodiversity Programme.

Woodland

The creation of new woodland, landscape elements and the operation of agro forestry not only promotes biodiversity recovery but also offers excellent opportunities for capturing CO_2, in combination with strengthening landscape structures, sustainable circular house building and a healthier living environment. There is also greater appreciation within society for the need for woodland. The ambition expressed by national and provincial government is that by 2030, the total surface area in the Netherlands covered by woodland must have grown by 10 percent to 407,000 hectares. This ties in with the relevant agreements in the Climate Agreement and represents a target of planting at least 37,000 hectares of additional woodland.

One important operating principle is that all new woodland outside the Netherlands Nature Network must serve to reinforce landscape quality. This will call for good design subject to an integrated assessment of the various targets and functions. Woodland can serve as a buffer between various functions that at present remain separated, such as between town and country and between nature and agriculture. This could help soften the transition between functions.

Function combinations with other forms of land use offer opportunities for making optimum use of the limited space available. Potential combinations emerge for example in encouraging timber construction, the construction of wind farms, wettening peat pastureland areas, greening up cities in the framework of climate adaptation and in the areas adjacent to infrastructure elements.

Urban areas

Not only rural areas but also urban areas can contribute to the nature and biodiversity targets (see also the priority Strong and Healthy cities and regions). The urban environment is already an ecosystem for a variety of flora and fauna. Through greening up and the integration of more water in urban areas, nature quality will be improved as well as making a contribution to climate adaptation and wellbeing and healthcare targets. Nature-inclusive building will contribute to an improved living environment and can be combined with the various tasks in the built environment. Here, too, there are opportunities for improving the links between outlying green areas and the urban landscape, as is taking shape in the framework of The Green Metropolis (National Forestry Service *(Staatsbosbeheer)*)[95].

The Implementation Agenda accompanying the NOVI includes a Strategic assessment of 'Biobased building'. This strategic assessment aims to accelerate sustainable urbanisation in connection with landscape recovery, increased biodiversity and new earning models for agriculture. The major advantages of building in timber are reduced nitrogen emission and the long-term capture of CO_2, in place of CO_2 emission (at present, on a global scale, the construction sector is responsible for 11 percent of all CO_2 emissions). The aim is to establish cohesion between the tasks facing society and landscape quality by combining policy and practice as far as possible.

Future investigations into town and country connections

Urban landscapes in Zuid-Limburg: A vision drawn up on the basis of a design-based approach, that offers a perspective for the areas of Limburg located between the urban and rural environment.

Ringpark Utrecht: An inspiring spatial concept that combines the tasks for housing, accessibility, energy transition, land- scape, food production and ecological quality.

Policy choice 4.3

A sustainable vital and circular system of agriculture and food supply will be established, based on nature-inclusivity.

Agriculture as a primary function

Rural areas provide a range of important services for our society, not only in terms of food, biomass and energy, but also experience of the landscape, identity, an attractive residential environment, high-quality employment, space for recreation and tourism, water storage, the purification of air and water, the storage of CO_2, and many more. Both soil-bound and non-soil-bound agriculture and horticulture in the Netherlands must be given sufficient space to produce in a way that is both ecologically and socioeconomically viable and tenable. The Netherlands has an efficient agricultural sector (agriculture and related commercial activities) that occupies a leading role across Europe. We wish to maintain that strong position in the future, but the way we do it must change.

[95] Letter from the Secretary of State for Economic Affairs regarding the evaluation of the Dutch National Forestry Service, Parliamentary Papers 29659, no. 139, The Hague 2015.

The relationship between agriculture, landscape and nature must become stronger and more organic than is currently the case. The Strategy document Agriculture, Nature and Food: Valuable and Connected and the Nature Pact from the Minister of Agriculture, Nature and Food Quality will set the course: both will require cyclic agriculture and nature-inclusive agriculture.

It remains essential for the Netherlands that these changes contribute to a healthy and viable sector that retains its international competitive position. In suitable areas, space for agriculture will remain a primary function in which existing conventional agriculture will as far as possible make the transition to cyclic agriculture.

Future investigation into innovation in agricultural and food systems in the design study 'The Region of the Future by BNSP and NVTL.

Precision agriculture allows varied production on a large scale.

Example of nature-inclusive agriculture in the Vexin region of Northwestern France.

Potential new colour for agriculture (based on soil conditions)

The core of the transition to cyclic agriculture is that the current chain must change to a system with minimal unnecessary losses. Agriculture, horticulture and fishery will become part of a circular food system. Cycles of raw materials and resources will be completed at the lowest possible scale; regional, national or international. Arable farming, livestock farming and horticulture will as first choice use materials from each other's chain, together with residual flows from the food industry and food chains. The focus will be placed on closing cycles of nutrients, water and energy, preventing waste and residual products and restricting emissions into soil, water and air. Crop residues, food residues, process waste and manure must be reused or processed into new products. Cyclic agriculture interacts with local conditions: the agricultural function will make sustainable use of the soil and water system and wherever possible will contribute to biodiversity. The result is a vital system. Non-ground-based sectors will as far as possible become emission free and complete their cycle by recycling residual flows, thereby limiting the pressure on nature, landscape and the residential environment.

In many cases, cyclic agriculture that maintains its current value requires more space, while there are other claims for that same space in connection with other developments. New functions that require space must not negatively influence the quality of the living environment, any more than necessary. The National Programme for Rural Areas lays down guidelines for a variety of functions. This can also help contribute to a structured reinforcement of agriculture itself, so that the most suitable agricultural land remains available to agriculture. These goals will have to be designed and implemented at area level; a tailor-made approach is called for, that ties in with the characteristics and capacities of the areas in question, while taking account of the various tasks facing society. In the framework of a national programme for rural areas (see policy choice 4.1), in close collaboration with local levels of government and all stakeholders, we will draw up an outline strategy, that sets the course for the futureproof development of agriculture and other functions in rural areas including urbanisation, improved quality of life, better air quality and improvements in other aspects of the environment, nature and quality of the living environment.

Agriculture in vulnerable areas

The greatest urgency for adapting the development space for agriculture is felt in areas where the environmental quality is itself under the greatest pressure: namely close to vulnerable nature (Natura 2000 areas) and in the peat pastureland areas suffering from soil subsidence (often culturally valuable locations) and groundwater protection areas. It is also important to carefully set the course in areas where the concentration of businesses is greatest or where businesses are located close to residential areas. The map 'Environmental burdens' in the Explanatory notes uses a series of indicators to identify areas where environmental burdens are greatest, and where the soil is vulnerable. In vulnerable areas, the transition of agriculture to various forms of cyclic agriculture must be given priority. For that reason, the Cabinet has freed up funding for example for tackling soil subsidence in peat pastureland areas and for a series of measures in the framework of the nitrogen programme, including grants for low emission livestock accommodation and animal feed measures such as funding for the development of sustainable livestock accommodation based on at-source measures and a transition fund for farmers wishing to switch to other forms of farm management. A buy-out scheme will also be elaborated, aimed at farm businesses with high nitrogen deposition. Moreover, pig farmers that generate high levels of odour nuisance have previously been offered a buy-out option.

These steps are always taken in the form of local, tailor-made measures, whereby the link must be established between the wishes and the options available to the companies in question. In the event of relocation, it must be possible to find a suitable location elsewhere. The provinces play a key role in this process and are able to arrive at an integrated approach. Within that approach, smart combinations can be achieved at local level between farmers wishing to stop, farmers wishing to continue their farming business at a different location and farmers who wish to switch to an extensive form of agriculture for example in combination with agricultural nature management. There are already excellent examples of each. The provinces must take the lead, are in control of the area-specific approach, and as such are the first point of contact for farmers wishing to make changes.

In certain cases, it will be necessary to look for possibilities beyond the boundaries of a particular province. Such facilities as land funding may have a role to play.

Diverse form of land use

Cyclic agriculture can include more diverse forms of a agricultural land use. Example: Agroforestry with a combination of hazelnuts and potatoes.

Depending on the area-specific conditions, the land of farm businesses that are halting operation or relocating can potentially be leased or rented to farmers who intend to operate according to nature and landscape-inclusive principles. This will have a positive influence on the environment, biodiversity and the landscape. At farms that switch to this work approach, the yield per hectare will unavoidably fall, so a new earning model will have to be created. The first step will be to consider appropriate land lease prices.

The next step will be to examine alternative compensation, for example offering rewards for ecosystem services or the availability of payments from the new Common Agricultural Policy.

These developments and their realisation must be implemented in close collaboration with the affected farm businesses and civil society partners. National government will support and facilitate this process in numerous ways, including contributions from the new Common Agricultural Policy (CAP). In the European context, the Minister of Agriculture, Nature and Food Quality will be working towards a policy that brings about a form of agriculture that combines the economy, farming and the living environment, is focused on regional tasks and thereby enjoys support and local legitimacy, while promoting the essential transition to cyclic agriculture and tackling the climate task.

The programmes for the Renewal of manure policy *(Herbezinning mestbeleid)* and Sustainable livestock farming *(Verduurzaming veehouderij)* will contribute to the ambitions in the framework of cyclic agriculture, alongside the National programme for agricultural soils, the Future strategy for sustainable crop protection and the Horticulture Agreement *(Tuinbouwakkoord)*. By deploying the innovative capacity in the Dutch agricultural and horticultural sector, the Netherlands can become an international frontrunner in sustainable cyclic agriculture.

Policy choice 4.4

Unique landscape qualities will be strengthened and protected. New developments in rural areas enhance landscape quality. Environmental policy will become landscape inclusive.

