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Section 1: Ambition and steering

The Netherlands is a true water country. In spite of that, the population is scarcely aware of the risks and challenges associated with water and water management, because water management is so well-organised. The Dutch should be made more aware of the consequences of living with water.

The changing role of government authorities in general, and that of the central government in particular, affects the way water policy is managed. The financial resources available are decreasing, tasks are being decentralised and society itself is increasingly becoming both initiator and implementer of measures. This leads to a growing demand for other steering options, partnerships and funding arrangements. Moreover, (global) developments, such as climate change, scarcity of raw materials and population growth, are demanding answers.

The new National Water Plan provides the broad outlines, principles and direction of the national water policy for the 2016-2021 planning period, with a preview towards 2050. The Cabinet is responding proactively to anticipated changes in climate in the long term, in order to prevent flooding. The planning period will see realistic measures being implemented that address the challenges in the short term and leave sufficient options open for taking further steps in the longer term. The Cabinet ties in with the results of the Delta Programme. The approach makes the Netherlands a pioneer and a leading example at a global level.

This National Water Plan is the Cabinet’s next step towards a robust and future-oriented design of our water system, aimed at effective protection against floods, at the prevention of pluvial flooding and drought, and at achieving good water quality and a healthy ecosystem as the basis for welfare and prosperity.

The Cabinet aims to adopt a comprehensive approach, by developing nature, shipping, agriculture, energy, housing, recreation, cultural heritage and the economy (including earning potential), as much as possible in conjunction with water tasking.

The ambition is that - by 2021 - government authorities, businesses and citizens are made more aware of the opportunities and threats of water in their own immediate environment. Everyone will take their own responsibilities in bringing about together a water-robust spatial design, limiting pluvial flooding and disasters, and acting wisely in extreme situations.

Rationale and delineation
The National Water Plan (NWP) contains the broad outlines for the national water policy and the related aspects of spatial policy. The Cabinet is updating water policy in a number of areas.

- The Delta Decisions adopted in 2014 have meant that policy relating to flood risk management and freshwater has changed fundamentally. The national policy arising from the proposals for these Delta Decisions has been embedded in the National Water Plan 2009-2015 by way of an interim revision in 2014 and incorporated into this new National Water Plan for the 2016-2021 period.
- In recent years, the Cabinet has made agreements on various policy areas that are connected with water, such as agreements on energy (Energy Agreement), nature (Nature Vision), international use and new administrative relations.
(including the Framework Vision on Infrastructure and Space, the Administrative Agreement on Water and the Delta Programme). These agreements have been incorporated into this National Water Plan. The relevant policy documents will remain in force.

- By adopting this NWP, the Netherlands is also complying with the European requirements to draw up up-to-date plans and programmes of measures in accordance with Water Framework Directive (abbreviated as KRW in Dutch), the European Directive on the assessment and management of flood risks (abbreviated as ROR in Dutch) and the Marine Strategy Framework Directive (abbreviated as KRM in Dutch).

In accordance with the bill for the Environment and Planning Act, the Cabinet plans to develop a comprehensive vision on the policy for the physical living environment for the period up to 2018: the National Environmental Vision. This NWP is one of its key building blocks. 2015 will be a year of exploration and planning for this Environmental Vision.

This new NWP does not include a number of topics that were dealt with in the previous NWP. Only the topics that have been marked as being of national importance in the Framework Vision on Infrastructure and Space (abbreviated as SVIR in Dutch) are included in this NWP. Decentralised topics have been left aside, viz.: the area-based regional elaborations, pluvial flooding and various designated uses such as recreation and pleasure cruising. The relationship between soil subsidence and water management is not dealt with in this NWP either. As a precursor to the National Environmental Vision, the central government will be launching a joint process of co-creation with other government authorities and stakeholders to identify new policy challenges. It is conceivable that these topics will be dealt with during this process.

**Status**

The National Water Plan 2016-2021 is the successor to the National Water Plan 2009-2015. It supersedes this plan and its partial revisions (Wind at Sea outside 12 nautical miles and embedding national policy on Delta Decisions Under the Water Act, the National Water Plan also serves as a framework vision for the spatial aspects. The NWP is only binding to the central government. In the Netherlands, the central government is responsible for the main water system. The National Water Plan lays down the central government’s strategic goals for water management. The Management and Development Plan for the National Waters (abbreviated as Bprw in Dutch) by Rijkswaterstaat (RWS) outlines the conditions and measures for operational management to achieve these strategic goals. The NWP sets the framework for the Bprw. The Cabinet is asking the other government authorities to translate the NWP into their policy plans.

The National Water Plan is related to policy programmes for the subsoil and drinking water. As such, this plan includes references to the Framework Vision on Subsoil, currently under development, and the Drinking Water Policy Document which has been adopted.

**Organisation of water management**

Water management in the Netherlands is the joint responsibility of the central government, provinces, municipalities and water boards. Collaboration is an important prerequisite for effective action. The river basin management plans, the Flood Protection Programme, the flood risk management plans, the Administrative Agreement on Water and the Delta Programme are all examples of programmes and plans which, together, are energetically tackling water challenges. The Cabinet would like to continue this collaboration with its water partners. The Cabinet endorses the OECD’s conclusion that the organisational structure in water management is functioning effectively\(^1\). As such, the

---

\(^1\) OECD study, Water Governance in the Netherlands fit for the future?, 2014
Cabinet sees no reason to suggest any administrative or organisational changes in water management.

The Administrative Agreement on Water (2011) lays down clear agreements as to who is responsible for what aspects of water management. A basic principle in this regard is that no more than two administrative tiers will tackle a topic.

### Overview of frameworks, supervision and plans (Administrative Agreement on Water 2011)

**Frameworks**

A basic principle is that standard-setting is assigned to one general democratic body:

- Flood risk management: Central government
- Pluvial flooding: Province
- Water quality of national water: Central government
- Water quality of regional water: Province

**Supervision:**

A standardisation body supervises the government authority responsible for implementation:

- Flood risk management of the primary flood defence system: Central government supervises Rijkswaterstaat and water board
- Pluvial flooding including regional flood defence system: provinces supervise water boards
- Water quality: Central government supervises Rijkswaterstaat and water board

With the presentation of the proposals for the Delta Decisions and preferential strategies in September 2014, the Delta Programme entered a new stage: from the development of policy to its elaboration and implementation. Ongoing elaboration of the generic topic of flood risk management will be taken on by the central government, in close consultation with the region. As for the ongoing elaboration with respect to the generic topics of freshwater and spatial adaptation, the current national programme structure will remain in place on account of the joint responsibility. The region is responsible for following up the area-based sub-programmes and will set up an appropriate administrative structure, which the central government will join as a partner. The intensive collaboration between the various administrative tiers developed within the Delta Programme over the years will be preserved. This was ratified by the administrators in September 2014 in the Administrative Agreement on the Delta Programme.

The evaluation of the Delta Act (2017) will be used as an opportunity to assess the future of the Delta Programme in the long term. As part of this process, consideration will be given to the involvement of all sections of society regarding the impact of the water policy.

**Water awareness**

Without a flood defence system, approximately 60% of the Netherlands would be flooded on a regular basis. Nine million people live in this area and 70% of our gross national product is earned here. Floods can lead to large numbers of victims and serious economic damage. However, the Dutch public is becoming increasingly oblivious to water. If the Dutch knew how to anticipate and respond to extreme situations of drought or floods, such situations would be less likely to have serious consequences.

A study by the OECD has shown that the Dutch are insufficiently aware of the concerted efforts that are needed to keep the Netherlands dry and inhabitable and that the risk of flooding is not simply hypothetical. Likewise, people have little notion of what efforts are required to produce good-quality drinking water. A lack of adequate water awareness can lead to diminished support for measures, especially if the necessary budgets are under pressure.

Together with the partners of the Administrative Agreement on Water (provinces, water boards, municipalities, drinking water companies and Rijkswaterstaat), the Cabinet has launched the ‘Our Water’ public awareness campaign (www.onswater.nl). This publicity campaign is designed to increase water awareness among the Dutch population, explain...
the need for new investment and increase the involvement of people and their ability to cope. Using the “am I being flooded” app, people can soon discover the levels which the water around them can reach and the action that should be taken. Awareness begins at an early age. That is why the water partners are encouraging schools to pay extra attention to water in a water education programme.

**Principles**
Water policy is formulated and implemented according to a catchment area approach. The various water challenges are considered within a natural and geographical unit, with administrative boundaries being of secondary importance.

The KNMI (Royal Netherlands Meteorological Institute) has reconfirmed the expected climate change and given an even gloomier forecast in the new 2014 climate scenarios: in the future, the Netherlands will see more and heavier rainfall, a 25-80 cm rise in sea levels by 2085, drier summers and more regional variations. These scenarios form the basis for fleshing out water policy in more detail.

Given its responsibility for the water system, the central government is embedding the following principles:

- **Comprehensive water management** The Cabinet continues to maintain a comprehensive approach to the water challenges, by considering the various tasks relating to water quantity (flood risk management and pluvial flooding), water quality and use of (fresh)water under wet and dry circumstances in relation to one another.

- **Preventing shifting** The Cabinet wants to prevent water quantity and quality problems being shifted in terms of space and time. That is, quality problems caused upstream should not be shifted to downstream waterways. To prevent this shifting, managers are reaching agreements with each other about acceptable quantities and the quality of the incoming water. To this effect, the following sequences apply:
  - **retain-store-discharge.** This sequence means that water is retained in the soil and as surface water for as long as possible to prevent pluvial flooding and inundations and, during dry periods, to retain local water for as long as possible. If necessary, water will be stored temporarily. If retention and storage are no longer possible, the water will be discharged elsewhere. This sequence prevents responsibility for the regional water system being shifted to the main water system. Based on this sequence, Rijkswaterstaat is reaching agreements with regional managers on the discharge of water from the regional to the main water system.
  - **Keep clean-separate-clean.** The main purpose of this sequence is to keep the water as clean as possible. Secondly, clean and contaminated water must remain separated as much as possible. Finally, if keeping clean and separation are no longer possible, cleaning the contaminated water may be the next step (prevention ladder in the Drinking Water Policy Document).

- **Connecting space and water.** In addressing water challenges and implementing measures, the activities are first coordinated with the other relevant spatial tasks and measures in the area. The aim is to ensure the best possible harmonisation or mutual reinforcement of the scope, programming and financing. This approach often makes it possible to improve water management, while at the same time reinforcing the economy and the living environment at lower costs.
The Cabinet has adopted the following principles in implementing this National Water Plan:

- **Adaptive approach.** The water partners will anticipate future developments on the basis of an adaptive approach, through phased decision-making, flexible strategies and a comprehensive approach. This will minimise the probability of overinvestment or underinvestment. This approach makes it possible to take effective measures in the short term that can be adapted to new insights or developments in the long term.

- **Collaboration.** The Cabinet sets great store by close collaboration with government authorities and stakeholders, based on a relationship of trust, transparency and equivalence.

- **Inform-encourage-act.** Water users may expect the following roles from the government: government authorities inform users and encourage them to assume responsibility and take measures for themselves.

Together with the partners of the Administrative Agreement on Water, the Cabinet keeps the general public informed about the results of the water policy each year.

**Coordination**

From an early stage, the water boards and Rijkswaterstaat issued recommendations on this National Water Plan, in compliance with the Water Review process. These recommendations have been taken into account. In their final recommendation, Rijkswaterstaat and the water boards state that they are satisfied with the process followed.

The text for the Draft National Water Plan has been discussed with provincial authorities and water boards in regional sessions. The Ministry of Infrastructure and the Environment, the provinces (IPO), water boards (Unie van Waterschappen), municipalities (VNG) and water companies (Vewin) discussed the draft text in the Steering Group on Water on 8 October 2014. All parties referred to in the Water Decree are involved in preparing the plan.

Civil society organisations are participating through the Infrastructure and Environment Consultation Committee.

In the decision-making process, the Cabinet has kept to the environmental impact statement on this plan. The outcome of the associated Appropriate Assessment of Nature provided no reasons for the Draft National Water Plan not to be adopted.

The Draft National Water Plan will be made available for inspection in December 2014. All the parties have the opportunity to present their views for a period of six months. The plan will be adopted before 22 December 2015.

**Overview of milestones**

| Table 1 Milestones in ambition and steering |
|---|---|---|---|---|---|---|---|
| Delta Act | | | | | | | Evaluate |
| Administrative Agreement on Water | | | | | | | Evaluate |
| Environmental Vision | | | Draft | Adopt | | | |
| Environment and Planning Act | | | | | Complete | | |
| Framework Vision on Subsoil | Draft | | | | | | |
Section 2: Flood risk management

Ever since the first Delta Plan was put into effect, the number of people living in floodable areas has grown substantially. The economic value in these areas has also increased significantly.

Due to these changes and the effects of climate change, flood risk management calls for efforts and attention in the forthcoming planning period as well.

The Cabinet is pursuing a progressive flood risk management policy. The aim of this is to ensure that everyone in the Netherlands is offered the same tolerable risk level. Areas with large numbers of potential victims or where economic damage can be substantial are given additional protection. These areas have been identified on the basis of costs-benefit analyses and group risk analyses. Areas that are home to vital infrastructure are also afforded extra protection. The standards will be different in terms of form (probability of overtopping) and height. Safety is achieved using the various layers of the multi-layer safety: preventing floods and limiting the consequences of a flood (water-robust spatial organisation and disaster management).

The flood risk management choices made by the Cabinet are outlined in this section. A detailed explanation and description of the spatial aspects are given in appendix 1: Embedding of national policy, Delta Decisions and preferential strategies. This section also provides an explanation of the flood risk management plans.

These choices ensure that the Netherlands will continue to be a country with sufficient protection against floods, where the community and the economy can flourish.

New flood risk management standards

New standards
The Cabinet will continue to adapt the flood risk management policy and, to this end, will draft a bill setting new standards for primary flood defence systems. New standards are necessary, because the current requirements for primary flood defence systems mostly date from the 1960s. Since then, the population and economic value of land protected by the dykes have risen significantly. In addition, new knowledge has become available about the operation of the barriers and the consequences of floods.

The flood risk management policy is derived from the risk-based approach. This not only takes the probability of a flood into account, but its potential consequences too. The greater the probability and consequences, the stricter the standard must be. In addition, the new standards differ in nature (probability of a flood rather than probability of overtopping).

With its flood risk management policy, the Cabinet aims to achieve the following goals:

- The flood risk management policy offers everyone living behind a dyke in the Netherlands a tolerable risk level of at least 1 in a 100,000 per year. This means that the probability of dying as a result of a flood for any individual should be no greater than 0.001% per year.
- Moreover, additional protection is offered in areas where there may be:
  - potentially large groups of victims;
  - and/or major economic damage;
  - and/or serious damage as a result of the failure of vital and vulnerable infrastructure of national importance.
These targets have been computed into standard specifications for the flood defence systems. These are no longer based on dyke ‘rings’ but on dyke ‘stretches’. Each dyke stretch is assigned a standard specification commensurate to the consequences in the specific area. The standard specifications have been classified into six categories, with probability of flooding ranging from 1/300 per year to 1/100,000 per year (see Figure 1). These standard specifications provide the basis for setting the statutory standards and the assessment tools. This will make it possible to conduct anticipatory assessments and ensure robust design. The standards will be laid down in an amendment to the Water Act. The Cabinet aims to effectuate this amendment as of 1 January 2017 and have the associated statutory assessment tools in place by then as well. The aim is for all dykes to meet the new standards by 2050. The following national assessment of primary flood defence systems will take place from 2017 onwards on the basis of the new flood risk management policy and the associated, updated set of assessment tools. Where necessary, the Cabinet will adjust policy and regulations.

The Cabinet will evaluate the Coastal Policy and the Major Rivers Policy in 2015 and revise these as necessary.

Central government has concluded agreements with the water boards on the costs associated with these new standards (see section 8).

**Implementation of new standards**

Efforts designed to ensure the required protection level will continue to focus on prevention. This can be done by improving dykes, dunes and storm surge barriers and by taking river-widening measures. In specific situations, for example, where dyke improvement is very expensive or has a far-reaching impact on the community, smart combinations with spatial organisation and/or disaster management can be made to achieve the same level of protection. The application of a ‘smart combination’ means that tailored agreements can be reached with respect to tasks, responsibilities and funding on a case-by-case basis. The starting point for financing is that the resources which are made available are balanced by savings made in the Flood Protection budget, achieved because fewer measures are taken that qualify for a subsidy from that budget. Together with the water boards, provinces and security regions, the central government will ensure that disaster management is effective and that citizens and businesses will know what to do in situations where flooding is imminent.

There are various ways of improving safety, such as dyke improvement, storm surge barriers, sand replenishments, river widening and smart combinations. Where possible, the Cabinet promotes integrated implementation, taking into account area-based development and a timely approach to the safety risk. Working out more detailed flood risk management challenges always requires proper spatial incorporation. The ambitions of other parties may be linked to these flood risk management measures through co-financing. This contributes to quality, support and efficiency. More opportunities will arise for such links, as the required flood risk management measures envisage the situation in the period leading up 2050: by clarifying the long-term challenges at this stage already, it is possible for other parties to ascertain more easily how developments can be coordinated with the flood risk management measures. These opportunities are identified in the exploratory stage of the safety measures.

Prior to the statutory embedding of the standards, for projects that are launched as part of the new Flood Protection Programme, the water boards will take the new standard specifications into account by using the 2014 design tools, based on the new standard specifications. The ongoing implementation programmes - Flood Protection Programme, Room for the River and Meuse Projects - will continue as agreed.

Sections 5 and 6 provide an area-based elaboration of these flood risk management choices for the larger waterways and the coast.
Figure 1 Standard specifications for each dyke stretch
The European Directive on the assessment and management of flood risks

The purpose of the Directive on the assessment and management of flood risks is to limit any adverse consequences of floods for human health, the environment, cultural heritage and economic activities. Each EU country is required to draw up a flood risk management plan for the national part of the international catchment area.

The Netherlands is situated in the delta of major European rivers with cross-border catchment areas. As such, the Netherlands has an interest in the solidarity principle laid down in the Directive on the assessment and management of flood risks.

Land use and measures taken in one country may impact risks in downstream countries. Central government seeks to prevent any adverse cross-border consequences and coordinates these with neighbouring countries. As such, the flood risk management plans consist of an international component and a national component.

The Netherlands is developing four flood risk management plans: these are for the catchment areas demarcated respectively by the Rhine, Meuse, Schelde and Eems (see figure 2). These management plans provide an overview of the risks, the targets for reducing risks, and the measures in the period 2016-2021. The flood risk management plans include an appendix with a table of measures that the central government has compiled in consultation with the other stakeholders.

The flood risk management plans contain current policy only. The four flood risk management plans form a complete appendix to this National Water Plan.

Overview of milestones

Table 2 Milestones in flood risk management

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<td>Amendment to the water act standards + new set of assessment tools</td>
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<td>Entry into force</td>
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<td>Major Rivers and Coastal Policies</td>
<td>Evaluate</td>
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<td>National assessment of primary flood defence systems</td>
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<td>Start of implementation</td>
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Figure 2 Division into catchment areas in the Netherlands for Water Framework Directive and the Directive on the assessment and management of flood risks
Section 3: Freshwater

Robust freshwater supplies are vital to our economy and society. 16% of the Dutch economy depends on a sufficient supply of freshwater; together these sectors account for an annual turnover of more than €193 billion.

Even now there is sometimes not enough freshwater to meet demand. This is expected to become more frequent in the future due to climate change, salinisation and socio-economic developments, such as population growth and economic expansion.

Clear goals and a coherent approach are necessary, in conjunction with measures in the main water system and the regional water system and among users (such as agriculture, industry, nature, shipping and drinking water).

The Cabinet is preparing for climate change by basing freshwater policy on the availability of freshwater and the probability of water shortages in a specific area under both normal and dry conditions. The freshwater choices made by the Cabinet are outlined in this section. A detailed explanation and description of the spatial aspects are given in appendix 1: Embedding of national policy, Delta Decisions and preferential strategies.

The introduction of the new ‘supply level’ tool provides an insight into the availability of freshwater and the division of responsibilities. No-regret measures are making the water system more robust and less vulnerable in the short term. The Cabinet is investing in an implementation programme to this end.

National freshwater objectives

The current foundation for freshwater supplies continues to provide the basis for freshwater policy, even in the long term. The aim is to secure supplies in areas that receive water from the main water system. This calls for a critical view of the water demand and the options for retaining and storing water in the region as much as possible. In areas without such supply, the Cabinet wants to change from an approach focused on discharge to one that is also focused on proper conservation and better utilisation of freshwater. One aspect of this approach is combating salinisation in susceptible areas to the fullest extent possible. Despite all efforts, salinisation will, however, increase in certain places. At an international level, the Cabinet is committed to reaching agreements to protect the Rhine and Meuse as supply routes for freshwater supplies in the Netherlands, designed to ensure sufficient water of the required quality. At all times, the aim is to combine the various water challenges aspects within the catchment areas.

The water-dependent sectors include a number of crucial designated uses. These uses are protected during periods of water shortages, as they are given priority in accordance with the statutory list of priorities. In cases where the international competitive position of the water-related economy is at issue, the Cabinet is investing in measures to maintain or even improve freshwater supplies.

The Cabinet advocates a more economical and effective use of available water. The Cabinet will provide clarifying information on the risk of water shortages and put forward action strategies to anticipate future climate change. Specific pilot projects, with results that can be applied for a wide variety of purposes, must contribute to innovation and knowledge development for climate adaptation in specific regions.
Supply levels and measures

Together with the users, the government authorities involved will specify the availability and (where relevant) the quality of freshwater in the form of supply levels. The 'supply level' indicates the availability of freshwater and the probability of water shortages in a certain area, under both normal and dry conditions. A start will be made on working out the first group of areas in greater detail. The supply levels will be available to this group by 2018 and will be evaluated; by 2021, supply levels will have been agreed and laid down for all areas.

The existing (main) water system will be protected and reinforced as a buffer and supply route for freshwater by a number of targeted investments in the short term. Investments will be made, for example, to increase the freshwater buffer in the IJsselmeer region in the summer and to bring about a more stable freshwater supply in the Western Netherlands. In areas that do not receive water from the main water system - the elevated sandy soils and parts of the Southwest Delta - investments in effective conservation and better utilisation will be helpful.

Smart water management, with the collaborating water managers making use of up-to-date, shared information, will improve the balance between supply and demand in times of water shortages.

Section 5 provides an area-based elaboration of the freshwater choices. Figure 3 shows the adaptive measures for freshwater in the short, medium and long terms.

The financing of central government measures is outlined in section 8.

Overview of milestones

Table 3 Milestones in freshwater

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<td>Elaboration of supply</td>
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<td>Laid down for all areas</td>
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<td>levels</td>
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Figure 3: Freshwater measures
### Key to figure 3

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<tr>
<th>Zoetwatermaatregelen</th>
<th>Freshwater measures</th>
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<td><strong>Korte termijn</strong></td>
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<td>efficiënt en zuinig watergebruik</td>
<td>efficient and economical water consumption</td>
</tr>
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<td>structurele zoetwatervoorraad IJsselmeer en Markermeer 20 cm</td>
<td>permanent freshwater buffer IJsselmeer and Markermeer lakes 20 cm</td>
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<tr>
<td>(inclusief robuuste inrichting, waaronder vooroevers)</td>
<td>(including robust design, with shore faces)</td>
</tr>
<tr>
<td>slim watermanagement</td>
<td>smart water management</td>
</tr>
<tr>
<td>(Hollandsche IJssel, Amsterdam-Rijnkanaal, Noordzeekanaal en stuwen Driel, Amerongen en Hagestein)</td>
<td>(Hollandsche IJssel, Amsterdram-Rijnkanaal, Noordzeekanaal and weirs at Driel, Amerongen and Hagestein)</td>
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<tr>
<td>praktijkproef langsdammen</td>
<td>practical test with erosion control dams constructed parallel to the river flow</td>
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<td>uitbreiden alternatieve aanvoerroutes 15 m3/s</td>
<td>expand alternative supply routes to 15 m3/sec</td>
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<td>bypass Irenesluizen ten behoeve van kleinschalige wateraanvoer</td>
<td>bypass Irene locks for small-scale water supply</td>
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<td>optimaliseren beheer Bernisse-Brielse Meer (onder andere gebruik inlaat Spijkenisse)</td>
<td>optimise management of Bernisse-Brielse Meer lake (including use of intake at Spijkenisse)</td>
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<td>optimaliseren beheer Volkerak-Zoommeer</td>
<td>optimise management of Volkerak-Zoommeer</td>
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<tr>
<td>verbeteren zoet-zoutscheiding sluizen</td>
<td>improve freshwater/saltwater separation at locks</td>
</tr>
<tr>
<td>vergroten capaciteit Noordervaart van 4 naar 5 m3/s</td>
<td>increase Noordervaart capacity from 4 to 5 m3/s</td>
</tr>
<tr>
<td><strong>Middellange termijn (mogelijkheden)</strong></td>
<td><strong>Medium term (opportunities)</strong></td>
</tr>
<tr>
<td>efficiënt en zuinig watergebruik</td>
<td>efficient and economical water consumption</td>
</tr>
<tr>
<td>structurele zoetwatervoorraad IJsselmeer en Markermeer verder vergroten (maximaal 40-50 cm)</td>
<td>increase permanent freshwater buffer IJsselmeer and Markermeer lake</td>
</tr>
<tr>
<td>waterbesparende maatregelen schutten Maas</td>
<td>further (max. 40-50 cm) water-saving measures during lockage in Meuse</td>
</tr>
<tr>
<td>transport van water van Waal naar Maas</td>
<td>transport water from Waal to Meuse</td>
</tr>
<tr>
<td>opschaling langsdammen</td>
<td>scaling up erosion control dams constructed parallel to the river flow</td>
</tr>
<tr>
<td>uitbreiden alternatieve aanvoerroutes 24 m3/s, eventueel permanent oostelijke aanvoer</td>
<td>expand alternative supply routes to 24 m3/sec, possibly with permanent supply from the east</td>
</tr>
<tr>
<td>vergroten buffer/kleinschalige alternatieve aanvoer Bernisse-Brielse Meer</td>
<td>increase Bernisse-Brielse Meer lake buffer/small-scale alternative supply</td>
</tr>
<tr>
<td>alternatieve robuuste zoetwateraanvoer voorzieningengebied Volkerak-Zoommeer</td>
<td>alternative robust freshwater supply in Volkerak-Zoommeer lake supply area</td>
</tr>
<tr>
<td>vergroten capaciteit Noordervaart van 5 naar 6 m3/s</td>
<td>increase Noordervaart capacity from 5 to 6 m3/s</td>
</tr>
<tr>
<td>aansluiten gebied Liemers</td>
<td>connect with Liemers area</td>
</tr>
<tr>
<td><strong>Lange termijn (mogelijkheden)</strong></td>
<td><strong>Long term (opportunities)</strong></td>
</tr>
<tr>
<td>efficiënt en zuinig watergebruik, watertekorten accepteren</td>
<td>efficient and economical water consumption, accept water shortages</td>
</tr>
<tr>
<td>structurele zoetwatervoorraad IJsselmeer verder vergroten</td>
<td>further increase permanent freshwater buffer in IJsselmeer lake</td>
</tr>
<tr>
<td>aanpassen afvoerdeling laagwater</td>
<td>adjust discharge distribution during low water</td>
</tr>
<tr>
<td>vervangen Maeslantkering na 2070 (mogelijk zoutwerende werking)</td>
<td>replace Maeslantkering storm surge barrier after 2070 (may help prevent saltwater intrusion)</td>
</tr>
<tr>
<td>uitbreiden alternatieve aanvoerroutes &gt;24 m3/s, eventueel permanent oostelijke aanvoer</td>
<td>extend alternative supply routes to 24 m3/sec, possibly permanent eastern supply</td>
</tr>
<tr>
<td>(grootschalige) alternatieve aanvoer Bernisse-Brielse Meer</td>
<td>(large-scale) alternative supply Bernisse-Brielse Meer lake</td>
</tr>
</tbody>
</table>