Landscape quality

Our society attaches considerable value to the Dutch landscape. Many people live and work in this landscape. It gives people an identity, and is an invitation to enjoy the cultural, historical and ecological values. Landscape quality is a soft value which is difficult to express in monetary terms, but which is of clear (economic) importance. The landscape is sometimes handled carelessly, although in most cases this is not a deliberate decision. It often happens because developments are initiated from the viewpoint of a single interest, with insufficient attention for the quality of the landscape, and limited consultation of local residents or other local stakeholders.

In order to maintain a vital rural environment, rural areas must be designed in such a way that they offer a pleasant environment for employment, housing and recreation. Fragmentation caused by the discontinuation of farm businesses must be prevented. Measures must also be taken to prevent the uncontrolled spread of distribution centres and landscape cluttering and to ensure that fertile agricultural land or areas with high landscape and natural values are not built on, or covered with solar panels. Based on the Climate Agreement, advancing urbanisation, the energy transition and the reorientation of agriculture will lead to major spatial tasks. To be able to fulfil those tasks while retaining support, an environmental policy must be developed that ensures that landscape quality is fully considered in the planning and implementation of projects.

National focus on landscape

Preserving and developing our landscapes calls for additional efforts on the part of national government. The unique cultural and historical, landscape and natural qualities of our Dutch landscape must be preserved and strengthened in developing rural areas. Wherever possible, we will add new qualities such as rest and relaxation, panoramas and the natural look and identity of the landscape. Wherever this has not already been done, the regional parties will identify the area-specific unique landscape qualities and underlying values, and will record those qualities and values in spatial policy and regulations. The intention (if necessary) is to record these qualities in (step-by-step) instruction rules in the Decree on the quality of the living environment *(Besluit kwaliteit leefomgeving)*[96]. To increase environmental quality, we must design all important transitions for the physical living environment in such a way that they contribute to the landscape quality or add new qualities, for example in the form of combining nature and water retention and the construction of natural climate buffers. This in turn will satisfy the consideration principles ‘Preventing the shifting of responsibilities’ and ‘Combining functions’.

[96] Decree on the quality of the living environment, Netherlands Government Gazette 2018, 292.

National government will at least be focusing on the following landscapes: Coastline, Wadden Sea, Green Heart, Veluwe, IJsselmeer, Southwestern Delta, the Hollandse Waterlinies and the National Parks. Together with partners from each of these areas, the core qualities and values have been or will be identified. Existing areas that already have UNESCO status offer an internationally recognised quality, and as a consequence are by definition also of national importance. It is conceivable that in line with the NOVI, other landscapes will in the future be designated as being of national importance, such as new areas with UNESCO status. The provinces have the option to designate special landscapes, to ensure the strengthening and protection of landscape qualities and valuable landscapes.

The Wadden Sea.

The Wadden Sea is one of the areas in the ONS Landschap programme.

The ONS (National Strategy Development) Landscape programme[97] is an integral part of the Implementation Agenda. The aim of this approach is to join other levels of government, civil society partners and society as a whole in protecting and developing valuable landscapes in the Netherlands. The programme comprises an area-specific component and a generic component, each of which complements the other.

Landscape-inclusive environmental policy

The various transitions come together and are revealed in the landscape. Our ambition of increasing the quality of the environment must be achieved in these areas. It is therefore essential that all important transitions for the physical living environment be designed in such a way that they contribute to the landscape quality or add new qualities. The Davos Declaration[98] to which the Netherlands is also a signatory, represents a clarion call to tackle social challenges as a means of strengthening or at least maintaining environmental quality. This also includes preserving and strengthening cultural heritage, that acts as a carrier of area identity. By consciously linking the current tasks with the goal to improving environmental quality, spatial investments will gain in social relevance. This calls upon all actors, be they government, civil society organisations or individual citizens, to plan changes in the landscape that take account of preserving the landscape quality.

This means that the transition of agriculture, the energy transition and of course the influence of economic functions on the landscape, such as infrastructure and cluttering, as well as the house building task, must be tackled with due care and attention for our living environment. These transitions in which an integrated approach in combination with social and societal goals are important are further elaborated below.

[97] Letter from the Minister of the Interior and Kingdom Relations in respect of the National Strategy on Spatial Planning and the Environment, Parliamentary Papers 34682 no. 48, The Hague 2020.

[98] Conference of Ministers for Culture, Davos Declaration on Baukultur 2018, Davos 2018

Agriculture and landscape

Whereas we currently see abrupt transitions between intensive forms of agriculture and livestock farming with high environmental burdens on the one hand, set against vulnerable areas on the other, it is essential that more gradual transitions be created in the rural areas. At the transition between urban and rural environments, too, there are numerous possibilities for reinforcing landscape qualities as well as opportunities for mixing functions and creating new earning models for agriculture, for example in terms of recreation, power generation and nature management.

Together with its partners, national government is aiming to ensure that the process of making agriculture circular and nature inclusive also takes account of integration in the landscape. In the Strategy document for Agriculture, Nature and Food, known by the abbreviation LNV strategy: Valuable and Linked[99] and the related Realisation Plan[100] , landscape has been identified as an integral element of the transition, and a benchmark for the assessment of policy and initiatives.

At present, the European Commission is working to prepare the new policy period for the Common Agricultural Policy (CAP). The goal of national government, as outlined in the realisation plan for the LNV strategy is to use the new CAP to encourage the retention and recovery of the variety of landscape elements by rewarding the creation and management of landscape as a service to society. This is in line with the relevant recommendation issued by the Netherlands Environmental Assessment Agency (PBL)[101].

Energy and landscape

The energy transition will be designed to be nature and landscape inclusive to satisfy the interests of climate, and to ensure support in society, biodiversity, landscape and cultural heritage. The preference for clustering wind energy and the preferred order for solar energy, as outlined in policy choice 1.4, will help to protect rural areas and the landscape. It is essential when installing onshore renewable energy arrays, that these tie in with the characteristics of the area. This process is elaborated in the Regional Energy Strategies (RES). Cooperation and consultation between RES areas is vital in order to prevent the shifting of responsibilities onto the landscape, across the boundaries of individual areas. In the Green Heart, for example, separate RES drivers are working closely together, with the three provinces and the National RES Programme[102] on common construction principles in favour of energy-efficient, combined use of space. This may provide inspiration for other areas with important landscapes.

Economy and landscape

The landscape is a key component of the establishment climate, both in more urbanised areas and in rural regions. For a high-level knowledge economy like ours, the accessibility and the attractiveness of the surrounding landscape is of vital importance in competing with other countries. An attractive living environment is also an essential precondition for tourism. The attractiveness of the living environment, after all, is often the reason why visitors come to a particular region.

An attractive landscape means that people are keen to live, work and spend their leisure time in that landscape. Based on provincial space-for-space schemes, for example, decommissioned agricultural buildings can be converted into attractive new residential or working locations, whereby the agricultural land that is also made available can as far as possible be used to increase the soil-bound character of the surrounding agricultural businesses, or set aside for agricultural nature management. National and regional authorities are working together to determine how the task of agricultural vacancy and land reallocation can be dealt with, in relation to the combination of functions in rural areas, the preservation and strengthening of quality of life in the countryside and preventing further landscape deterioration. These elements are all brought together in the National Programme for Rural Areas.

[99] Ministry of Agriculture, Nature and Food Quality, *Agriculture, Nature and Food Strategy: Valuable and Linked,* Parliamentary Papers 35000, no. 5, The Hague 2019.
[100] Ministry of Agriculture, Nature and Food Quality, *Realisation Plan LNV Strategy: On the road with a new perspective,* The Hague 2019.
[101] Netherlands Environmental Assessment Agency, *Care for the landscape, towards a landscape-inclusive environmental policy,* The Hague 2019.
[102] www.regionale-energiestrategie.nl

The clustering of commercial activities at locations close to infrastructure hubs is a vital priority. For example, it contributes to agglomeration advantages, improved use of infrastructure, spatial quality and the preservation of valuable landscape elements. Although serving a national interest, it requires local implementation. In the integration process, account must be taken of the quality of the landscape. As far as possible, we must prevent the unbridled development of large-scale, uniform storage and distribution centres alongside trunk roads. The Board of Government Advisors *(College van Rijksadviseurs)* has also drawn attention to this issue[103]. Against that background, the Cabinet is aiming to concentrate logistic functions along (inter) national corridors, and to develop further concentration at logistic hubs along these corridors. This is important both in respect of landscape quality and limiting mobility, as well as strengthening the logistic system and our economy. See also the box Approach to Concentrating logistic functions, policy choice 2.7.

Choices for valuable landscapes

Certain landscapes are of such value to the Netherlands that they deserve additional protection. Nature and landscape qualities must be preserved, and require additional attention.

As part of the national interest of protecting and strengthening cultural heritage and landscape and natural qualities, existing policy has already been elaborated for various different landscapes (for example in respect of world heritage). For a select number of areas, national government aims to deliver additional efforts to protect the landscape together with the local residents and other stakeholders. These are landscapes that satisfy one or more of the following criteria:

- Story: landscapes that are readable and contribute to the experience of telling the national story of the creation and spatial differentiation of the Dutch landscape;
- Unicity: landscapes that offer landscape qualities, natural values and/or cultural and historical values that are unique on a national and international scale;
- Scale: landscapes in respect of which the task of preserving their quality exceeds the scale of a merely regional or provincial task;
- Threat: landscapes that are threatened now or in the future by spatial developments.

Coastal Pact and North Sea
Cooperation on the basis of the Coastal Pact will be continued. In the progress letter sent to the Dutch House of Representatives in June 2019, the focus of that cooperation is described as being placed on recreational building in relation to the threats and opportunities for the quality of the coast.
This cooperation is focused on three elements:

- Monitoring and assessment of recreational building and agreements from the Coastal Pact;
- Maintaining a knowledge agenda and dialogue in which new developments that could influence the balance between development and protection are examined;
- Translating insights from the monitor and surveys into proposals for possible adaptation of policy and regulations, and input for Environment Agendas.