### Zoetwaterregio’s

- **Regio West-Nederland**
- **Regio IJsselmeergebied**
- **Regio Hoge Zandgronden**
- **Regio Rivieren**
- **Regio Zuidwestelijke Delta**
- **Regio Waddengebied**

### Ondergrond

- Zoetwater
- zout water/ brak water
- buitendijks gebied

### Freshwater regions

- Western Netherlands region
- IJsselmeer region
- Elevated Sandy Soils region
- River region
- Southwest Delta region
- Wadden area region

### Subsoil

- freshwater
- salt water/brackish water
- area outside the dykes
Section 4: Water quality

Monitoring results show that the water quality has improved substantially in recent years. Nevertheless, additional policy efforts are required: achieving the ecological and chemical water quality targets for the Water Framework Directive is still a major challenge.

For example, the Organisation for Economic Co-operation and Development has stated that progress with respect to nitrogen, phosphorus and pesticides and the recovery of natural dynamics (OECD, March 2014) has been stagnating. Part of the reason for this is that the Netherlands is situated downstream and the pressure on the water quality is high on account of the intensive land use. New substances in the water also entail risks.

Together with the partners of the Steering Committee on Water, the Cabinet will exercise more control over improving the water quality.

The Cabinet sets great store by achieving the goals set out in the European Water Framework Directive. In the 2015 budget, permanent funding has been earmarked for the design measures under the Water Framework Directive in the main water system. The Cabinet will continue to pursue the approach already adopted in reducing emissions of various substances. Clear objectives have been formulated, for both the substances mentioned by the OECD and new substances that may cause problems, such as medicines. The Cabinet is making area-based arrangements with various parties in order to jointly arrive at efficient measures.

By late 2021, the ambition is for the Netherlands to be well on the way to achieving the goals of the Water Framework Directive. Important issues have been put on the agenda and are being effectively tackled. In this way, significant steps have been taken towards clean and ecologically healthy water for an attractive living environment.

European Water Framework Directive

In 2000 the EU member states adopted the Water Framework Directive. The primary goals of the Water Framework Directive are the general protection and improvement of the quality of all water (groundwater and surface water), of the groundwater quantity, the specific protection and improvement of (parts of) waters named in the Water Framework Directive register of protected areas as well promoting the sustainable use of water. Using monitoring information and (environmental) targets, the condition of the bodies of water is being quantified and the challenge determined. The measures that the Netherlands is taking can be divided into national and area-based measures. The area-based measures form part of the plans of the water managers. The Cabinet is safeguarding the implementation of the area-based measures in the main water system as part of the Management and Development Plan for the National Waters. The European Commission is being kept informed about every catchment area by means of a catchment area management plan. The catchment area management plans designate the bodies of surface water that are managed by the central government.

Catchment area management plans

Each country is required to formulate a catchment area management plan for each of its catchment areas. Apart from a national component, this plan also has an international component that has been formulated together with the countries in the cross-border catchment area. Sections of the international catchment areas of the Rhine, Meuse, Schelde and Eems are located in the Netherlands. The national sections of these catchment areas are shown in figure 2 (section 2).
The catchment area management plans for the first planning period (2010-2015) are being implemented. 22 December 2015 marks the start of the second planning period of the Water Framework Directive. In consultation with the provincial authorities, water boards and municipalities, the four catchment area management plans for the first planning period have been updated for the period 2016-2021. Together with a summary of the sets of measures, the updated catchment area management plans constitute an appendix to this NWP. In addition to ensuring a good chemical and ecological quality in all bodies of water governed by the Water Framework Directive, specific water quality requirements are achieved for protected areas (for Natura 2000, swimming water and drinking water). The implementation of Water Framework Directive measures also contributes to the goals of the Marine Strategy Framework Directive. The financing of the Water Framework Directive design measures in the main water system is outlined in section 8.

In the Netherlands the programme of measures is the sum total of all measures for the implementation of the Water Framework Directive that are incorporated in the water plans under the Water Act: the National Water Plan, the Management and Development Plan for the National Waters, the regional water plans and the management plans for the regional waters. Central government is responsible for the general directing and for laying down targets and measures for the national waters. The nationwide measures that apply to all bodies of water are outlined below in the sub-section on improvement of water quality.

**Improvement of water quality**

The Cabinet sets great store by achieving the ecological and chemical Water Framework Directive objectives in 2027 and by countering new substances that impact the chemical water quality, such as medicines and microplastics. The regions, the Netherlands Environmental Assessment Agency (Balance Sheet of the Living Environment, 2014) and the OECD have indicated that additional efforts are required in this area. Together with the partners in the Steering Committee on Water, the Cabinet therefore wants to dedicate more management efforts to improving the water quality. Through comprehensive water management, the partners are establishing a link with freshwater. The Cabinet will flesh out the organisation and the approach in more specific terms in 2015.

In the most recent planning period, the quality of the surface water underwent further improvements. The current water quality suffices for most designated uses. This is partly thanks to the fact that the implementation of the catchment area management plans 2009-2015 is well on schedule. This applies to both the national measures taken by the central government and the area-based measures taken by the other water managers. Many waters are becoming clearer, creating opportunities for water plants and increasing the diversity of fish stocks. The Cabinet is striving towards healthy ecosystems with sufficient open water and fish. However, the final picture appears to be adversely influenced by non-indigenous animal and plant species (exotics). The Cabinet is conducting research into this, also with a view to any effects on designated uses such was (water)recreation and angling and fishing.

There is still plenty of work to do. In regional waters in particular, targets for nitrogen, phosphorus and pesticides have not yet been reached. Moreover, there are new substances that entail risks. For example, the quality of surface water and groundwater is not yet good enough to provide drinking water due to pollution by the agricultural sector, existing soil contamination, urbanisation and new substances (See Policy Document on Drinking water 2014). Issues are identified in an area-based manner. The spatial design of many waters also needs to be improved so that more room is available for riverbank plants and migratory fish to develop. These tasking aspects call for additional national and area-based measures.
Substances, design and exotics all have an impact on the ecosystem. Future measures increasingly need to be tailored to solve the remaining issues, for which a proper knowledge of the water is indispensable. The current monitoring programmes do not always suffice for this purpose. Moreover, the monitoring must be adapted on account of new requirements set by the European Commission. There are, for example, new requirements for measuring chemical substances in biota. The monitoring of chemical substances the production or use of which is already banned can (partly) be reduced. In light of these developments, the Cabinet will evaluate the monitoring programmes together with the other government authorities in 2015.

**Fertiliser policy**

At present, the fifth nitrate action programme is underway (2014-2017). It will take some time before the effects of the nutrient levels in the surface water and groundwater become apparent. In various places in the country, agricultural businesses and the water manager have been joining forces to arrive at successful area-based tailored solutions. Based on the statutory evaluation of fertiliser laws in 2016, the Cabinet will ascertain whether the targets are being met on time and whether any supplementary initiatives may be helpful.

**Tackling pesticides**

In the Second Policy Document on Sustainable Crop Protection, the Cabinet has included an implementation agenda containing measures for the period 2013-2023 to significantly reduce pesticide emissions. The aim is a 50% reduction in overruns of the environmental quality standards by 2018 and a 90% reduction by 2023. Similar targets have been set for overruns of the standard for surface water that is to be used for the production of drinking water (50% reduction by 2018 and 90% reduction by 2023). Pesticide manufacturers are drawing up emission reduction plans for situations where there is a plausible relationship between standards being exceeded and the use of a pesticide. Various measures are designed to reduce emissions during the use of pesticides. Eventually greenhouse farmers will be required to purify drain water. An interim evaluation in 2018 will determine whether the planned reductions as part of the Second Policy Document on Sustainable Crop Protection are on schedule.

**Tackling medicines**

The presence of medicines in the surface water has adverse effects on aquatic ecosystems. The Cabinet has opted for reducing the impact of medicines by means of a chain-oriented approach. The aim of this is to encourage a source-oriented approach at the beginning of the chain, supplemented by measures at the end of the chain (purification). Care institutions, which form a major source of medicinal residue, are working to make their business operations more sustainable. Despite measures that are taken at the source, measures must also be taken at wastewater purification plants. The Cabinet is making arrangements with the water boards and drinking water companies on specific follow-up steps as part of this process.

**Delta Plan on Agricultural Water Management**

The Delta Plan on Agricultural Water Management is an initiative of the National Horticultural Organisation (LTO Nederland). LTO Nederland, the Ministry of Infrastructure and the Environment, the Ministry of Economic Affairs, the Unie van Waterschappen (Union of Water Boards) and Interprovinciaal Overleg (Association of Provinces) have agreed to address the water challenge using a customised approach: area-based and issue by issue. This approach entails both an improvement of the water quality (nutrients, pesticides, medicines) and more effective use of freshwater under dry conditions. The required collaboration between agricultural businesses and water managers and the regional support for this by the Rural Development Programme will have been worked out in greater detail in 2015.
Tackling litter
Plastic and other litter causes serious economic and ecological damage, likewise through the water system. Microplastics, for example, can jeopardise the smallest organisms at the beginning of the food chain, which can harm the productivity of the entire ecosystem. The Cabinet is seeking to prevent plastic and other litter from ending up in the environment at the earliest possible point in the chain. Arrangements for this are being made with the sectors. Policy intensification for litter in the sea has been elaborated in the Programme of Measures for the Water Framework Directive (appendix 5). In 2013 more than 70 parties signed the Plastics Chain Agreement, one of the aims of which is to reduce plastic litter. In the 2014 OSPAR Marine Litter Action Plan countries in Northeast Atlantic region agreed on measures to reduce litter in the sea. The Cabinet supports the EU proposal to arrive at a general quantitative reduction target for marine litter at EU level.

Water Quality Objectives and Monitoring Decree
The Water Quality Objectives and Monitoring Decree 2009 stipulates the quality requirements that reflect the good condition of the bodies of water. The national measures operate through the source-oriented track. For all sources of contamination, licences or general rules prescribe the best available techniques to reduce discharges and emissions. Subsequently, the need for any additional measures will be assessed. The substances and figures included in the Water Quality Objectives and Monitoring Decree and underlying Ministerial Monitoring Regulation may serve as the starting point for both the Water Framework Directive waters and other waters. The Water Management Laws and Regulations Handbook discusses the manner in which substances not provided for in the law can be dealt with. These substances also include the so-called ‘very alarming substances’.

Groundwater and drinking water
The Framework Vision on Subsoil (STRONG, a draft version of which is expected to be complete in 2015) will outline a vision on the sustainable and efficient use of groundwater for various social purposes and an elaboration of the resulting policy challenge (for example, groundwater extractions and replenishments when using geothermal energy, brine discharges, and storage and use of rainwater surpluses in the soil). In the Framework Vision on Subsoil, the government Cabinet will also be addressing the strategic groundwater reserves.

In the coming years (2016-2020), soil remediation operations in the Netherlands will focus on tackling urgent sites. Eliminating human risks is paramount in this regard, as are the prevention of ecological risks and unchecked spread to the groundwater. The most appropriate approach is determined for each case in order to prevent contamination from spreading to groundwater and surface water, to promote natural degradation and to protect vulnerable objects such as drinking water collection plants. Based on the administrative agreements with local and regional government authorities and civil society organisations as part of the broadening of the soil policy, the central government will set frameworks for the quality and quality of groundwater. Within these frameworks, local and regional government authorities can customise the broadening of the soil policy and decisions on uses of the soil and subsoil.

The drinking water policy has been elaborated in the 2014 Drinking Water Policy Document.
## Overview of milestones

### Table 4 Milestones in water quality

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Improving water quality</td>
<td>Elaborate enhancement of control</td>
<td></td>
<td></td>
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<tr>
<td>Water Framework Directive</td>
<td>Start of second plan Period</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Second Policy Document on Sustainable Crop Protection</td>
<td>Interim evaluation</td>
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<td></td>
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<tr>
<td>50% less exceeding of pesticide standards</td>
<td>Complete</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitoring programmes</td>
<td>Evaluate</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Elaboration of Delta Plan on Agricultural Water Management</td>
<td>Elaboration of Rural Development Plan</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Fertiliser Act</td>
<td>Evaluate</td>
<td></td>
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</tr>
</tbody>
</table>
Section 5: Area-based elaborations of major waters

The central government bears responsibility for flood risk management and good freshwater supplies in the major waters. The challenges differ for each area.

In the Rhine-Meuse delta, for example, river discharges are expected to increase and salt water continues to encroach into the delta. The IJsselmeer lake is the largest freshwater buffer in the country, which leads to a specific challenge. Central government has the responsibility for implementing the generic policy in these areas, allowing for regional circumstances.

Where the central government has responsibilities in the fields of flood risk management and freshwater, this plan includes area-based elaborations. These elaborations correspond to the division into areas in the Delta Programme. This section concerns the elaborations for the Rhine-Meuse delta (Southwest Delta, Rhine Estuary-Drechtsteden and the area around the major rivers) and the IJsselmeer region (see figure 4). The Coast and the Wadden Region are included in section 6, together with the North Sea. The areas where the central government is responsible for the water quality are described in the catchment area management plans (see section 4).

The starting point for the area-based elaborations is Framework Vision on Infrastructure and Space and the Vision on Cultural Heritage and Space. The preferential strategies set out in the Delta Programme are included in this NWP and will be elaborated by the region. Collaboration between the central government and regions will tie in with the MIRT and relevant area agendas.

Together with other government authorities, the Cabinet is elaborating measures for river widening and dyke improvement, water level management in the IJsselmeer lake and freshwater supplies in the Southwest Delta and the Western Netherlands. In doing so, the Cabinet is keeping to the most recently adopted discharge distribution across the Rhine distributaries. In addition, the Cabinet is seeking to bring about synergy between water policy and other interests, such as the business climate in Rhine Estuary-Drechtsteden.

Appendix 1 provides a further substantiation and elaboration, and also identifies the spatial aspects.

By late 2021, flood risk management around the major waters will have been improved and the freshwater issues will have been tackled. Moreover, opportunities for synergy with other interests around these waters will have been seized.
Figure 4 Flood risk management and freshwater challenges
**Key to figure 4**

<table>
<thead>
<tr>
<th>Opgaven</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Waterveiligheid</strong></td>
<td><strong>Flood risk management</strong></td>
</tr>
<tr>
<td>waterkering op orde brengen, grote opgave</td>
<td>repair flood defence system, major tasking</td>
</tr>
<tr>
<td>waterkering op orde brengen</td>
<td>repair flood defence system</td>
</tr>
<tr>
<td>onderhoud waterkering</td>
<td>flood defence system management</td>
</tr>
<tr>
<td>in stand houden zandig kustsysteem</td>
<td>preserve sandy coastal system</td>
</tr>
<tr>
<td>onderhoudsopgave stormvloedkering</td>
<td>storm surge barrier maintenance tasking</td>
</tr>
<tr>
<td>waterafvoer naar Waddenzee</td>
<td>maintain water discharge into Wadden Sea</td>
</tr>
<tr>
<td>handhaven</td>
<td>limit the consequences of flooding</td>
</tr>
<tr>
<td>gevolgen beperken bij overstroming klimaatbestendig en waterrobuust inrichten</td>
<td>establish climate-proof or water-robust design</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Zoetwater</th>
<th>Freshwater</th>
</tr>
</thead>
<tbody>
<tr>
<td>knelpunten zoetwater</td>
<td>freshwater issues</td>
</tr>
<tr>
<td>geen aanvoer zoetwater en uitzakkende grondwaterstanden</td>
<td>no freshwater supply and falling groundwater levels</td>
</tr>
<tr>
<td>beperkte aanvoer zoetwater en uitzakkende grondwaterstanden</td>
<td>limited freshwater supply and falling groundwater levels</td>
</tr>
<tr>
<td>verzilting inlaatpunten</td>
<td>salinisation of intake points</td>
</tr>
<tr>
<td>waterbuffer IJsselmeer overvraagd te lage waterstanden rivieren (zomer) verzilting en geen aanvoer zoetwater</td>
<td>excessive demand on IJssel lake water buffer</td>
</tr>
<tr>
<td></td>
<td>river water levels too low (summer)</td>
</tr>
<tr>
<td></td>
<td>salinisation and no freshwater supply</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Klimaatbestendige stad</th>
<th>Climate-proof city</th>
</tr>
</thead>
<tbody>
<tr>
<td>gevolgen beperken bij droogte, hitte en hevige neerslag</td>
<td>limit the consequences of droughts, heat and heavy precipitation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Oorzaken</th>
<th>Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>stijging zeepiegel 0,35-0,85 m bodemdaling</td>
<td>0.35-0.85 m rise in sea level</td>
</tr>
<tr>
<td>zouttong</td>
<td>soil subsidence</td>
</tr>
<tr>
<td>sedimentatie en erosie kust</td>
<td>salt wedge</td>
</tr>
<tr>
<td>sedimentatie en erosie rivieren</td>
<td>coastal sedimentation and erosion</td>
</tr>
<tr>
<td>HW = hogere piekafvoer rivier</td>
<td>river sedimentation and erosion</td>
</tr>
<tr>
<td>Rijn: 16.000—18.000 m3/s Maas: 3.800 — 4.600m3/s</td>
<td>Rhine: 16,000—18,000 m3/s Meuse: 3,800—4,600 m3/s</td>
</tr>
<tr>
<td>LW = lagere dalafvoer rivier</td>
<td>LW = decreased low river discharge</td>
</tr>
<tr>
<td>Rijn: 1.000-600m3/s Maas: 20—10m3/s</td>
<td>Rhine: 1,000—600 m3/s Meuse: 20—10 m3/s</td>
</tr>
<tr>
<td>langere perioden van hitte/droogte, weer en extreemere neerslag</td>
<td>longer periods of heat/drought, weather and more extreme precipitation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ondergrond</th>
<th>Subsoil</th>
</tr>
</thead>
<tbody>
<tr>
<td>zoetwater</td>
<td>freshwater</td>
</tr>
<tr>
<td>zout water/brak water</td>
<td>salt water/brackish water</td>
</tr>
<tr>
<td>buitendijks gebied</td>
<td>area outside the dykes</td>
</tr>
<tr>
<td>duinen</td>
<td>dunes</td>
</tr>
<tr>
<td>grens</td>
<td>border</td>
</tr>
</tbody>
</table>

**Rhine-Meuse delta**

As a precautionary measure, the Cabinet is allowing for an increase in the current maximum river discharges in the coming decades. The Cabinet will maintain the distribution across the Rhine distributaries, as laid down in policy, at least until 2050. The Rhine-Meuse delta will continue to be protected in the long term by a closable, entirely open storm surge barrier in the Nieuwe Waterweg.

The main water system in the Rhine-Meuse delta can be divided into three areas. The approach differs for each area. In places where the water level is chiefly determined by the sea water level, the Cabinet will safeguard flood risk management mainly by means of dyke improvements in conjunction with the storm surge barriers. In that part of the area around the major rivers where the water level is chiefly determined by the (peak)
discharge of the rivers, flood risk management will primarily be safeguarded by a combination of dyke improvement and - where relevant and possible - river-widening measures. In the transitional area between the sea-dominated area and the river-dominated area, a combination of both approaches will be used.

For the flood risk management challenges around the Hollands Diep, Haringvliet and the Merwedes, the Cabinet has opted for dyke improvement instead of peak water storage in the Grevelingen lake. For freshwater supplies in the western and south-western Netherlands in the short and the medium term, the Cabinet has opted for optimising the current freshwater supplies and alternative supply routes. These measures form a whole with the measures in the regional water system and among freshwater users.

The measures in Rhine Estuary-Drechtsteden and the Southwest Delta are outlined in figures 5 and 6 respectively, to the extent that the central government is involved in their elaboration. The preferential strategy for flood risk management in the area around the major rivers is shown in figure 7.

**Rhine Estuary-Drechtsteden**

Protection by means of an optimal combination of primary flood defence systems, storm surge barriers and river widening will continue to form the basis for flood risk management in Rhine Estuary-Drechtsteden in the future. Local and regional government authorities, together with the central government, will identify opportunities for mutual reinforcement between water policy and other spatial challenges (such as an attractive business climate). For Dordrecht, opportunities will be identified to achieve the required tolerable risk level by implementing spatial solutions.

The aim for freshwater supplies in the western Netherlands is to expand alternative supply routes from the Lek or the Amsterdam-Rhine Canal in phases. Freshwater supplies in the Bernisse-Brielse Meer lake will be gradually optimised.
Figure 5 Involvement of the central government in the preferential strategy for Rhine Estuary-Drechtsteden

Key to figure 5

Waterveiligheid (Bij in het grijs weergegeven informatie is het Rijk niet betrokken.)

1. Preventie als basis voor waterveiligheid
   instandhouden kust door suppetties

2. Steeds een optimale combinatie van preventieve maatregelen
   Op lange termijn stormvloedkering vervangen dijken — meewegen voorlanden bij toetsing en ontwerp dijken

Flood risk management (At in grey information is the central government not involved)

1. Prevention as the basis for flood risk management
   maintaining coast by means of replenishments

2. Always an optimal combination of preventive measures
   replace storm surge barrier in long term dykes – also consider forelands in assessing and designing dykes
Southwest Delta
The Delta Works have significantly improved flood risk management in the Southwest Delta. The flip side of this is that the tidal movement and natural freshwater-salt water transitions have largely disappeared, as a result of which the quality of the water and nature has deteriorated. This also slows down the economic development of the area. The central challenge for the Southwest Delta is to restore a stable balance between safety, the economy and ecology. A comprehensive development approach - with a better connection being established between water and spatial planning - is paramount.
The current system of dykes and flood defence systems will continue to form the basis for future flood risk management in the Southwest Delta. Peak water storage in the Grevelingen lake is not necessary to improve flood risk management in the Rhine-Meuse delta. For the Oosterschelde and the Westerschelde, the Cabinet has decided to optimise the current flood risk management strategy. To maintain the strength of the coastal flood defence system, the Cabinet has opted for improvement using sand (‘soft where possible, hard where necessary’).

In the central government framework vision on the Grevelingen and Volkerak-Zoommeer lakes, the Cabinet is studying the desirability and feasibility of restoring a limited tidal system in the Grevelingen and salt water in the Volkerak-Zoommeer lake. This central government framework vision is expected to be adopted in 2015.

For the freshwater supply in the Southwest Delta, the strategic supply route of freshwater via Biesbosch/Hollands Diep/Haringvliet will be preserved (see also figure 3 in section 3).

Figure 6 Involvement of the central government in the preferential strategy for the Southwest Delta
Key to figure 6

<table>
<thead>
<tr>
<th>Dutch Term</th>
<th>English Term</th>
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</thead>
<tbody>
<tr>
<td>aanpak zandhonger Oosterschelde</td>
<td>dealing sand demand Oosterschelde</td>
</tr>
<tr>
<td>MIRT-onderzoek Oosterschelde</td>
<td>MIRT-study Oosterschelde</td>
</tr>
<tr>
<td>Agenda van de Toekomst</td>
<td>Agenda for the Future</td>
</tr>
<tr>
<td>plangebied rijkstructuurvisie</td>
<td>Planning area central government framework vision on the Grevelingen and Volkerak-Zoommeer lakes</td>
</tr>
<tr>
<td>Grevelingen en Volkerak-Zoommeer</td>
<td>Replenishments coast</td>
</tr>
<tr>
<td>suppleties kust</td>
<td></td>
</tr>
<tr>
<td>Ondergrond</td>
<td>Subsoil</td>
</tr>
<tr>
<td>zoetwater</td>
<td>fresh water</td>
</tr>
<tr>
<td>zout water / brak water</td>
<td>salt water / brackish water</td>
</tr>
<tr>
<td>overstroombaar gebied</td>
<td>floodable area</td>
</tr>
<tr>
<td>stedelijk gebied</td>
<td>urban area</td>
</tr>
<tr>
<td>havengebied</td>
<td>port area</td>
</tr>
<tr>
<td>primaire kering</td>
<td>primary flood defence</td>
</tr>
<tr>
<td>rijksweg</td>
<td>motorway</td>
</tr>
<tr>
<td>grens</td>
<td>boundary</td>
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</table>

Rivers

The flood risk management policy in the area around the major rivers is based on two cornerstones: river widening and dyke improvement. To provide scope for future measures, the spatial reservations in the Spatial Planning (General Rules) Decree will be adjusted by 2016 at the latest.

The Cabinet will earmark €200 million until 2028 to be able to capitalise on opportunities for river widening. Moreover, the Cabinet highlights the importance of an energetic and adaptive approach to dykes covered in the Flood Protection Programme.

The Cabinet has found that a primary flood defence system along the canalised Hollandse IJssel will no longer be necessary if the dyke stretches along the Neder-Rijn and the Lek are improved in accordance with the proposed new standard.