Specifically with a view to protecting landscape qualities on the North Sea, national government will maintain a free view of the horizon to a distance of twelve nautical miles from the coast, and guaranteed in the Decree of General Rules for Spatial Planning (Barro) and the Decree on Quality of the Living Environment (Bkl).

[103] Board of Government Advisors, *(X)XL cluttering - Lower numbers, more compact, more concentrated, more multifunctional*, The Hague 2019.

The Wadden Sea

The Wadden Sea is a unique, open intertidal area that extends along the coastline of the Netherlands, Germany and Denmark. In 2009, the Dutch and German part of the Wadden Sea was entered in the register of world Heritage Sites as Natural World Heritage by UNESCO, because of its unique geological and ecological values (Outstanding Universal Value). The Danish part of the Wadden Sea was added in 2014. This registration makes the Wadden Sea, as an example of natural UNESCO World Heritage, the largest intertidal area in the world. Since 1978, the three Wadden Sea countries have been working to protect the Wadden Sea as an area of nature within the Trilateral Wadden Sea Cooperation. Details were laid down in 1982 and reconfirmed in 2010, in the Joint Declaration on the Protection of the Wadden.

The primary objective for the Wadden Sea: 'The long-term protection and development of the Wadden Sea as an area of nature and retention of the unique open landscape' remains fully in force to this day. The protection regime is contained in the Nature Conservation Act and in the Decree on the Quality of the Living Environment. National and regional authorities are working together on a futureproof development for the Wadden Sea, via the Agenda for the Wadden Area 2050[104].

Achieving the primary objective for the Wadden Sea will also impact on the Wadden area as a whole and in the same way, effects of developments in the Wadden area can influence the possibility of achieving the targets for the Wadden Sea. In that sense, the targets for the Wadden area are also relevant in as much as they relate to achieving the primary target for the Wadden Sea. The primary target for the Wadden area is that by 2050 it is a safe, vital and resilient area. Safe because we have anticipated the consequences of climate change and sea level rise in time. Vital because housing, employment, education and healthcare continue to be possible on the islands and along the coastline, and because economic sectors excel in the context of the World Heritage that is the Wadden Sea. Resilient because robust nature and the world-class landscape can cope with the effects of climate change, sustainable use and new developments.[105]

Southwestern Delta

Thanks to the Delta works flood defences, the Southwestern Delta is one of the most secure deltas in the world. There are, however, also downsides. The construction of dams and storm surge barriers to guarantee safety has led to a reduction in water quality and has harmed the area's unique estuarian nature. Although the Western Scheldt has retained its character as an estuary, nature and water quality here are under pressure from dyke construction, the creation of polders, the widening of navigation channels, sand dredging and wastewater discharge. The deteriorated water and nature quality are also slowing down economic development in the area. The central task for the Southwestern Delta is therefore to bring about the sustainable recovery of the balance between security, economy and ecology. The perspective of integrated area development is the primary objective, based on the establishment of improved links between water and spatial planning.

Regional government, various stakeholders and national government are jointly preparing the Area Agenda for the Southwestern Delta, so that they can combine the target situations and tasks for water safety, freshwater and spatial adaptation (Delta Programme Approach[106]), water quality and nature (Programme Approach for Large Waters[107]) and economy, wherever possible.

[104] Agenda for the Wadden Area 2050, see https://agendavoorhetwaddengebied2050.nl/

[105] Letter from the Minister of Infrastructure and Water Management & of Agriculture, Nature and Food Quality on water policy, Parliamentary Paper number still to be added, The Hague 2020.

[106] Ministry of Infrastructure and the Environment & Ministry of Economic Affairs, *Delta Programme 2019: Continue to work on the delta: Adapting the Netherlands to climate change, in time.* The Hague 2019.

[107] Letter from the Minister of Infrastructure and Water Management & Agriculture, Nature and Food Quality on water policy, Parliamentary Paper number still to be added, The Hague 2019.

A coherent and broad match will be sought with such themes as energy transition, climate adaptation, sustainability, circular economy and healthcare. The eventual result will be an integrated long-term perspective for the development of the Southwestern Delta, including a knowledge and innovation programme and initial Implementation Agenda.

The Green Heart

The presence of green space in the Green Heart, as a counterpoint to the ring of urban development, is essential for the quality of life and establishment climate of the entire Randstad conurbation.

The open character represents an essential contrast with the large cities that surround it. The Green Heart is under pressure from all sides: the demand for urbanisation by the larger cities, the necessity of rewetting the area to prevent soil subsidence, the development towards cyclic agriculture and of nature, and the generation of renewable energy are constantly pressurising the landscape qualities and biodiversity.

The claims on the landscape have revealed issues concerning the preservation of existing identities and the creation of new identities. The task in this area is to create space for the necessary transition, in a way that does not conflict with the landscape and the identity of the Green Heart in its urban context. The Green Heart is a varied area, that can be divided into different zones. Some of these zones offer opportunities for new developments, while others must focus on the preservation of the landscape.

National government is working to protect the landscape qualities of the Green Heart in a sustainable manner, but still recognises opportunities for developments, taking account of the requirements imposed by the sustainability goals. Based on interadministrative cooperation with the provinces, municipalities and water authorities, the aim is to develop futureproof and course-setting agreements so that the various tasks can be achieved in a manner that is both coherent and landscape inclusive.

Veluwe

The landscape of the Veluwe, the Hoge Veluwe National Park and the Veluwezoom is the largest lowland area of nature in Northwestern Europe, offering woodland, heathland, sand plains, country estates and a unique wildlife experience. The area comprises two national parks and four Natura 2000 areas. The landscape contains much visible and tangible evidence of historical human intervention, such as burial mounds, Celtic fields from the period when the Veluwe was an agricultural centre, the country estate zone and the building of the former broadcasting station Radio Kootwijk. Over the past few years, the leisure-related economy has expanded considerably; the Veluwe is important for the tourist sector for the whole of the Netherlands. The value of the Veluwe in terms of ecology, economy and experience is however under pressure. The task lies in reinforcing the core qualities of this valuable area, in balance with futureproof use, while adding new qualities; spatial quality can be achieved through transformation into climate-resilient landscapes.

IJsselmeer area

The lakes and water structures of the IJsselmeer area are of huge value to the Netherlands. The area is rich in nature and cultural heritage. It also fulfils a vital function in terms of food production. It is not without reason that the area is known as the Blue Heart of the Netherlands. National and regional government are working together on the futureproof development of the IJsselmeer via the IJsselmeer Area Agenda 2050[108] in which they have formulated three core ambitions: the IJsselmeer area firstly as a landscape of world class, secondly as a futureproof water and ecosystem and thirdly as an area of vital economic importance to the Netherlands.

[108] IJsselmeer Area Agenda 2050, see https://www.agendaijsselmeergebied2050.nl/

The IJsselmeer Area Agenda also represents the starting point for strengthening governance. The approach is guaranteed in the IJsselmeer Area Administrative Platform *(Bestuurlijk Platform IJsselmeergebied BPIJ)* and the Regional Consultative Body for the IJsselmeer Area *(Regionaal Overlegorgaan IJsselmeergebied ROIJ)*

National Parks
National and regional government are working together to strengthen national parks as icons for synergy between nature, landscape, sustainable recreation and tourism, agriculture, energy and other spatial tasks. This requires a leap in quality, whereby the initiative lies with the areas themselves. One objective is broadening the scale of the area approach. In the majority of today's National Parks, only the core natural values are bounded. By broadening the scale at which the combination of spatial tasks is considered, the vulnerable core natural values can be better protected. This will also have a positive influence on the (nature) quality of the environment. This process of enlargement will create space for improving zoning, and establishing a transition to more human activity, by introducing cohesion between the landscape, the landscape ecology, (including the water system) and the cultural history of an area, thereby creating greater unity and identity.

Room to experiment is a constant and essential element of the approach. In this way, the National Parks offer a distinctive, appealing and uniform structure, within which a variety of functions can be achieved as a combination of their quality, in line with the major tasks facing the Netherlands.

House building and landscape
Urbanisation goes beyond simply house building and infrastructure. National government is aiming to concentrate the building of homes, businesses and facilities wherever possible in inner city areas; only then will the move be made to undertaking developments at the periphery of urban areas. The essential feature in every case is for these developments to take account of spatial and landscape quality. At the same time, there is a clear need to bring nature and biodiversity closer to people. For example, green zones in cities and carefully designed outlined urban districts can contribute to a more varied and richer living and working climate. Detailed agreements will be reached on these elements, in the urbanisation strategies.

The house building task and the woodland strategy[109] represent a common opportunity. Large-scale reafforestation close to the cities will help capture CO_2 and expand the production of renewable construction material, while offering greater opportunities for recreational use to individual citizens. National government is investigating the potential contribution of large-scale building in timber.

[109] Letter from the Minister of Agriculture, Nature and Food Quality in respect of the Woodland strategy, Parliamentary Papers 33576 no. 186, The Hague 2020

National choices for the futureproof development of rural areas

Soil subsidence in peat pastureland areas (Policy choice 4.1)
National government is calling upon provinces to draw up regional peat pastureland strategies

Nature on land and water (Policy choice 4.2)
Protecting and reinforcing biodiversity (Netherland Nature Network, large waters)

Agricultural and horticultural areas (Policy choice 4.3)
Enabling a sustainable and vital agriculture and food system, based on cycles and nature inclusivity

Valuable landscapes and national parks (Policy choice 4.4)
Strengthening and protecting unique landscape qualities

Urbanised areas and infrastructure

5. Cooperation and practical implementation

The ambitions and challenges in the physical living environment are varied, and affect us all. They demand a coherent approach and new methods of cooperation, with broad societal involvement, and contributions from government, citizens and businesses, civil society organisations and centres of knowledge. Citizens and businesses often want to make an active contribution to improving the living environment and making the way they live and work more sustainable. That requires a government that guides, cooperates and facilitates. A government that assumes the strength and dynamism of society, and that encourages social innovation. National government will take the lead and make choices that set the course for this joint task. Together with municipalities, provinces and society, national government wishes to structure the space throughout the Netherlands in the most effective and sustainable manner possible.