For the freshwater supplies, in the interim revision to the National Water Plan, the Cabinet has opted for optimisations that facilitate better control and use of the water in the rivers, at the weirs at Driel, Amerongen and Hagestein, for example. The option of transferring water from the Waal to the Meuse in the medium term will be left open.
Figure 7: Preferential strategy for flood risk management in the area around the major rivers
IJsselmeer region

The Cabinet’s broader ambition for the IJsselmeer region is to elaborate, in the most comprehensive way possible, the policy objectives as outlined in the Central Government Framework Vision on the IJsselmeer Closure Dam and the Government Framework Vision on Amsterdam-Almere-Markermeer lake, in conjunction with climate adaptation measures. To this end, the central government is working closely with regional government authorities, industry and knowledge institutes. A coherent package of measures must bring about a more robust water system, with an optimal balance between the designated uses. Additionally, concerted efforts are being made to identify opportunities for synergy between nature development, water challenges and freshwater measures.

In the IJsselmeer region, the supply of nutrients to the water system has decreased. This helps to improve the water quality, but makes the ecosystem less ideal for certain target species. The water quality measures do, however, have a positive effect on other aspects of the ecosystem. Measures aimed at increasing the diversity in habitats, such as phase 1 Markerwadden and the Hoornse Hop sheltering measures, can make the water system more robust in the future.
The average winter water levels in the IJsselmeer will not be allowed to rise to sea level until at least 2050. The water discharge to the Wadden Sea will be safeguarded by a combination of pumping and discharging by gravity. Allowing winter water levels to rise to sea level to a limited extent after 2050 is an option that is being left open: the Cabinet is allowing for a maximum rise of 30 cm in winter water levels in the IJsselmeer lake after 2050. The average winter water levels for the other lakes in the IJsselmeer region will remain the same after 2050.

The strategic freshwater function of the IJsselmeer region is reinforced by more flexible water level management in IJsselmeer lake and Markermeer lake-IJmeer lake and the connected Zuidelijke Randmeren lakes (Gooimeer, Eemmeer and Nijkerkernauw lakes). The first step in flexible water level management will lead to an available freshwater buffer of 400 million m$^3$ in the spring and summer, which is expected to be sufficient until 2050. Figure 8 shows these choices in a diagram. The Cabinet intends to implement the measures in the main water system in conjunction with measures in the regional systems and among the users.

In the IJsselmeer region, too, preventive measures, such as dykes, will continue to be the primary measures for achieving and maintaining the required flood risk management level. In Marken and the IJssel-Vecht delta, options for achieving the required tolerable risk level by means of spatial solutions are being explored.

**Figure 8 Water level management in the IJsselmeer region in winter and in summer.**

**Key to figure 8**

<table>
<thead>
<tr>
<th>Peilbeheer winter</th>
<th>Water level management winter</th>
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</thead>
<tbody>
<tr>
<td>Tot 2050 geen peilverhoging, na 2050 eventueel beperkt meestijgen met zeespiegel</td>
<td>No level increase until 2050, after 2050 possibly allow to adapt to rise in sea level restricted</td>
</tr>
<tr>
<td>Voor en na 2050 geen peilverhoging</td>
<td>No level increase before and after 2050</td>
</tr>
<tr>
<td>Combinatie van spuien en pompen</td>
<td>Combination of discharging and pumping</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Peilbeheer zomer</th>
<th>Water level management summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vanaf 2020 eerste stap flexibel peilbeheer, na 2050 eventueel vervolgstappen</td>
<td>From 2020 first step flexible water level management, possibly follow-up after 2050</td>
</tr>
<tr>
<td>Geen verandering</td>
<td>No change</td>
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</tbody>
</table>
## Overview of milestones

### Table 5 Milestones in area-based elaborations of major waters

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Government framework vision on the Grevelingen and Volkerak-Zoommeer lakes</td>
<td>Adopt</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Adjust spatial reservation for rivers in Barro</td>
<td>Complete</td>
<td></td>
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<tr>
<td>Spatial safety pilot in Marken</td>
<td>Choose preferred alternative</td>
<td>Plan study</td>
<td>Start of implementation</td>
<td>Complete</td>
<td></td>
<td></td>
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<tr>
<td>Spatial safety study in IJssel-Vecht delta</td>
<td>MIRT Study complete</td>
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<tr>
<td>Spatial safety pilot in Dordrecht</td>
<td>MIRT Study complete</td>
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</table>
Section 6: Area-based elaborations for the sea and coast

One kilometre off the coast and further, the central government is the only competent authority and, as such, responsible for the North Sea policy. The North Sea is used intensively and has many designated uses and associated policy objectives. The preservation and reinforcement of these uses call for clear, well-considered choices. Land area preservation is the key theme in the coastal zone, on account of ongoing erosion of the coastline. Flood risk management is well organised along the entire Dutch coast.

The policy for the North Sea is incorporated in the 2016-2021 North Sea Policy Document. This policy document forms an integral part of the National Water Plan and is included in appendix 2, which also describes the spatial aspects. The key points are included in this section. This section also includes the area-based elaborations for the Coast and Wadden Region on account of their close connection with the North Sea. For the entire North Sea coast the Cabinet aims to use sand replenishments where possible and pursues a permanent balance in the coastal foundation zone. In addition, the central government is listening to the wishes of regional authorities with respect to spatial development in the coastal foundation zone. On the Wadden Sea side of the islands and mainland coast, the strategy of dyke improvements currently in place is being consolidated.

On the back of these efforts, the central government intends to contribute to a healthy and economically vital North Sea and coast, and a Wadden Sea where heritage and nature can come into their full advantage.

North Sea

The central government’s North Sea policy sets frameworks for the spatial use of the North Sea in relation to the marine ecosystem. The spatial aspect of the North Sea Policy Document applies to the Dutch Exclusive Economic Zone and the non-administratively classified territorial sea. Other aspects may also relate to the area that has been administratively classified, given that the marine ecosystem and the designated uses at sea interact with (the water on) the land. The 2016-2021 North Sea Policy Document outlines the current use and developments in the North Sea and the relationship with the ecosystem, as well as the vision, tasking and the applicable policy. The North Sea Policy Document, including the appendix Marine Strategy Part 3 (programme of measures), forms an integral part of the National Water Plan.

Long-term vision

The vision on the North Sea has been laid down in the North Sea 2050 Spatial Agenda and incorporated into the North Sea Policy Document.

The Netherlands will benefit from a safe, clean, healthy and ecologically diverse North Sea that helps to provide for economic and social needs. The sea is also of great socio-cultural and historical significance to the Netherlands and it is a source of knowledge. The sea can make an optimal contribution if the natural resilience is (further) restored and increased and its attraction is preserved for everyone. The use of the sea is in a state of transition. The crux of the new policy for the North Sea is: together with civil-society organisations, steering towards desired use in terms of space and time, ecology and economy, and continuing to develop the natural potential of the sea and coast. Central government is aiming for a development-based approach to the sea, one that leaves room for new initiatives and flexible management of the sea.

Based on this vision, the emphasis in the period up until 2050 will be on five themes: building on the North Sea ecology; transition of energy at sea; multiple/multifunctional
use of the space; connecting land and sea; and accessibility/shipping. International collaboration and export opportunities play a role in all five themes.

**The marine ecosystem and designated uses**
The North Sea is a highly complex, open marine ecosystem, without borders and with specific habitats. The shallow and nutrient-rich area is a habitat for marine mammals, a breeding ground for fish and an important migratory route and wintering form many bird species. The marine ecosystem can be used to acquire ecosystem goods (such as fish, sand, shells, oil, gas, wind, tidal and wave power) and to facilitate services for Dutch society (shipping routes, recreation, absorption of CO₂, perception value).

The expected intensification in the use of the North Sea, which is partly the result of an increase in the number of designated uses, demands responsible use of the limited available space. Increasing use is exerting pressure on the marine ecosystem. Policy is required to coordinate the various designated uses and ensure a healthy ecosystem. The 2016-2021 North Sea Policy Document outlines the desired policy for the use of space, within the frameworks of the marine ecosystem.

The central government sets the spatial frameworks, allowing the use of space in the North Sea to develop in an efficient and sustainable manner. Multiple use of space is an important principle in this regard. It offers balanced opportunities for all forms of use of the North Sea.

The Framework Vision on Infrastructure and Space presents the following national spatial challenges for the North Sea:

- the preservation of the coastal foundation and the area-based implementation of the Coastal and Wadden Region sub-programmes of the Delta Programme in association with local and regional government authorities;
- the preservation and protection of Natura 2000 areas and the marine ecosystem;
- maintaining the unobstructed view of the horizon up to 12 nautical miles from the coast;
- providing spatial possibilities for the main network for the transport of (hazardous) substances via pipelines;
- the protection of archaeological values (submerged settlements, shipwrecks and other archaeological values).

Within the European frameworks (Water Framework Directive, Marine Strategy Framework Directive, Birds Directive, Habitats Directive and the Malta convention), the Cabinet is giving priority to the activities that are of national interest to the Netherlands:

- Oil and gas extraction: as much as possible, natural gas and petroleum are extracted from the Dutch fields in the North Sea, in order to optimise use of the potential of natural gas and petroleum reserves in the North Sea.
- CO₂ storage: sufficient room for the storage of CO₂ in depleted oil and gas fields or in underground aquifers.
- Shipping: a whole system of traffic separation schemes, clearways and anchoring areas that can accommodate shipping safely and swiftly.
- Sand extraction: sufficient room for sand extraction for coastal protection purposes, countering flood risks and sand for elevating the land.
- Generation of renewable energy: sufficient room for wind energy and other forms of renewable energy, combined wherever possible.
- Defence: sufficient exercise zones in the North Sea.
The table below provides an overview of the policy choices laid down and elaborated in (the relevant sub-section of) the Policy Document.

<table>
<thead>
<tr>
<th>Category</th>
<th>Overview</th>
</tr>
</thead>
</table>
| **Marine ecosystem**      | - The conservation and recovery of the marine ecosystem are assessed when making spatial planning decisions on activities (section 5.3).  
                           - Natura 2000 areas at sea: Voordelta, North Sea Coastal Zone, the Vlakte van de Raan, Dogger Bank, Cleaver Bank and Frisian Front. Research is being carried out on whether or not the areas of Borkum Reef Ground and Brown Ridge should be designated (section 3.1).  
                           - Programme of Measures for Marine Strategy (section 4.2):  
                             - Existing measures, including in terms of the marine ecosystem, invasive exotic species, eutrophication, pollutants, litter and underwater noise;  
                             - New measures with regard to litter;  
                             - New measures with regard to seabed protection; |
| **Renewable energy**      | - Generating renewable energy (from the wind or otherwise) is an activity in the national interest (section 3.3).  
                           - Space for operational capacity of 4,450 MW of wind energy at sea by 2023 (section 4.3).  
                           - Wind energy areas: Borssele, Coast of Holland, IJmuiden Ver and North of the Wadden Islands. Search areas: strip between 10 and 12 NM adjacent to the Coast of Holland wind energy area. The Central Government does not grant permission for wind farms to be built outside of designated wind energy areas. Within the designated areas, permission is only granted for wind farms to be built within the bounds of the Offshore Wind Energy Act (Wet windenergie op zee, being developed) (section 4.3).  
                           - Development in harmony with other uses of the North Sea:  
                             - design criterion ‘distance between shipping routes and wind farms’;  
                             - design process ‘distance between mining sites and wind farms’;  
                             - policy development with regard to ‘passage and multiple use’; (section 4.3). |
| **Surface minerals**      | - Sand extraction for coastal defences and filling is an activity in the national interest (section 3.4).  
                           - Sand extraction strategy with preferred routes for cables and pipelines (section 4.4). |
| **Oil and gas extraction**| - Activity in the national interest (section 3.5).  
                           - Making the most of the potential of the oil and gas reserves (section 3.5). |
| **CO2 storage**           | - Activity in the national interest (section 3.6).  
                           - Sufficient space for CO2 storage as a temporary tool in the process of developing a fully renewable energy supply (section 3.6). |
| **Cables and pipelines**  | - The activities (wind) energy, oil and gas extraction and CO2 transport, including requisite cables and pipelines, are in the national interest (section 3.7).  
                           - Bundling cables and pipelines; removal obligation for cables and pipelines no longer in use (section 3.7).  
                           - Honing removal obligation for pipelines (section 3.7).  
                           - Checklist for determining removal obligation for cables or pipelines revised (section 5.3). |
| **Shipping**              | - Activity in the national interest (section 3.8).  
                           - Maintaining a system of traffic separation schemes, clearways and anchorages capable of accommodating vessels safely and smoothly (section 3.8).  
                           - Implementing measures to reduce pollution caused by shipping (merchant vessels, fishing vessels, offshore, supply and recreation) (section 4.2). |
| Defence                                      | Activity in the national interest (section 3.9).  |
|                                            | Sufficient exercise zones in the North Sea (section 3.9). |
| Fishing, aquaculture and mariculture       | Fostering responsible fishing and aquaculture practices and balanced use of fish stocks, striving towards a state of equilibrium between fishing and nature and a different division of responsibilities between government and industry (section 3.10). |
|                                            | Continuing to contribute to the primary objectives of the Common Fisheries Policy (CFP) and implementing measures with regard to the marine ecosystem (section 4.2). |
| Underwater Cultural Heritage               | The conservation of underwater cultural heritage is assessed when making spatial planning decisions on activities (section 5.2). |
| Tourism and recreation                     | Facilitating and encouraging the tourism and recreation sector as a network partner to a partnership between entrepreneurs, market institutions and research institutes (section 3.12). |
|                                            | Engaging in dialogue with local and regional government authorities and other parties where spatial planning or other policy developments in terms of the North Sea impact marine and coastal recreation (section 3.12). |
| Interaction between land and sea           | When formulating spatial planning policy, specific attention needs to be paid to the interaction between land and sea, having due regard for the implementation of the directive on maritime spatial planning. |
| International collaboration                | Thematic approach to partnerships with neighbouring countries (section 6.3). |

The spatial implications of the above are shown in the framework vision map (see figure 9) of the North Sea.
Figure 9 Framework Vision Map of North Sea
Implementation of social challenges
As part of the Marine Strategy Framework Directive, measures have been and will be
taken to make and keep the ecosystem healthy and make its use more sustainable.
Moreover, the developments in wind energy at sea and sand extraction are leading to a
major social challenges that calls for new policy for the period 2016-2021.

1. Programme of measures for marine strategy
The Water Framework Directive provides an integrating legal framework for the
protection and preservation of the marine environment, the prevention of its decline and
recovery of the environment where it was harmed and where this is feasible. In addition,
the framework is designed to prevent, reduce and eliminate, pollution, creating a
coherent and representative network of protected areas in the North Sea and
encouraging sustainable use. The ultimate goal is to achieve and preserve a ‘good
environmental status of the marine environment’ by 2020 at the latest.
The crux of the Water Framework Directive for the Netherlands is the obligation to adopt
a marine strategy for the Dutch part of the North Sea. The marine strategy should take
an ‘ecosystem-oriented approach to the management of human activity’ and allow the
’sustainable use of marine goods and services for current and future generations.
The marine strategy comprises the following three steps: (part 1) initial assessment of
environmental status, description of the good environmental status in 2020,
environmental targets and indicators and the policy challenges until 2020, (part 2) Water
Framework Directive Monitoring Programme and (part 3) programme of measures. The
first two steps were laid down in 2012 and 2014 respectively; the third step – the Water
Framework Directive programme of measures – is summarised in the 2016-2021 North
Sea Policy Document and has been added to this NWP as appendix 5. For a complete
overview, the descriptions of the good environmental status, the environmental targets and the indicators are also included. The measures set out in the programme will help ensure that the good environmental status is within reach in 2020 or in the subsequent period. The crux is that the current policy efforts to reduce pollution of and disruption to the ecosystem must be continued in order to achieve the good environmental status. Additional policy efforts are needed to protect the ecosystem of the Frisian Front soil and Central Oyster Grounds and to reduce marine litter (‘plastic soup’), including microplastics).

2. Room for wind energy at sea

The parties to the Energy Agreement for Sustainable Growth have agreed that 4,450 MW of wind power at sea will be in operation by 2023. This means that an additional 3,450 MW of wind power at sea must be installed, in addition to the existing wind farms and the ones under construction.

The NWP 2009-2015 designated the Borssele and IJmuiden Ver areas and named the Coast of Holland and the area to the north of the Wadden Islands as search areas. In 2014 - through an interim revision of the NWP 2009-2015 – the Coast of Holland the area to the north of the Wadden Islands were designated for wind energy at sea. This policy is being continued in the NWP 2016-2021.

Additional policy efforts and investments are needed to achieve this objective. Given the space available within the designated areas and the wind energy areas yet to be designated, the task is to find wind farm locations where 3,450 MW can be installed cost-effectively, while allowing for other interests in the North Sea.

In September 2014, the Cabinet indicated its wish to achieve the 3,450 MW target in the wind energy areas of Borssele, Zuid-Holland and Noord-Holland. Installing wind energy capacity closer to the coast costs less than further offshore. The Cabinet wants to add a strip of no more than two nautical miles to the Zuid-Holland and Noord-Holland areas within the 12-mile zone, allowing the area to be used more efficiently in terms of cost and space. The strip/areas within the 12-mile zone have not yet been designated and are beyond the scope of the present Policy Document on the North Sea. The designation decree will be worked out in greater detail in a partial revision of the National Water Plan 2016-2021. To this end, an environmental impact statement will be drawn up, reviewing the alternatives. An Appropriate Assessment will also be drawn up.

As part of the Energy Agreement, it has been agreed that the government will provide a robust statutory framework to achieve the agreed target for wind energy at sea. To be able to put this new system into practice, a wind energy at sea bill has been prepared in consultation with the wind energy sector. The bill allows the central government to direct the spatial incorporation of wind energy and carefully balance all interests in the North Sea.

The system contributes to an efficient use of space, cost reductions and accelerating the rollout of wind energy at sea. Within a designated area, the central government will take so-called parcel decisions, laying down the site-specific conditions for the construction of a wind farm on that parcel. When drawing up a parcel decision, the central government will also study the structure of the relevant parcel and the soil, local wind speeds and information on water in the relevant parcel. Together with the parcel decision, these studies will provide essential information on which market parties can base their tender, by way of a subsidy tender. The party submitting the best tender will then be granted the exclusive right to build a wind farm on the parcel.

3. Room for sand extraction

The sand extraction strategy is aimed at proper and cost-effective management of available sand reserves in this zone. Cost-effective sand extraction can be achieved by
extracting sand as close to where it is needed, on the coast or on land. Priority is given to
the sand demand for the coming years and the sand extraction areas required to provide
suitable sand for replenishment and elevation. The areas with the lowest extraction costs
have the highest priority.
Cost-effective sand extraction in the reserved zone is put under further pressure due to
the construction of wind farms at sea and power cables through the areas with the most
cost-effective sand reserve. If, for other uses (such as cables, pipelines and wind
turbines), it is desirable to use the zone between the continuous isobath at NAP
(Amsterdam Ordnance Datum)-20 metres and the 12-mile limit, solutions will be sought
that do not materially harm the extractable sand reserve. As for cables and pipelines, the
aim is to combine these with the existing infrastructure. Preferred routes for this have
been marked on the framework vision map of the North Sea Policy Document. If a
solution that does not affect the sand reserve proves impractical, an economic
assessment will be made on the basis that the costs associated with the other use must
balance the costs of sand extraction. If this means additional costs for the sand
extraction, these will be borne by the party proposing the other use.

Assessment framework for activities in the North Sea
The assessment framework outlined in the North Sea policy document is the mechanism
that the central government uses to ascertain whether activities at sea are permitted.
The assessment framework combines relevant policies and outlines how decisions on new
activities are arrived within the European and international frameworks. It also outlines
what action to take if various activities of national importance clash. The assessment
framework is a policy rule and requires the competent licensing authority to act in
accordance with this framework. The assessment framework applies to all activities in the
North Sea that require a permit under all laws and regulations governing the North Sea,
the territorial sea and the Exclusive Economic Zone (Water Act, Earth Removal Act,
Nature Conservation Act, Flora and Fauna Act, Environmental Management Act, a number
of shipping acts and the Mining Act\(^2\)\(^3\)) As such, the assessment framework is particularly
important for North Sea users who want to apply for a permit and for licensing
authorities. It is also instrumental in achieving and maintaining the good environmental
status under the Water Framework Directive.

Coast
The coastal foundation zone is the sand bed between the inside edge of the dunes and
the NAP (Amsterdam Ordnance Datum) -20m isobath in the North Sea. The sand bed is
part of the coastal zone, which consists of dunes, dykes and coastal locations with a wide
variety of uses.

The coast is now safe, partly because the weak links have been fixed. However, the
coastline is subject to ongoing erosion caused by sea-level rise. Without intervention, the
Netherlands would shrink by an average of 1 m a year along the entire coastline. As
such, preservation of land area is paramount in relation to the coast. Combined with this
are the goals for safety in the long term and good spatial development.

Coastal safety and sandy system
The Cabinet once again acknowledges the decision to use sand replenishments to prevent
the coast of the Netherlands from shrinking as well as providing a stable basis for long-
term flood risk management of the Southwest Delta, the Coast of Holland and the
Wadden region.
To this end, the Cabinet aims to achieve a lasting balance in the coastal foundation zone,
with the volume of sand replenishments being adjusted to the rise in sea level. A better
understanding of the sandy system is required to be able to programme replenishments
effectively and efficiently. To this end, the research and monitoring programme entitled

\(^2\) To the extent that aspects that impact the North Sea water system are involved
\(^3\) http://www.noordzeeloket.nl/ruimtelijk-beheer/beleid-en-regelgeving/wetten/
‘Coastal genesis 2’ is being stepped up. Until 2020, this programme will include small-scale pilot projects and the replenishment volume of 12 million m³ per year is maintained. In around 2020, the knowledge gained from the Coastal Genesis 2 programme will be pooled and a decision taken with respect to increasing the replenishment volume and/or carrying out two large-scale pilot projects to achieve a balance in the coastal foundation zone. All processes in the sandy system are shown in figure 10.
The strength of the coastal flood defence system will be maintained according to the principle of ‘soft where possible, hard where necessary’. The consequences of the bill for new flood risk management standards and the decision to preserve the current flood defence system will be translated into criteria for the management of dunes and other parts of the coastal flood defence system. With regard to the safety in areas outside the dykes in 13 coastal locations, the Cabinet has decided that apart from maintaining the basic coastline\(^4\), the central government does not have to take any additional measures to keep safety outside the dykes stable.

The Nature Vision of the Cabinet (see section 7) places a great deal of emphasis on building with nature. The central government encourages this by, for example, using natural sand movement in coastal management and dealing flexibly with the basic coastline wherever possible. In recent years, dynamic coast and dune management has been applied frequently in the coastal zone. The best example is the Sand Engine for the coast of Zuid-Holland, which scatters 20 million m\(^3\) of sand through natural processes in the coastal foundation zone. Dynamic coastal management is continued and further operationalised by collaboration between coast and dune managers, supported by a guide for coastal management. This creates more opportunities for commensurate growth for the dunes behind the first row of dunes and for biodiversity.

With a view to the sustainability objectives, the central government is aiming for a reduction in CO\(_2\) emissions during the implementation of sand replenishments.

**Spatial development of the Coast**

The Netherlands continues to aim for applying Integrated Coastal Zone Management according to the 2012 European recommendation. The 2013 National Coastal Vision presented collectively by the government authorities represents a comprehensive vision for the development of a safe, attractive and economically robust coast. The regional government remains responsible for spatial development. The Cabinet wants to contribute to the regional preference for multiple use of the flood defence systems and to experiment with agreements on adaptation concepts for areas around the flood defence systems while preserving safety. The Coastal Policy will be revised in 2015 to create greater scope for these processes.

In the coming period, an attempt will be made to ascertain how more social goals can be served with the amount of sand available for sand replenishment. In this context, possibilities for further flexibilisation of the coastline preservation will be reviewed. This means that nature will be given more free rein in certain places and less in others, depending on the requirements for flood defence system, beach recreation or other purposes.

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\(^4\) The coastline that serves as a reference for the coastal conservation policy
Developments along the coast have an impact on the sea and vice versa. In the coastal zone, for example, connections are required for cables and pipelines at sea and supply and construction terminals for wind farms at sea and other offshore activities. The Cabinet considers these land/sea interactions important and has incorporated these in the process for maritime spatial planning, in accordance with the new European directive on maritime spatial planning and, hence, in the North Sea Policy Document. An unobstructed view of the horizon on the sea from the coast remains a spatial quality of national importance. Any conflicts between this interest and other national interests will be given careful consideration.

**Wadden Region**
In line with the policy choices regarding the sandy system, the Cabinet has opted for maintaining the strength of the coastal flood defence system of the Wadden islands according to the principle of ‘soft where possible, hard where necessary’. For the Wadden Sea side of the islands and for the mainland coast, the existing strategy of dyke improvements will be continued and an innovative, comprehensive approach will be pursued. Apart from focusing mainly on the coastal foundation zone, the research and monitoring programme for the sandy system will devote specific attention to the Eems-Dollard estuary.

In 2007 the Framework Vision on the Wadden Sea was adopted. The main objective of the Framework Vision on the Wadden Sea is "the long-term protection and development of the Wadden Sea as a nature reserve and conservation of the unique, panoramic landscape". The Framework Vision on the Wadden Sea outlines the Cabinet’s development outlook for the Wadden Sea for the period up to 2030. This development outlook reflects the sustainable development envisaged for the area. As the planning period of the Framework Vision on the Wadden Sea ends in early 2017, the Framework Vision on the Wadden Sea and, by extension, the relevant sub-section in the Spatial Planning (General Rules) Decree will be evaluated in 2015 in anticipation of a potential Framework Vision on the Wadden Sea.

**Overview of milestones**

**Table 6 Milestones in area-based elaborations for the sea and coast**

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<tr>
<td>Coastal genesis</td>
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<td></td>
<td>Decision-making continued</td>
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<td>Coastal Policy</td>
<td>Revise</td>
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<tr>
<td>Framework Vision on the Wadden Sea and sub-section on the Wadden Sea in the Spatial Planning (General Rules) Decree</td>
<td>Evaluate</td>
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<tr>
<td>Water Framework Directive</td>
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<td>Revision part 1</td>
<td>Achieving and maintaining good marine environmental status. Revision part 2</td>
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<td>Revision part 3</td>
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Section 7: Water and environment

Water is never isolated from the environment. It affects other interests and other interests, in turn, have consequences for the water. Central government therefore directs the coordination between the water challenges and environmental issues.