5.1 How can we work together?

At various locations, we are working on actual projects and programmes in the physical living environment. The structure of the Netherlands is never finished, and is constantly changing in response to newly emerging tasks. The Netherlands is, as it were, in a constant state of renovation. Whether with regard to buildings, infrastructure or nature, the people make this country, and constantly adapt it to satisfy the latest wishes and requirements imposed by society and the living environment.

Governments formulate policy ambitions and policy targets which they link to laws, rules and administrative agreements, and to practical projects and programmes. Increasingly, instead of tackling a single task, we tackle several tasks in combination, based on a shared vision. Just that approach has become increasingly necessary, since in many cases the tasks in the physical living environment are heavily interwoven. In line with the philosophy behind the Environmental and Planning Act, the National Strategy on Spatial Planning and the Environment (NOVI) embraces that approach which has intensified over the past few years, and represents the next step along that development pathway.

The motto is: 'You may be faster alone, but together you will get further!'. With these principles in mind, national, provincial and municipal governments, with others, launched the Interadministrative Programme *(Interbestuurlijk Programma – IBP)* in 2018, in which ambitions are formulated for jointly tackling a number of urgent societal tasks, including those in the physical living environment. National government has adopted a role in designing this cooperation, not from a hierarchical position but on the basis of equal partnership. Each party contributes to the societal task according to its own expertise, role, position and responsibilities. This is an approach that relates to the challenges of the modern era.

Cooperation between levels (Multi-level governance)

National government has a role in the process of cooperation within the framework provided by the NOVI. The various Ministries shape policy according to their own tasks and responsibilities. Increasingly, the regional level is the most relevant scale for tackling tasks for the physical living environment and making coherent choices. According to the guiding philosophy of the Environment and Planning Act, general care for the physical living environment is primarily a task for municipalities. The water authorities have functional responsibility for water management, the provinces have a clear statutory task and responsibility for the physical living environment. Given the responsibilities of national government at national level, what is called for is cooperation between the regional and national authorities in the form of combining efforts in the manner that best suits the task in question.

In the Delta Programme *(Deltaprogramma)*[110],for example, a similar approach has been followed by national government, provinces, municipalities and water authorities, with clear contributions from civil society organisations, centres of knowledge, individual citizens and business. At national level, it is vital that the Ministries cooperate more effectively, both in The Hague and in the regions. Moreover, many tasks also include an international component that demands cooperation with neighbouring countries or partly on a European or even global scale. As with the agreements reached in Paris and New York, EU policy has demonstrated that this is most emphatically the case with regard to tasks relating to the environment, sustainability and climate. The same also applies to tasks relating to the large rivers, air transport and shipping, among others.
With that in mind, national government is fulfilling its role in international consultation and in planning international frameworks, and is assisting municipalities and provinces in international consultations with the districts or Federal Länder of Belgium and Germany respectively, in relation to joint tasks in the physical living environment.

A coherent, area-specific and more integrated work approach is becoming increasingly common practice. Experience of that approach has been acquired over the past few years, for example with the Room for the River *(Ruimte voor de Rivier)* programme, the National-Regional Programme Amsterdam-Almere-Markermeer *(Rijk-Regioprogramma Amsterdam-Almere-Markermeer - RRAAM)* and a series of other projects including the A2 Maastricht traverse and the key projects from other spatial policy memorandums. Various programmes that operate according to this policy are currently underway, including the Interadministrative Programme Vital Rural Areas *(Interbestuurlijk programma Vitaal Platteland - IBP-VP)*, the National Programme Rotterdam-Zuid *(Nationaal Programma Rotterdam-Zuid - NPRZ)*, the National Programme for Groningen *(Nationaal Programma Groningen)*, and the living deals and the accessibility programmes (for the three metropolitan regions Amsterdam, Utrecht and Rotterdam The Hague). In other words, a solid foundation in existing policy and current practical implementation programmes is in place, as a basis for future development. Our aim with the NOVI is to reinforce, to combine and to broaden these work approaches.

Principles for cooperation

The NOVI employs the following principles for cooperation:

1. We work as one government, together with society

The NOVI ties in national government and brings the Netherlands together. Wherever possible, we will work together on practical implementation, and will fairly share the benefits and the burdens. Governments together bear responsibility for the living environment. Each level of government as well as individual citizens and businesses make a contribution from their own responsibility and possibilities. National government is thereby guided by the national interests. This brings together government authorities and stakeholders, and ties in with the strength and dynamism of society.

2. We focus on the task(s)

Tasks for the living environment are not restricted by administrative boundaries, and apply right across scales of action and policy fields. A task-based approach calls for combined action and the utilisation/or combination of the resources and networks available, and all the relevant societal initiatives. This approach increases the possibilities for combining functions. Both national and regional authorities can take the initiative for the tasks described in the NOVI, for launching or combining new programmes, and inviting each other to join in wherever valuable and necessary. National government will adopt an open mind, aimed at strengthening cooperation.

3. Our work is area-specific

The tasks become manifest in different ways, in different areas. As a consequence, the choices to be made are often specific to a particular area. An area-specific approach helps to make choices, in partnership with all stakeholders, while focusing on the characteristics[111] of the area. In the approach and its elaboration, public and private parties and the initiative takers most relevant for the area in question are directly involved via representation of their interests. We are conscious of those parties that are not well represented.

[110] Ministry of Infrastructure and the Environment & Ministry of Economic Affairs, *Delta Programme 2018: Working towards a safe and sustainable delta (Doorwerken aan een duurzame en veilige delta).* The Hague 2018

[111] Nature and environmental qualities, landscape, cultural heritage, commercial activity, population composition, societal initiatives present

An essential foundation stone for cooperation is the combined analysis of the area quality and the design of arrangements and projects. The practical elaboration in the individual areas may differ in scale, scope, approach and in the degree of national government involvement.

4. We work constantly on the tasks according to an adaptive approach

The targets and ambitions laid down in the NOVI can clearly not be achieved all at once. Understanding of the measures most applicable to the tasks is subject to change. The tasks themselves can change, too. What is needed is a form of practical implementation that is adaptive and flexible, and which focuses on developing new, appropriate forms of approach, and that represents an open invitation to society to fully utilise the innovative capacity of all parties. With that in mind, an adaptive approach is employed, that offers space to adjust the targets and the approach, in the interim.

Participation

Broad societal involvement by individual citizens, businesses, civil society organisations and initiators is an essential precondition for the success of the combined ambitions. As a consequence, a wide range of perspectives, initiatives, knowledge and creativity emerge, thereby increasing the quality of the solutions, and mobilising collective action and combined intelligence.

Participation demands a tailor-made approach to each task, area and administrative situation. The challenge lies in combining the tasks and the approach with the scale that directly affects most people and at which most people feel involved and at which they have or want to have clear perspectives for taking action.

Essential points to be considered in achieving good participation are:

- be clear on the possible contributions (information, consultation, advice, cooperation, joint decision making, right to challenge) and what is done with them;
- offer clear and understandable information, in good time[112];
- ensure the involvement of (representatives of) key stakeholders[113];
- be aware of what people are thinking (for example by means of lifestyle surveys)[114].

Role of national government

The work approach just described calls for a clear understanding of the role of and for national government. That role can vary, depending on the task, the area, the context and the desired interaction with other levels of government and society as a whole. We have identified three distinct roles for national government in the practical implementation of the NOVI.[115]

Cooperation

Municipalities, water authorities and provinces bear primary responsibility for the living environment. To protect the national interests, national government focuses primarily on a collaborative role, in partnership with other levels of government – also across borders - and society in general. On the one hand by establishing alliances (director and play maker) and on the other hand as an equal partner.

Facilitation

National government creates the necessary space for and seeks to join initiatives from others. Where necessary and desirable, national government helps move those initiatives forward, and encourages new forms of cooperation, innovation, knowledge development and transition. National government has a role as unifier, mediator, expert, knowledge broker and counsellor. This can be achieved for example by organising area dialogues, offering design workshops[116], sharing good practices, providing financing in the form of stimulation grants and offering space for experimentation and innovation. The Crisis and Recovery Act *(Crisis- en Herstelwet)* which came into effect in 2010 is just one example.

[112] In accordance with the Treaty of Aarhus

[113] A useful tool is carrying out a demographic scan to identify affected parties.

[114] Consultation body Physical living environment, Insights into public participation and consultation in generating national vision (Overlegorgaan fysieke leefomgeving, Inzichten over burgerparticpatie bij nationale visievorming). The Hague 2019

[115] Inspired by the NOSO-Essay Effective Management with Multi-level Governance (Effectief Sturen met Multi-level Governance), The Hague 2018

[116] One example is the publication of the Manifesto 'Pioneering work on societal tasks' ('Pionieren aan de maatschappelijke opgaven') from the Stimulation Fund for creative industry (Stimuleringsfonds creatieve industrie), Rotterdam 2018. According to a 10-point plan, illustrated with examples from the City Labs, this manifesto clarifies the value of City Labs for the NOVI

Directing and setting out frameworks

If the national interest or specific task cannot only be effectively tackled through cooperation and facilitation, then national government can take on a more managerial role, in setting out the necessary frameworks. In this way, national government further implements its role as director. National government aims to achieve the national interests and targets by:

- realising projects based on its own responsibilities;
- designating or excluding areas for particular purposes (for example in the vicinity of Defence sites, infrastructure, Natura 2000 areas and national parks), in accordance with national and international frameworks;
- imposing restrictions by setting standards and threshold values, in the form of requirements for environmental safety and standards for noise, water quality, environmental safety and air quality;
- using instructional rules to encourage or discourage desirable or less desirable developments.
  National government therefore creates space and sets the course, cooperates and facilitates where possible and directs where necessary.
  National government operates the consideration principle, preferred order and strategies from the NOVI.