This section presents the Cabinet’s vision on the link-up between water and spatial development and spatial adaptation. Later, there will be a discussion about the policy frameworks for a number of specific topics, in anticipation of the Environmental Vision: water and nature, water and renewable energy and shipping. Drinking water is left aside here, as its great importance has already been described in the 2014 Drinking Water Policy Document. This section also provides an overview of the uses allocated to the national waters. Finally, the water policy is outlined in an international perspective, in which innovations play an important role.

As such, the central government is committed to better connect challenges and measures relating to water and space with each other, in terms of both spatial design and decision-making. The intended effect is that opportunities for incorporation, linkage, comprehensive elaboration and smart combinations are taken maximum advantage of (see figure 11).

Better connection between water and space

It is important to connect water and space more effectively. The performance of the water challenges and implementation of water measures are therefore coordinated with other relevant spatial challenges and measures in the area, so that scope, programming and financing are better harmonised or, even better, reinforce each other. In this regard, the Cabinet is also striving for comprehensive combinations, in which the spatial organisation plays an important role in resolving the water challenges. Conversely, when undertaking the water challenges, it is important to take spatial challenges into account at an early stage. The more effective connection which is desired between water and space applies to all challenges in the area of flood risk management, freshwater and water quality.

A reinforcement of the relationship between the Multi-year Programme for Infrastructure, Space and Transport (abbreviated as MIRT in Dutch) and water can contribute to this in the short term. This reinforcement has, in part, already been put into effect, as water is on the area agendas that the central government and the regions have drawn up together. The rules of the MIRT (exploration, plan elaboration and realisation) are also applied within the Delta Programme. In the Flood Protection Programme, for example, each dyke improvement project starts with a wide-ranging exploration phase. The manager involves the area partners in this in order to jointly identify linkage opportunities. For the purposes of the future update of the area agendas, further steps will be made to integrate water and space even more effectively by means of area-based studies and explorations.

Reinforcement between ‘water’ and the MIRT is part of the MIRT innovation programme. With a view to this better connection, decision-making on complex water challenges, which goes much further than flood risk management, freshwater or water quality alone, will be addressed in the MIRT Consultation Committee. Exceptions are decisions that, due to their urgency, require a different timeline or measures that, in the opinion of the MIRT parties, can be taken at a different table, for example, because they are relatively minor measures or involve challenges for which there is wide support. In the MIRT Consultation
Committee, the representatives of the water sector and join the debate on and participate in decision-making on this wider challenges that is connected with water.

In the longer term, the central government is striving towards a single National Water Consultation Committee and, using the area agendas and other instruments, is seeking to take a wide-ranging approach and encourage greater collaboration participation by all parties to deliver tailored solutions wherever possible. An adaptive approach is also appropriate here.

**Figure 11** Incorporation, linkage, comprehensive elaboration and smart combinations
The Delta Programme 2015 describes how the consultation structure of the Delta Programme can help in the selection of stretches and areas where broad, combined solutions are envisaged, such as river widening, and stretches calling for ‘regular’ dyke improvement with linkage opportunities.

In the Administrative Agreement on the Delta Programme 2014, parties state that ‘combining water policy and spatial policy permanently on account of their mutual dependence is essential to achieving the objectives of the Delta Programme’ and that ‘this obliges the central government, provinces, municipalities and water boards to strive for the mutual reinforcement and interconnectivity on the various scales’. There is time to integrate the water challenges, where possible, in its entirety with other ambitions, for nature and construction, for example. This is an important feature of adaptive delta management, as it brings new, efficient and sustainable solutions within reach. The rules of the Flood Protection Programme offer opportunities for linkage, on condition of co-financing if need be. All parties involved will be consulted, at the level of the projects and at the level of the programming of the Flood Protection Programme (which looks six years ahead, with a preview of the next six years).

The experiences with these methods will be evaluated in 2017. Based on the evaluation, the central government will determine the subsequent steps in consultation with the local and regional government authorities.

**Spatial adaptation**

The central government, provinces, municipalities and water boards have a shared ambition that - by 2050 - the spatial planning in the Netherlands is as climate-proof and water-robust as possible, eliminating any incidental flood-related risks of damage and victims, to the extent that this is reasonably feasible. Climate-proof or water-robust design will therefore be part of policy and practice by 2020. Central government is also involved in a number of regional and local spatial deliberations. In those cases, the central government, together with the government authorities involved, will analyse the water-robustness and climate-proofness of the relevant plan area, translate the results of this analysis into a supported ambition and an adaptation strategy with concrete goals, and safeguard the policy-based and legal operation of this ambition for the purposes of implementation (‘knowing, wanting and working’).

Central government will ensure that the Water Review is preserved as a statutory process tool to allow climate-proof and water-robust design to factor in spatial developments at an early stage of the spatial process. The explanatory notes to the Environment and Planning Act state that the motivation requirements and consultation obligations, which are now intrinsic features of the Water Review, will be included in the implementation regulations of the Environment and Planning Act so that the target range of the Water Review is fully safeguarded. The government authorities will draw up the

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**Key to figure 11**

<table>
<thead>
<tr>
<th>Water en ruimte verbinden</th>
<th>Connect water and space</th>
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<tr>
<td>Samenwerken voor het water: maatwerk met brede blik</td>
<td>Working together for the water: customization with broad vision</td>
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<tr>
<td>Inpassen - bijvoorbeeld dijkenversterking, rekening houdend met bestaand gebruik</td>
<td>Incorporation – e.g. dyke reinforcement, taking into account existing use</td>
</tr>
<tr>
<td>Rivierverruiming - in plaats van dijkenversterking</td>
<td>River widening - instead of dike reinforcement</td>
</tr>
<tr>
<td>Meekoppelen - met beperkte uitbreiding van gebruiksfuncties</td>
<td>Linkage – with limited expansion of control functions</td>
</tr>
<tr>
<td>Integrale gebiedsentwikkeling - met grootschalige uitbreiding van gebruiksfuncties</td>
<td>Comprehensive elaboration – with large scale expansion of control functions</td>
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<tr>
<td>Slimme combinaties - toepassing meerlaagsveiligheid</td>
<td>Smart combinations – application multi-layer safety</td>
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</tbody>
</table>
Guide to Spatial Adaptation together and make an Incentives Programme for Spatial Adaptation available as helpful tools. Central government is a partner in the Incentives Programme for Spatial Adaptation, 

As the central government is responsible for ensuring that vital (and vulnerable) national functions - such as energy supply, wastewater chain, drinking water supply, hospitals and emergency communication during disaster management - are more flood-proof by 2050 at the latest and will adopt policy and, if necessary, legislation for the purpose by 2020 at the latest. The National Adaptation Strategy and the National Environmental Vision will flesh this out in more detail.

**Nature Vision**

In 2014, the Cabinet presented the national nature vision “Natuurlijk verder” (Moving On Naturally). Central and provincial will be responsible for the joint development of an associated social implementation programme. The essence of the nature vision is radical change in thinking: from protecting nature from society to reinforcing nature with society. The central government wants to set an example in this regard.

In the implementation of measures for flood risk management, water quality and freshwater supplies, the Cabinet sees opportunities to link in nature objectives. The central government will provide opportunities for this wherever it can. The aim of doing so is, on the one hand, to have nature combinations included at an early stage - the exploratory phase - and, on the other, to select actual design and implementation solutions that are able to adapt to natural processes and build with nature (eco-engineering). A good case in point is our North Sea coast, where the replenishment sand is scattered across the coastal foundation zone through natural processes.

In the national nature vision, the Cabinet has also concluded that, due to changes in climate and society there is an increasing need for managing by the conditions of natural processes and less for managing by specific species and habitats. The preservation goals for the designated Natura 2000 areas will remain in force. This is an important notion for water and aquatic nature: over the last few centuries, the whole of the Netherlands has undergone redevelopment, the Dutch waters being no exception. Since the end of the nineteenth century, the rivers have been straightjacketed in their beds, the Zuiderzee was dammed in 1932 and the Delta in Zeeland has changed drastically in the course of the twentieth century as a result of its damming following the 1953 flood disaster. The morphological processes in those waters are still trying to discover a new equilibrium, the result being that the conditions for nature are in a constant state of flux. A well-known example is the sand demand in the Oosterschelde and the Wadden Sea.

By way of linkage – within the changing conditions - the best possible conditions are thus preserved and created for nature in the national waters.

For this planning period of the NWP (2016–2021), the Cabinet will safeguard the financing of the Natura 2000 measures in the major waters. The Cabinet will use the planning period to determine the challenges for the following generation of Natura 2000 management plans.

**Renewable energy**

In September 2013, a large number of parties signed an energy agreement under the auspices of the Social and Economic Council of the Netherlands (SER). The Cabinet has adopted this. Some of the goals are to increase the renewable energy share to 14% in 2020 and to 16% in 2023, to save energy and to modernise the environmental policy. These have been included in the 2050 Climate Letter and the 2014 Environmental Modernisation letter. By way of the NWP, the water policy can contribute to the objectives for renewable energy, especially in the area of energy generation, energy storage and energy transport.

The Cabinet has formulated the following policy challenges elements:
1. Utilising and making space (state-owned land) available for renewable energy. An exploration will be launched into the potential space within the central government’s own land (such as flood defence systems, engineering structures, shore faces, dykes and waterways) for renewable energy. The Cabinet also wants incorporation of renewable energy (generation, storage and transport) to become an integral part of the area policy, by making the MIRT more sustainable.

2. Within the bounds of flood risk management, there may be room in the land for taking advantage of synergy and opportunities for energy generation or energy storage. Therefore, the Cabinet will carry out an analysis in 2015 to screen the regulations for options and obstacles for the use of renewable energy.

3. Being in charge of the main water system, the central government provides a role model for other participants in the water policy. For this reason, the central government’s implementation contracts for Rijkswaterstaat include goals for the generation of renewable energy. Implementation will be formed in a comprehensive and sustainable manner.

4. Rijkswaterstaat will make land available for initiatives aimed at the use of renewable energy for user fees based on market rates. This may involve expanding current initiatives for wind energy and seawater/freshwater action. There are already initiatives underway, such as:

- wind turbines in areas managed by the central government, such as the Krammer locks, the Tweede Maasvlakte and the IJsselmeer Closure Dam;
- osmotic power plant in the IJsselmeer Closure Dam;
- tidal power plant in Brouwersdam;
- biomass on and around the flood defence system;
- using engineering structures for renewable energy (such as solar cells).

The experience gained with these pilot projects will demonstrate whether wider application is possible and desirable.

**Shipping**

Partly given its economic importance, the shipping function has been elaborated in detail in the Management and Development Plan for the National Waters, which lays down how Rijkswaterstaat maintains the navigation channel and deals with locations with actual shipping problems.

The depth of the channel is maintained by means of dredging. The implementation of measures for the Water Framework Directive, Room for the River and other river measures (such as modification of quays) may cause the channel to sand up.

The party taking the initiative must prevent its initiatives from having consequences for the management and maintenance of the channel or compensate for these consequences. Financial compensation for any additional dredging will be the final step; the aim is first and foremost to prevent sanding up by choosing the right location and optimising design. The starting point for this is the directive from the Central Commission for the Navigation of the Rhine. For the Waal, this directive assumes a guaranteed bottom position of 2.80 m below the agreed low river level.

The Cabinet has concluded that meeting the policy goals for shipping, flood risk management, water quality and nature at specific locations presents a major challenge for initiators and managers. However, there are also opportunities for taking measures that will contribute to multiple goals. An example are the erosion control dams constructed parallel to the river flow. These can contribute to maintaining the depth of the channel, lowering the water level and meeting water quality targets.

As part of Room for the River, Rijkswaterstaat is carrying out a pilot project with erosion control dams constructed parallel to the river flow. The effects will be monitored for a period of 3 years. Based on the results, a decision can be made as to whether it is useful
to construct more erosion control dams parallel to the river flow of the Rhine distributaries, including the IJssel. The erosion control dams constructed parallel to the river flow are expected to provide a (local) solution for sanding up in certain river sections, but they cannot be applied everywhere. This means that dredging will remain necessary, but probably on a smaller scale.

**Designating uses for national waters**

The Water Act dictates that the designated uses of the national waters be laid down in the National Water Plan. The Cabinet has opted for designating uses with caution. This plan only designates uses that, under (statutory) obligations, set specific requirements for the management or use of the national water in question.

In or on the basis of this NWP, the following uses are designated: drinking water protection, Natura 2000, shellfish waters and swimming water. The national waters designated as waterways are also indicated.

Specific measures for these areas are outlined in the Management and Development Plan for the National Waters (Bprw). In addition to the designation of uses in the NWP and Bprw, there is the Register of protected areas. A summarised version of this register forms part of the catchment area management plans and hence of the NWP. The register contains an overview of the areas that, under specific regulations, are designated as protected areas.