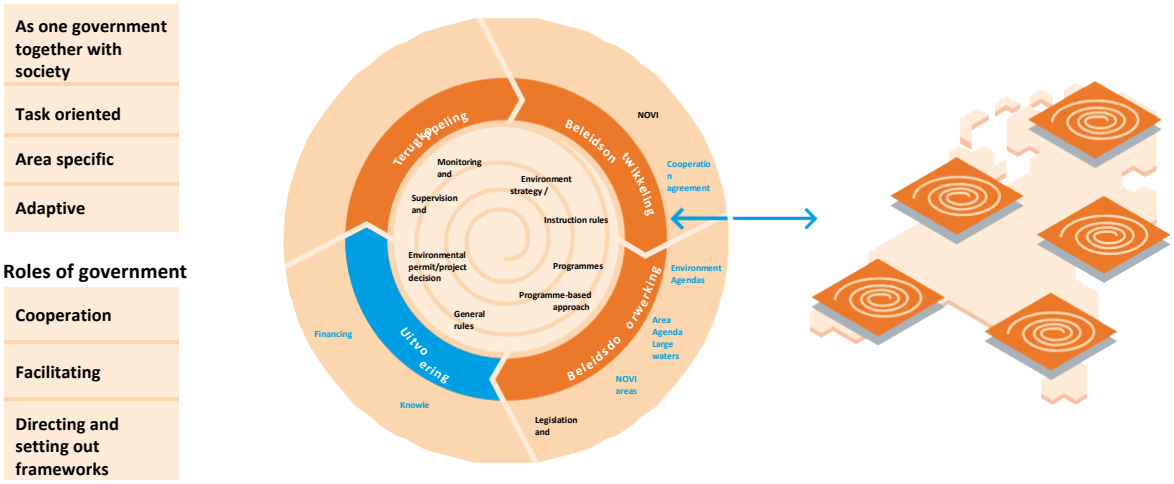


Figure: Cooperation and practical implementation with the NOVI

5.2 How do we intend to elaborate and implement the NOVI in practice?

The Environment and Planning Act provides the instruments according to which the NOVI can be developed and implemented in practice. This – together with other practical resources – is reflected in the figure showing the NOVI Policy Cycle. In the NOVI Implementation agenda *(Uitvoeringsagenda NOVI)*, in outline, we elaborate how the strategic policy choices from the strategy on spatial planning and the environment will be tackled in practice, thereby ensuring clarity among others on the deployment of legal, financial and other instruments.

With regard to the national policy for the physical living environment, a policy cycle will be completed, according to which national government will determine whether policy adjustments are necessary. Where can the work be undertaken in a more integrated or effective manner? Where are there negative impacts? Where is further adjustment necessary, also at programme level? This adaptive, cyclic approach relies on effective interaction between the various elements of the policy cycle. That in turn calls for sound process management, both with regard to the policy cycle itself and in respect of interdepartmental harmonisation and consultation.

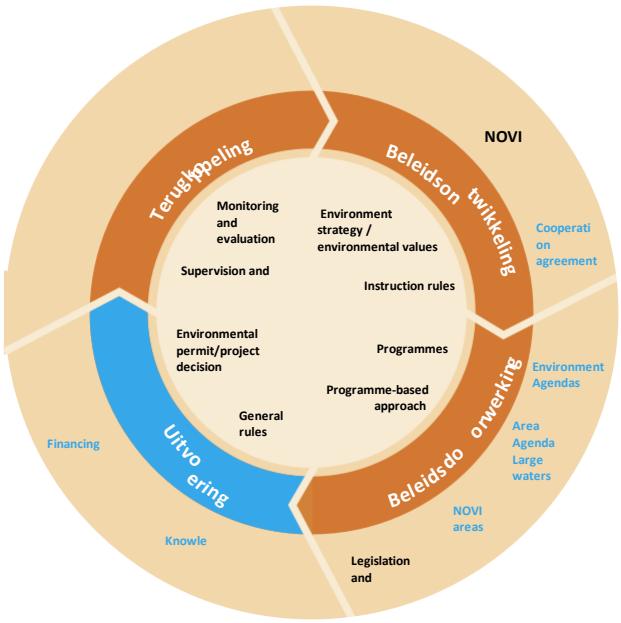


Figure: The NOVI policy cycle (with regard to the Environment and Planning Act) for national government with instruments (black) and additional resources (blue).

Implementation Agenda

To provide practical implementation for the course-setting statements and policy choices referred to above, this NOVI is published together with an Implementation Agenda. This agenda outlines how national interests and policy choices with regard to priorities have been coherently elaborated and guaranteed. The NOVI and this Implementation Agenda also set the course for local choices, based on the instruments from the Environment and Planning Act and the course-setting frameworks contained in that Act. The NOVI also explains that if additional guidance is necessary in relation to the elaboration and implementation of a policy choice, then the preference is for targeted cooperation and facilitation. Legislation and regulations will only be used to provide additional control if effective and necessary. In the Implementation Agenda we also indicate for each priority the arrangement and mix of instruments that will be used for elaborating and implementing policy choices. The Agenda also clarifies the role of national government and its agencies (Rijkswaterstaat, the Government Real Estate Agency, the Netherlands Enterprise Agency, the National Forestry Service and the Cultural Heritage Agency). The affected Ministers bear joint responsibility for this Implementation Agenda. The Implementation Agenda is a dynamic document to which new elements can constantly be added, while at the same time working on implementation. The area-specific approach will be implemented on an interadministrative level, in Area Agendas, programmes and projects.

Quadrant 1: Policy development

NOVI

The NOVI describes the current status and the desired development of the physical living environment, states how national interests are guaranteed and sets the course for priority tasks. The NOVI also contains the outlines on practical implementation. The outcomes of the SEA *(planMER)* drawn up for the NOVI provide an insight into the uncertainties, the opportunities and the risks of the various tasks and represent the '0 measurement' that is essential for the periodic monitoring of the specification and realisation of the tasks. The NOVI is an element of a permanent cyclic process. If necessary, the NOVI can be updated annually, not necessarily to the same extent each year, but on each occasion an assessment will be made of whether new tasks have emerged that require an integrated approach. On the basis of the monitoring (every two years) or the evaluation (every four years), more fundamental changes can be made. The Implementation Agenda, cooperation agreements and Regional Agendas (which are discussed later in this chapter) guarantee coherence, instrumentation and programming for the practical implementation of the policy contained in the NOVI and provincial and municipal environmental strategies.

Cooperation agreements in the NOVI

The NOVI is a national vision that is inherently binding for national government, while the challenges in the physical living environment in fact call for a broadly supported effort on the part of all levels of government. For that reason, we have established Cooperation Agreements with the Association of Netherlands Municipalities (VNG), the Association of Provincial Authorities (IPO) and the Union of Water Authorities *(Unie van Waterschappen)* about the way in which government in the region will work together, and will work together as a single government on the urgent tasks and transitions needed in the living environment.

The basic underlying principle will be the dedicated efforts to fulfil the ambitions, objectives and policy choices from the NOVI. National, provincial and municipal governments and the water authorities are working towards these common tasks assisted by the consideration principles, preferred orders and strategies outlined in the NOVI. The various government bodies are also assessing whether and how they can deploy these instruments efficiently and coherently, for the urgent tasks.

Legislation and regulations

The Environment and Planning Act is not merely a summing up of an environmental vision and strategy. Instruction rules are another instrument for the elaboration of national government policy. These are used, wherever necessary, to provide the legal underpinning for the implementation of national government policy. The instruction rules from national government are contained in the Quality of the Living Environment Decree *(Besluit kwaliteit leefomgeving - Bkl)*. Before the Environment and Planning Act comes into effect, the General Rules and the Regulations on Spatial Planning Decree *(Besluit and Regeling algemene regels ruimtelijke ordening - Barro and Rarro)* are applied, pursuant to the Spatial Planning Act *(Wet ruimtelijke ordening – Wro)*. Consideration will be given to the desirability of adjusting and supplementing specific points in the instructional rules, in accordance with the NOVI.

Quadrant 2: Policy elaboration

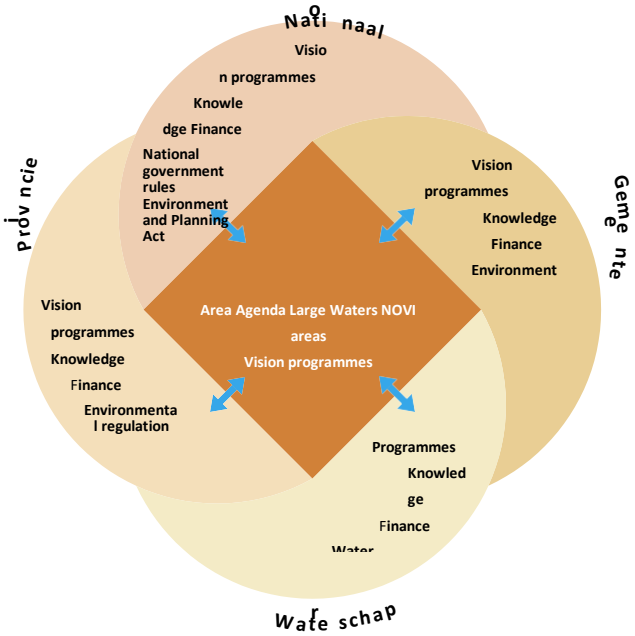


Figure: The national, provincial and municipal governments are working together on joint tasks, each contributing their own instruments.

Programmes

In the elaboration of the NOVI in policy, programmes play an important role (see explanatory notes to the Environment and Planning Act pages 114 – 123). A programme contains the elaboration of the policy to be implemented for the development, use, management, protection or preservation of one or more elements of the physical living environment and measures aimed at achieving environmental values or other targets for the physical living environment (as specified in the NOVI) and to continue making a permanent contribution to achieving those values or goals. Governments can also take the joint initiative for an interadministrative programme.

The programmes that emerge from the NOVI can be either be focused on specific themes or a particular area. The same applies to programmes that do not emerge – or do not emerge directly – from the NOVI, but which are related. For programmes emerging from the NOVI, the affected Ministers share joint responsibility. The Ministry with initial responsibility is the driving force. The NOVI does not change the tasks and responsibilities of the various Ministers and government members. The programme approach and practical implementation will be based on the opportunities and risks identified in the Strategic Environment Assessment (SEA).

Relevance of transition law and transitional provisions from the Environment and Planning Act/ Introduction Act

The Implementation Agenda of the NOVI announces new programmes. Other policy documents already exist, that were drawn up subject to current regulations, such as structural visions, policy documents and plans. The Environment and Planning Act identifies four programme types: voluntary, compulsory and conditional programmes and programmes subject to a programme approach. The Introduction Act for the Environment and Planning Act includes the transitional law for programmes. This differs for the different types of programme.

Article 4.11 of the Introduction Act states that a non-compulsory programme that was adopted on the basis of old law will be considered equivalent to a programme as intended in article 3.4 of the Environment and Planning Act, if three conditions are met: the programme, the plan or the structural vision must have been signed on or after 23 March 2016 and must satisfy the substantive and procedural requirements contained in the Environment and Planning Act.

If a structural vision, policy document or plan satisfies the conditions for a programme, even after the Environment and Planning Act comes into effect, it will retain its legal status. If a structural vision, policy document or plan figure does not satisfy the conditions for a programme according to the Environment and Planning Act, then no transitional law will apply. These are policy documents that are self-binding and retain their policy effect, unless otherwise specified in the NOVI. In the elaboration of the national interests, all strategic and relevant elements are described, or reference is made to the policy documents and letters containing those elements.

Compulsory programmes according to European law continue to apply under the Environment and Planning Act: see for example articles 4.56 and 4.58 of the Introduction Act, for the National Water Plan 2016-2021 and the National Water Management Plan 2016-2021.

Programmes with a programme approach, such as the former Nitrogen Prevention Programme (PAS) and the National Cooperation Programme on Air Quality (NSL) will not be retained under the Environment and Planning Act[117]. Once the Environment and Planning Act comes into effect, the local administrative bodies will be responsible for adopting a programme whenever environmental values are exceeded for the quality of outside air. The transitional law for the PAS is now regulated within the Supplementary Act Nature and Environment and Planning Act *(Aanvullingsbesluit Natuur Omgevingswet)* and the Supplementary Nature Decree *(Aanvullingsbesluit Natuur).*

[117] This has been replaced by the Clean Air Agreement (SLA).

Environment Agendas

The tasks and priorities described in this NOVI are complex and far reaching. The aim of the Environment Agenda is to ensure that all levels of government work together as a single government in implementing the shared area-specific ambitions and tasks as identified in the visions and programmes drawn up by national, provincial and municipal governments and water authorities. These are coherent, area-specific tasks in the physical living environment which require multiple parties working together on their implementation. They will include (initiatives from) society and pick up on relevant signals. In that sense, the Environment Agendas form a link between environmental visions and the various often sectoral or theme-based implementation programmes. The substantive tasks will be decisive in determining the interadministrative approach. Administrative boundaries may not form any obstacle to the scope of area-specific tasks. The subnational scale to which these agendas apply makes it possible to link municipal and provincial visions to the national vision and the implementation of area-specific programmes at the most appropriate scale.

Cross-border tasks between provinces and with neighbouring countries will be explicitly integrated in the Environment Agendas. In this way, we will create links between these regions and guarantee a coherent approach at national scale.

In the Environment Agendas, all levels of government will promote multiyear robust partnership. Governments will work together on the basis of equality, each according to its own role and responsibility/authority. In this way, they will fulfil complex and coherent tasks, arrive at joint decisions and lay the foundations for mutually harmonised investments, as a single government, together with society. We as a society will then be able to work more effectively and efficiently, to boost the implementation capacity. For the area-specific implementation of the NOVI, Environment Agendas will be drawn up for five parts of the country North (Groningen, Friesland, Drenthe), East (Gelderland, Overijssel), South (Brabant, Limburg), South-West (Zeeland, Zuid-Holland) and North West (Noord-Holland, Flevoland, Utrecht).

Where the Environment Agendas form the integration framework for physical tasks on shore, the Area Agendas Large Waters focus on the IJsselmeer, the Wadden Sea and the Southwestern Delta. A North Sea 2022-2027 Programme and an Integrated River Management Programme will also be prepared. Wherever there are interfaces or cross-border tasks between these waters and land, they can also be part of the Environment Agenda. The Area Agendas Large Waters are equivalent to the Environment Agendas. It is essential that they be carefully harmonised.

Relationship to other programmes

The Environment Agendas provide clarity and identify the shared task as well as identifying the area-specific programmes already up and running in respect of these tasks, such as the Interadministrative Programme Vital Rural Areas, the ONS Landschap Programme, the Multiyear Infrastructure, Mobility and Transport programme (MIRT), the Housing Deals with regional urbanisation strategies, the National Programme for Regional Energy Strategy, The Energy Main Structure Programme and other approaches such as Region Deals and the Programme for Natural Gas-free Districts. If national government designates NOVI areas, then all resultant national-regional programmes will automatically become part of the Environment Agenda.
For each part of the country, separate agreements will be reached between national and regional governments.

Approach

Step by step, we are working towards wide-ranging, living Environment Agenda that offer a multiyear structure for monitoring and as necessary adjusting the implementation process, as part of the NOVI cycle. In each part of the country, government will start to tackle a number of area-specific tasks, by developing a shared plan perspective and reaching administrative agreements on a common approach. They will report on progress each year. Every two years, those same authorities will then assess whether new area-specific tasks need to be added. In this way, work on building the process and the content will go hand in hand, creating a solid basis for a meaningful Environment Agenda that offers sufficient guidance.

Financing and policy instruments

The participating parties will deploy their authorities, policy instruments, resources, knowledge and expertise in such a way that they contribute to realising the shared tasks. This may include investigating and possibly reaching agreements on the opportunities for combining and re-prioritising budgets. In this way, they can achieve the best possible yield according to a common long-term perspective. Wherever relevant, for each of these tasks, an investment strategy can be formulated that brings together the contributions from the various stakeholders in the form of a so-called Regional Investment Agenda (these RIAs will then be linked to the Environment Agendas at the initiative of the public-private NOVI alliance). Existing investment financing, such as the Infrastructure Fund (due to become the Mobility Fund), the Delta Fund and the Fund for encouraging house building *(Fonds woningsbouwimpuls)* will remain essential in financing more sectoral tasks. The way in which nationally owned real estate (nationally owned buildings and land) can best be used will also be investigated.

Knowledge and learning curve

The Environment Agendas will require government to adopt a new work approach, according to a new control philosophy, with major transitions as the most important tasks. Over the coming period, all levels of government will need to learn these new work approaches, in collaboration with civil society organisations, businesses and individual citizens. Designing long-term cooperation between national and regional government in relation to the physical living environment is a joint process that will require ongoing learning and knowledge sharing within and between the various parts of the country, and at ministerial level. The annual NOVI conference will be an important learning moment. In the same way, knowledge and learning are essential elements of the Environment Agendas. A living agenda demands the constant contribution of sufficient and accurate knowledge. This includes a more in-depth understanding of the status of components of the living environment, of the areas and of research into shared knowledge questions. This will be achieved among others with the Netherlands Environmental Assessment Agency (PBL), the National Institute for Public Health and the Environment (RIVM), the Cultural Heritage Agency (RCE) and the Board of Government Advisors (CRa).

Governance

Decision making on the Environment Agenda will take place during an annual Administrative Consultation about the Living Environment. This consultation will be attended by administrative representatives from the physical domain at national, provincial, municipal and water authority level. As appropriate, they will involve their parliamentary representatives in the process of adoption and progress monitoring. The relevant Ministers will inform the House of Representatives each year, on progress. This approach will guarantee democratic legitimacy.

Participation

At all stages, civil society organisations, businesses, individual citizens and centres of knowledge will be involved in the creation of environmental visions and the design of programmes and projects. Their additional involvement in the establishment of the Environment Agenda will require a custom approach for each partner and part of the country and will be redetermined in each phase.

We will guarantee good information provision about the process, progress and (interim) results of the Environment Agenda. We will also identify the opportunities for involvement and participation. At the same time, we will remain open to requests for government participation in initiatives from society. We aim to establish alliances with civil society organisations and businesses, in which we will work together on implementing the adaptive (sub)programmes, themselves part of the Environment Agendas.

Within the Implementation Agenda accompanying this NOVI, we will elaborate the approach and determine the status of the various Environment Agendas, for each part of the country.

NOVI areas

A number of different effective programmes are already in place, for arriving at sound choices and implementing specific policies. These include the National Programme for Groningen, the accessibility programmes for the Metropolitan Regions Amsterdam, Utrecht and Rotterdam The Hague, the Housing Deals and the Interadministrative Programme for Vital Rural Areas.
For a number of extensive transitions essential for the future layout of the Netherlands, the Cabinet plans to take positive steps. For that reason, the so-called NOVI areas were introduced in the draft NOVI.

The criteria employed in designating a limited number of NOVI areas were:

- they combine major integrated tasks and transitions essential for the Netherlands, requiring cooperation between national and regional government, and thinking outside existing frameworks;
- the designation creates added value in respect of the effort or programmes already being jointly tackled by national and regional government, which wherever possible simplify the process, and do not result in unnecessary duplications;
- there are clear links to (or prospects of) actual implementation.

There are a number of areas on which attention is focused:

- a geographical balance across the country;
- attention for all NOVI priorities;
- attention for broad-ranging prosperity;
- long-term involvement.

The purpose of a NOVI area is therefore to tackle and contribute to the success of (parts of) large-scale integrated (transition) tasks in the physical living environment, that are essential to the area in question and to the Netherlands as a whole, whereby national interests are self-evident in terms of urbanisation, sustainable economy, energy/climate and/or rural areas. Moreover, it goes without saying that once a NOVI area is designated, it will be an integral part of the Environment Agenda that is drawn up for the part of the country in which the area is located. As a consequence, in conjunction with already active programmes, this and the other area plans still to be developed will result in an approach to implementation by national and regional government that ties in with the tasks identified in the NOVI.

Provisional NOVI areas

On the basis of the criteria and areas for attention referred to above, and the examples outlined in the draft NOVI and in the Parliamentary Letter about further choices in the framework of the NOVI, we have joined with other levels of government in identifying those NOVI areas that require targeted additional support for existing programmes, in order to fulfil our ambition without unnecessary duplication. We have identified eight preliminary NOVI areas for which an action plan will be drawn up, in consultation with the regions.
On this basis, we will make our definitive choice for the designation of NOVI areas. The plans will be presented at the first NOVI conference. The preliminary NOVI areas are:

1. Transitions in port areas in the Rotterdam and Amsterdam region

These are essential for the economic strength of our two largest cities and for the shift to a non-fossil-based, circular economy, and the physical space required. The focus of the mega operations in these two areas are different, but the interests of both areas and the success of the transitions (and transformations) are both considerable.

2. Transitions in rural areas: De Peel and the Green Heart

Intensive livestock farming in De Peel and the surrounding area, is on a scale unmatched anywhere in the world. As well as creating huge challenges, a transition is also urgently needed towards greater sustainability, stronger nature, improved environment, better air quality, better quality of life, less nitrogen, good accessibility, improved animal welfare and better health for all residents of Northeast Brabant and Northern and Central Limburg. There is a similar 'rural' task in peat pastureland areas in general and in the Green Heart in particular. The task in these areas focuses on reducing soil subsidence, limiting CO_2 emissions and adapting water management, improving the urban-rural relationship, managing new building, national heritage and accessibility.

These areas are also experiencing huge pressure on nature, landscape and infrastructure, as reflected in existing and new building plans for business parks, warehouses and houses.

3. energy and climate transition in relation to urbanisation: Groningen and the Zwolle region
The spatial-physical tasks facing Groningen in the future are of major national importance. Designation as a preliminary NOVI area recognises the huge task that has emerged in relation to the ending of natural gas production, also with regard to the physical living environment and in relation to the relevant long-term vision.

The Zwolle region faces a large-scale and dynamic urbanisation task that must be dealt with in relation to the regional water problem and the task in respect of climate (adaptation). Moreover, the scale of this NOVI area can prove a meaningful addition to the already signed Region Deal for the Zwolle region, although the two elements will complement one another.

4. Transitions in a cross-border context: Southern Limburg and the Zeeland ports / Zeeland-Flemish canal zone

Southern Limburg faces socioeconomic and physical tasks that are relevant in a unique, cross-border environment (with the regions around Aachen in Germany, Liège in Walloon Belgium and Hasselt in Flanders). The tasks that relate to accessibility (three-country train), the circular economy (Chemelot) and falling population numbers (former mining district) are all considerable and all three demand international consultation and harmonisation. Central government plays an essential role.

In the ports of Flushing and Terneuzen in Zeeland, the cross-border element is emphatically present. Indeed: the local port authorities have representatives from both sides of the border. Even the first step requires national government support. The new lock is one element but other aspects are both

Instruments

A series of different instruments can be linked to the NOVI. Which of those instruments will actually be employed may differ from area to area, depending on the precise nature of the task and local needs. Internal consultation and harmonisation with the efforts already undertaken by national and local government are relevant in assessing the deployment of additional instruments. Possibilities include design-based study practices, area biographies, a contribution by the Board of Government Advisors, the establishment of Communities of Practice or living labs, with the aim of acquiring and sharing knowledge, in support of the transitions.

Wherever necessary, we will create additional freedom of action within the rules or frameworks, if they form obstacles to the transitions. The deployment of role models, the use of nationally owned real estate, the acceleration of procedures, the allocation of room for experimentation or coordinating the integrated application of funding are all options within the set of instruments for NOVI areas.

Governance

Within NOVI areas, national, provincial and municipal government, water authorities and civil society parties are working together to find new solutions for complex tasks in the physical living environment, on the basis of already existing cooperation between national and regional government in the area. A joint national-regional programme will be established for each NOVI area, based on an administrative coupling of serious national and regional representatives. At national level, the most directly involved Minister will be the first point of contact for local administrators. If necessary, the Minister will be responsible for appointing a ministerial control group. Each area will also have its own area ambassador who will represent civil society parties in the administrative control group.

Role of national government

The role of national government in NOVI areas will depend on the tasks in the area in question. The role can be collaborative or facilitating, guiding and controlling or responsible for establishing frameworks. A collaborative or facilitating approach can for example involve national government in creating alliances and establishing task-specific (temporary) interdepartmental cooperation and harmonisation as well as supervising the relationship with surrounding areas and/or (national) tasks, for example with the Council for the Living Environment and Infrastructure, employed in the SEA. If a national interest cannot only effectively be settled through cooperation and facilitation, the role of national government can be more direct, or relate more closely to establishing the relevant frameworks. In the face of transitions of national importance and conflicting spatial claims, in which no joint agreement can be reached between the various levels of government, on the basis of an integrated consideration framework, national government can make choices between conflicting interests and impose conditions on the layout of the physical living environment.

Relationship with current projects and programmes

It is essential that administrative pressure not be increased in the NOVI areas; instead, cooperation should be assisted, improved, streamlined and consequently contribute to results. This for example means that there must be a clear relationship with the accessibility programmes, the house building boost or Housing Deals, Region Deals, urbanisation strategies, RES and Interadministrative Programmes, Heritage Deal projects, Area Agendas for Large Waters, the elaboration of the Delta Programme and the various current MIRT projects.

It is conceivable that specific additions will be made to these current programmes. It is also conceivable that part or all of these programmes will be awarded the status of NOVI area. Awarding the status of NOVI area can increase the political-administrative focus and visibility but can also enjoy or enhance added value, in other ways, too. Before the status is awarded, there must be a clear picture of how the status will generate added value, and how it can best be managed, without unnecessarily disrupting existing administrative agreements, and without increasing the ‘administrative burdens’. In the Implementation Agenda accompanying this NOVI, we will further elaborate the approach for NOVI areas. The most essential requirement is to tie in with existing programmes wherever necessary, without changing the responsibilities for the various programmes. The status NOVI area generates increased visibility for the joint efforts, results and potential obstacles. In this way, as a single government, we will ensure practical implementation of the NOVI. As part of the permanent NOVI cycle, new areas may be added, or the NOVI approach ended, if the desired results are not achieved.

The added value of design-based research; City of the Future (2019)[118]

Amsterdam Haven-Stad.

Utrecht Urban periphery east.

Rotterdam Alexanderknoop.

Eindhoven Fellenoord.

The NOVI tasks demand new working methods. Design-based research can assist in understanding these tasks. Design-based research is able to inspire, and can help innovate and integrate, by charting out multiple futures. On the one hand, this generates possible solutions which can assist in setting the course for integrated and complex tasks, while on the other hand it can boost focus by identifying points of friction, for example by making national tasks more tangible at a local scale.
In the 'City of the Future' project, 10 teams investigated five Dutch cities. The question was: 'How do the tasks of urbanisation and transition come together in a square kilometre?'
Team CIAM XXL and team Socio-Technical City made use of a 'second ground level' to combine mobility with urban development and climate adaptation. Team 'All Inclusive' revealed how high densities can go hand in hand with high quality of life. Design-based research can also fulfil a bridging role. It links Ministries, municipalities, centres of knowledge, market parties and citizens. In this way, a design team is able to integrate the various interests in its approach, design or strategy. An example of such team is Triangel, that produced a game based on Monopoly, in which various interests can be balanced and the conclusions used as input for a design.

[118] BNA research, The City of the Future. Ten design visions for five locations. An imaginary square kilometre of city. (De Stad van de Toekomst. Tien ontwerpvisies voor vijf locaties. Verbeelding voor een vierkante kilometer stad) Amsterdam 2019.

Quadrant 3: Implementation

Environment and Planning Act

The Environment and Planning Act features a series of instruments for its practical implementation, including the instruction rules in the Decree on the Quality of the Living Environment (Bkl), the general national rules in the Decree on Building Projects in the Living Environment (Bbl), the Decree on Activities in the Living Environment (Bal), programmes, project decisions and environmental permits. For those aspects of policy to be implemented by national government itself, the most widely used instrument will be the project decision. In its role as competent body, national government will involve the NOVI in any decisions on environmental permits.

Funding

There is not only a shortage of space but also of money. Implementation of the NOVI means accepting spatial choices. That can involve investments by a variety of parties. For the development of locations and areas, we have for example freed up 1 billion euros to finance the urgent house building task in the form of a house building boost.

The core idea behind the NOVI is that better, more integrated spatial choices will result in more widespread prosperity. First and foremost this means that investments must be worthwhile, or they can better be not made in the first place. We will investigate how investments can be better borne by those parties who will enjoy the benefits (the profit principle) and by those parties responsible for negative external effects (the polluter pays principle). With regard to government, the costs and investments will have to be integrated in the budgets available at the moment of decision making. The same applies to measures that emerge as being relevant to the fiscal system; both national government and provincial and municipal government operate policy instruments in respect of the tax burden, and measures arising from the NOVI will have to be integrated within the available capacity. Assisted by these instruments, the parties that benefit from the spatial choices can contribute to compensating those who are disadvantaged by the choices. There will of course still be the issue of distribution: the political choice on whether citizens or businesses that enjoy more or less spatial freedoms as a consequence are required to pay or be compensated, and if yes, to what extent. This issue of distribution will also have to be dealt with within the budgetary frameworks that are available at the moment the decision is taken.

At present, funding is above all linked to (sectoral) programmes and projects, and is deployed in the form of grants or via specific funds. In the mobility world, the Council for the Living Environment and Infrastructure *(Raad voor Leefomgeving en Infrastructuur - Rli)* recommends considering expanding the options for application of integrated spatial-physical tasks.[119] For example by transforming the Infrastructure fund into a Mobility fund - from modality to mobility - the Cabinet aims to facilitate measures aimed at improving the accessibility of the Netherlands. In this way, for example, the dividers between the various modalities will be dropped, creating space to explicitly fund smart measures. From 2030 onwards, as previously recommended by the Rli, the Cabinet believes it should be possible to put these recommendations into practice. The Cabinet is also investigating alternative options for investing in specific areas, for example in the infrastructure. In this regard, the Cabinet is working alongside the G4 (the four largest cities in the Netherlands) in the accessibility programmes and specific case studies. A study group has also been established to investigate alternative financing for Spatial Area Development. The study group issued recommendations for the use of existing and new instruments to improve the way in which the benefits from investments in area development and infrastructure are used. This is based on the idea of a broader cost-benefit analysis and value creation. In the case of water safety projects, for example, local governments are already able to invest in 'piggyback' opportunities and area developments that contribute to spatial development and the spatial quality of the area in question.

[119] Council for the living environment and infrastructure (Rli), From B to Different. Investing in mobility for the future (Van B naar Anders. Investeren in mobiliteit voor de toekomst), The Hague 2018

Knowledge

The NOVI provides a long-term vision for the future of the Netherlands. The world is in a continuous state of flux, and our knowledge of the future is limited. We must therefore continue to regularly monitor developments and tasks, in order to keep our strategy and vision up to date. A policy that is effective today can become ineffective as circumstances change. New and different measures may become necessary in order to realise the policy objectives. To actually arrive at a cyclic NOVI, we must therefore periodically assess the developments and the measures, and as necessary make policy adjustments.

This calls for various types of knowledge: knowledge of new developments that influence the physical living environment, knowledge of factors for success and failure for the effective implementation of the policy, knowledge of the extent to which we reach targets and knowledge about the functioning of the instruments within the system.

Well-organised learning capacity and a sound knowledge infrastructure are essential elements in enabling all affected government organisations and parties to learn from their experiences, while at the same time accounting for their efforts. The tackling of the tasks and the rapid technological developments also require the development of new knowledge (for example with regard to the process of regionalisation), good access and systematic use of information, and the effective application of the acquired knowledge and skills, at all levels. This urgently requires a soundly organised learning capacity and a knowledge infrastructure. In the Implementation Agenda accompanying the NOVI, we outline the elements of a NOVI knowledge and innovation programme. We will also be establishing a NOVI think tank in which, twice a year, the progress, governance and latest developments in the living environment will be discussed, in relation to the implementation of the NOVI.

Quadrant 4: Feedback

A permanent, cyclic approach essentially requires effective two-way traffic between policy development, policy elaboration, practical implementation and achieving the tasks set. This in turn requires feedback on the results achieved. This feedback will take the form of supervision and enforcement, as well as monitoring and evaluation.

Supervision and enforcement

The NOVI identifies the national interests and targets that form the focus of national government. To realise these national interests and targets, national government can call upon a range of instruments. One of those instruments for achieving the national targets and fulfilling international obligations is legislation and regulations. That framework contains the rules with which individual citizens and businesses must comply, when they undertake activities and (instruction) rules that lay down substantive standards for municipalities, provinces, water authorities and national government with each of the levels of administration must comply with, in implementing their government tasks.

The tasks of permit issuing, supervision and enforcement of the rules that apply to individual citizens and businesses are often entrusted to local government authorities (municipalities, provinces and water authorities). These levels of government have access to a range of instruments for supervising and where necessary enforcing compliance. These include warnings, orders for incremental penalty payment, administrative fines, administrative settlements, the withdrawal of a permit and finally a penalty notice.

In addition to these instruments, national government sometimes issues rules for the implementation of tasks by local government bodies (for example instruction rules) to ensure that national targets are met in the physical living environment, or to ensure compliance with international obligations. Supervision of implementation of these rules by local government in carrying out their tasks in the physical domain is the task of the next higher level of administration. The provinces, for example, are responsible for (inter)administrative supervision of the implementation of tasks by municipalities in respect of tasks in the physical domain (for example the environment, building, construction safety, housing and monuments). National government supervises the implementation of tasks in the provincial domain by provinces. National government and provincial authorities can base their interventions on the tools offered within the Municipalities Act and the Provinces Act. These tools include: replacement of the implementing body in the event of failure to complete a task, if the local government in question fails or fails to correctly fulfil its official task, and suspension or nullification by the Crown in cases where a decision is contrary to public interest or the law.

Subsequent assessment
In the new system, the majority of assessments will take place subsequently. If environmental values (from the Environment and Planning Act) imposed by national government are not achieved, a compulsory programme will be initiated pursuant the Environment and Planning Act.

Monitoring and evaluation

Learning programme
To ensure an adaptive NOVI, the progress of the practical implementation of the NOVI must be carefully monitored, the actual developments and status of transition processes carefully assessed and a sound basis developed for external accounting. This will require a learning-based monitoring and evaluation programme.

Monitor for the physical living environment: NOVI Monitor
The Netherlands Environmental Assessment Agency (PBL) will be converting the existing biannual monitor contained in the Structural Vision on Infrastructure and Space *(Structuurvisie Infrastructure en Ruimte - SVIR)*[120]into a monitor for the entire physical living environment as described in the NOVI. To allow the progress of the match between the provincial environmental vision and the area-specific approach to be correctly observed, if possible and relevant, the monitor will also publish results at regional level, to allow an appropriate match with local monitoring.

The NOVI Monitor is an effect monitor, the task of which is to produce a clear picture of the developments in relation to national interests and priorities. To create a picture of the various transition processes, links will be sought with the sectoral monitors developed specifically for that purpose. The Monitor will also consider the aspects of the physical living environment identified as vulnerable in the SEA. The monitor for changes in the landscape[121] as proposed by the Board of Government Advisors will as far as possible be integrated in the NOVI Monitor. The Netherlands Environmental Assessment Agency (PBL) will assess and advise on the observed developments in the physical living environment. The NOVI Monitor will also serve as monitor for the extent to which the targets and effects of the social goals in the Environment and Planning Act are achieved, and will be sent to the Dutch House of Representatives.

NOVI policy evaluation
As well as monitoring the progress of the policy based on the NOVI, we will regularly evaluate the functioning of the NOVI itself. This policy evaluation is aimed at improving the effectiveness of the NOVI, and will be carried out once every four years. The Minister of the Interior and Kingdom Relations will undertake this evaluation in collaboration with the relevant colleagues.

Accountability
On the basis of monitoring and evaluation, the policy will be accounted for to the House of Representatives, at which point any necessary adjustments will be made to the vision and its practical implementation.

[120] Ministry of Infrastructure and the Environment, National Policy Strategy for Infrastructure and Spatial Planning (SVIR): A competitive, accessible, liveable and safe Netherlands *(Nederland concurrerend, bereikbaar, leefbaar en veilig)*, The Hague 2012.
[121] Board of Government Advisors (CRa), Landscape Monitor: towards a system of national coverage *(Monitor Landschap: naar een landsdekkend systeem)*, The Hague 2018.

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DPI Animation House (p. 162, 163, 164)

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Municipality of Breda (p. 113)
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Wakelyns Agroforestry.
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Other illustrations
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PosadMaxwan strategy x design (p. 73, 74, 75)
Region of the Future – Team Defacto (p. 94)
City of the Future – Team INcity (p. 111)
City of the Future – Team The Socio-Technical City (p. 111)
Holland Park en Snippe Projecten (p. 114)
Wonderwoods Developments B.V. (p. 114)
Municipality of Amsterdam (p. 114)
Bureau MASSA, Zes x Zes en Stebru (p. 114)
Amvest en BPA (p. 115)
KAW en Woningbouwvereniging Lefier (p. 115)
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Stichting Knopen van de Mantel en Van Bergen
Kolpa Architecten (p. 131)
Dutch Urban Solutions (p. 131)
H+N+S Landschapsarchitecten (p. 140)
SMARTLAND Landscape Architects (p. 141 (3x))
Werkend Landschap (p. 146)
The Region of the Future – Team Flevoland (p. 147 (2x), 148)
City of the Future – Team CIAM XXI (p. 171)
City of the Future – Team Makerstad (p. 171)
City of the Future – Team Urban Archipelago (p. 171)
City of the Future – Team FIT (p. 171)

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