<table>
<thead>
<tr>
<th>Use</th>
<th>Explanation</th>
<th>Map image</th>
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<tbody>
<tr>
<td>Drinking water protection</td>
<td>The drinking water intake points in the national water are designated in the NWP. The bodies of water containing intake points are the bodies of water referred to in article 7 of the Water Framework Directive. As part of the implementation of the Water Framework Directive, drinking water protection zones are introduced. The protection zones around the existing intake points are laid down in the Bprw.</td>
<td>Figure 12</td>
</tr>
<tr>
<td>Natura 2000 areas</td>
<td>A large part of the national waters has been designated as Nature 2000 areas. These areas are demarcated in the designation decrees. The current boundaries are stated in the catchment area management plans.</td>
<td>Figure 12</td>
</tr>
<tr>
<td>Swimming water</td>
<td>The swimming water use is allocated to individual locations in the national waters in the Bprw. The provinces designate the swimming water locations on an annual basis. A province can only designate a swimming water location in a national water with the permission of the Minister for Infrastructure and the Environment through designation of the 'swimming water’ use in the Bprw. As the water manager, Rijkswaterstaat is responsible for the quality of the swimming water in all swimming water locations in national waters.</td>
<td>In Management and Development Plan for the National Waters</td>
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<tr>
<td>Shellfish waters</td>
<td>Implementation of the Water Framework Directive makes it possible to meet most water quality requirements for the shellfish water use. The aspect of bacteriological quality is beyond the scope of the Water Framework Directive. Good bacteriological quality is important for the safe consumption of shellfish. Designation as shellfish water therefore means that requirements can be set for the bacteriological quality of shellfish waters.</td>
<td>Figure 12</td>
</tr>
<tr>
<td>Shipping</td>
<td>The waterways are designated in the Framework Vision on Infrastructure and Space (SVIR). The shipping use is elaborated in detail in the Bprw.</td>
<td>In SVIR</td>
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Figure 12 Designation of drinking water intake points in national waters, shellfish waters and Natura 2000 areas
**International**

The ‘International Water Ambition’ reflects central government’s vision on the entire international water chain: politics, diplomacy, administrative organisation, legislation, management of infrastructure, maintenance, technology, innovation, knowledge and finance. This sub-section summarises the essence. A link between the national approach and the international market is an important motive for successful international collaboration. Dutch knowledge and expertise of water contributes to water security and resilience in the face of water-related disasters. This spawns synergy between trade promotion, development cooperation, knowledge development and water diplomacy, aimed at sustainable growth worldwide.

Worldwide, water management is paramount in adapting to climate change. The awareness is growing that prevention of water-related disasters costs a fraction of the expenditure associated with water damage and recovery after the disaster, while at the same time preventing a great deal of human sorrow. In many places in the world, substantial amounts will have to be invested to defend populations against the changing climate and rise in sea levels. This calls for new coalitions in water management, urban planning, agriculture, industry, nature management and the energy sector, bringing with it a great need and - at the same time - opportunities for innovation and intensifying international collaboration. That is an excellent opportunity to put Dutch knowledge and expertise into practice in the rest of the world. In international collaboration, the Cabinet, bearing in mind the experience that proactive, prevention-oriented water protection works, the Cabinet, is giving priority to reducing the risk of water-related disasters and reinforcing defences. With regard to water quality, thanks to its involvement in the international Rhine and Meuse Committees, the Netherlands has a great deal of experience with a joint approach at the level of the entire catchment area.

The new agenda for aid, trade and investments contributes to a just world, while at the same time offering room for enterprise. Key items on the agenda are: sustainability; sharing knowledge; co-creation; co-operation between the central government, other government authorities, the business community, knowledge institutes and non-governmental organisations; and maximum utilisation of opportunities for private earning, so that water security is less dependent on public budgets. Scale and complexity of global (water) issues are increasing rapidly. The necessity of a comprehensive approach requires more interaction with other industries, such as the energy and food supply sectors. With its knowledge, the Netherlands will assist the World Bank in tackling water problems in the world. And the Cabinet will collaborate closely with the WASH alliance (Water, Sanitation and Hygiene) of non-governmental organisations to integrate sustainability into the foreign water and sanitation programmes.

The International Water Ambition has elaborated the ambitions and objectives into six policies:

1. The Netherlands as a delta country in the world
2. Global water governance
3. Coalition and partner countries
4. Focus on innovation
5. From sectoral to intersectoral
6. Using added value of EU instruments

New starting points in the policy agenda are:

- The focus shifts from a reactive treatment of symptoms to a preventive approach to water risks, in a coalition with national and international partners.
- A balance is sought between public and private governance: without proper public embedding, no proper private water business.
- The search for financing is being expanded: from primarily public funds to private earnings models, enterprise and innovative concession granting.
- The focus on master plans shifts to the implementation of no-regret actions.

**Innovation**

As described in the International sub-section, there is a close relationship between the national approach and international market. The Cabinet sets great store by the application of innovative solutions for water management and water-robust and climate-proof design, in order to tackle its own challenges. As such, the Cabinet wants to create a strong home market. Examples include the design of smart IT solutions (such as smart cities and smart water management) and the smart use of natural processes in the improvement of flood defence systems (such as the sandy solution for the Houtribdijk). The Netherlands is thus showcasing innovative solutions that can then be marketed abroad, which is in line with the Cabinet’s ambition in its policy on top sectors. De Top Sector Water will be involved in the further elaboration of this draft NWP, in order to take maximum advantage of the opportunities that the Dutch water challenges offers for the water sector.

Joining forces in the area of knowledge and innovation makes the Netherlands stronger as a whole. The national Water and Climate Knowledge and Innovation Programme is aimed at coordination and collaboration at all stages, from fundamental research to practical applications, with the direct involvement of the knowledge seekers and end users. Pooling financial resources will make it easier to acquire external funds from, for example, the EU.

A focal point in innovation is smart water management. New technologies and data mean new opportunities for water management. ICT and the growing amount of information that is generated provide opportunities for monitoring the water system more accurately, for example, with respect to water quality, water levels, the condition of the flood defence systems and any damage incurred. Examples include the use of sensors (as in the IJkdijk, for example), the collation of data from other sources (‘big data’ and opportunities to respond to or even anticipate changes to the water system more quickly and effectively, preventing consequential damage. Other parties, including individual residents, are also becoming involved in planning and implementation. Parties with open data are able to develop new applications with new social initiatives and innovations. Especially in urban areas, where many different challenges elements come together and many parties are involved, such smart solutions and new technologies offer new opportunities for a satisfactory operation of the water system and seizing linkage opportunities. Examples include dynamic traffic management (quicker diversionary routes in case of pluvial flooding on roads), energy generation (the ‘smart polder’) or recovering raw materials (for example, phosphates from urine.

The Cabinet is working on an open-data policy. The Cabinet also aims to develop an area-based, comprehensive approach according to the concept of ‘smart cities’ in a number of cities, using design. Actual cases in point are Digital Delta and the NL Smart Cities platform. For the National Environmental Vision, a study is being made of what is
required to restore the digital infrastructure and integrate it into the physical water infrastructure.

**Overview of milestones**

**Table 7 Milestones in water and the environment**

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<td>Method to establish better connection between water and space</td>
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<td>Knowledge Portal and Guide to Spatial adaptation</td>
<td>Evaluate</td>
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<tr>
<td>Incentives Programme for spatial adaptation</td>
<td>Annual update</td>
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<tr>
<td>Policy and regulations on vital and vulnerable uses</td>
<td>In progress</td>
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<tr>
<td>National Adaptation Strategy</td>
<td>Draft</td>
<td>Adopt</td>
<td>Evaluate</td>
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<tr>
<td>Screen renewable energy regulations</td>
<td>Implement and complete</td>
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<td>Social implementation programme for the Nature Vision</td>
<td>Complete in 2014</td>
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<tr>
<td>International Water Ambition</td>
<td>Start</td>
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Section 8: Financing

Tackling the water challenges costs money. This section provides an insight into the financing implementation of the National Water Plan during the planning period, with a preview of the water policy in the long term.

The Cabinet’s ambition is that the central government’s tasking - in financial terms - remains at a socially acceptable level within the planning period and in the long term.

Central government, water boards, provinces, municipalities and drinking water companies are investing approximately €7 billion a year (2013) in the Dutch water tasking. The central government covers approximately 17% of all costs. This percentage was lowered in recent years due to efficiency measures at the central government in construction, management and maintenance, and a shift of part of the costs to the water boards.

Flood risk management

Proper protection of the Netherlands will require several billion euros in investment over the next few decades. A combined approach to the flood risk management tasking resulting from, for example, the new standardisation, soil subsidence and climate change, ensures optimal and efficient investments. A cost estimate of the new investment tasking associated with the Delta Programme 2015 up to and including 2050 comes to approximately €20 billion, of which around €19 billion is required for flood risk management and €0.8-1 billion for freshwater. The financial tasking is explained in more detail in the Delta Programme 2015. The Delta Fund contains the required resources up to and including 2028.

The Administrative Agreement on Water and the establishment of the Delta Fund form a strong basis for financing flood risk management measures. The Administrative Agreement includes agreements with the water boards on the co-financing of the Flood Protection Programme (abbreviated as HWBP in Dutch). The central government, provinces, municipalities, water boards and drinking water companies have reached agreements on more efficient water management. The parties are jointly aiming to achieve ongoing efficiency gains up to €750 a year as from 2020 compared to the reference year of 2011. The pursuit of efficiency gains is designed to limit cost rises and mitigate local expense increases. This will be reported to the Dutch House of Representatives in the Water Mapped Out report. The evaluation from late 2013 shows that the parties are well on course.

Agreements on the financing of the new flood risk management policy have been reached with the Unie van Waterschappen (Union of Water Boards). The starting point for the financing is a comprehensive approach to the flood risk management tasking (tightening of standards, new technical insights, climate change and soil subsidence) that is designed to meet the new standard everywhere in 2050. The comprehensive approach to the improvement tasking, including the tasking ensuing from the new standards, will be financed from the new HWBP. The remaining part of the central government resources released will continue to be available for the flood risk management tasking within the Delta Fund. The agreements on the manner in which the new HWBP is filled will be continued. Consequently, the contributions from the central government and water boards to measures for improving the flood defence systems managed by the water boards can remain the same until 2028. Once the National Report on Review 4 is complete (in 2023), more details will be known about the scope of tasking. Based on this information, the question of whether additional agreements are required will be looked into after 2023. The evaluation of the agreements on financing in 2016, which is laid
down in the Administrative Agreement on Water, will therefore be postponed until 2023. An important priority of the evaluation is the development of local expenses, partly in relation to the project-related contribution of 10%. For water boards with a major tasking, the tasking should remain manageable. This can be achieved by means of smart programming, smart capitalising or evening out the effects within the programme. These options will be examined more closely in the coming period. The question of whether additional measures are wanted will be considered in 2023.

Where extra costs are incurred for river widening, the Cabinet is prepared to use resources from the Delta Fund, on condition that measures contribute substantially to safety, offer opportunities for achieving synergy at an area level (for example, for the economy, cultural history, nature and recreation) and are funded by means of co-financing. The Cabinet has earmarked approximately €200 million for this in the Delta Fund up to and including 2028.

**Freshwater supplies**

For economic development, investing in freshwater supplies is of great importance: Until 2050, freshwater supplies can be made more robust and optimised by investing in a number of targeted measures.

The cost of the future freshwater tasking is estimated at approximately €0.8-1 billion up to and including 2050. €150 million has been earmarked for this in the Delta Fund for the period up to and including 2028. This reservation is a first step towards making the system more robust by means of cost-effective measures. The reservation is more than enough to be able to pay at least the central government’s contribution to the first package of freshwater measures, as outlined in the Delta Programme 2015.

**Resources from other partners**

In comprehensive projects that serve more goals than just flood risk management and freshwater supplies, financial responsibility is borne by more partners. Even when flood risk management and freshwater measures entail additional costs but also additional benefits, a contribution from financial sources other than the Delta Fund is expected.

**Spatial Adaptation**

In the Delta Decision on Spatial Adaptation, the central government, provinces, municipalities and water boards have agreed to consider flood risk management and climate proofness as a whole in relation to spatial developments. The ambition is for climate-proof action and water-robust design to be an integral part of policy and implementation by 2020, to ensure that the Netherlands is actually climate-proof by 2050.

The goal of the Incentives Programme for Spatial Adaptation is that water-robust and climate-proof design is a matter of course by 2020. The Delta Fund provides a budget of €800,000 a year for this Incentives Programme for 2015, 2016 and 2017.

**Water quality (Water Framework Directive)**

The Cabinet remains committed to achieving the goals set out in the European Water Framework Directive (KRW). The 2015 budget includes permanent financing for Water Framework Directive measures for the entire planning period up to and including 2027 (€574 million in total). It also includes notes on how the required resources have been released and the manner in which they have been allocated to the Delta Fund.

**Long-term financing**

In 2014, the OECD investigated which developments impact Dutch water management, what risks the Netherlands should expect in the future and whether the Netherlands is sufficiently prepared for them. The OECD has concluded that water management is well organised in the Netherlands and has a stable financial structure.
The Cabinet endorses the OECD conclusion that Dutch water management has a stable financial structure. However, there are a number of long-term challenges that require a durable, future-proof financing system. Economic incentives to deal more efficiently with “too much”, “too little” and “too polluted” water can be increased. The Cabinet has therefore launched an exploration of a future financial structure together with the water partners. The results will become available in 2015. The Cabinet endorses, as a starting point, the principle that those who benefit from or take measures that impact water management bear the associated costs (“the user/polluter pays”). If this can be done efficiently, funding will be organised at a local level.

**Overview of milestones**

**Table 8 Milestones in financing**

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Appendices:

Appendix 1  Embedding of national policy, Delta Decisions and preferential strategies (Interim Revision of NWP)

Appendix 2  North Sea Policy Document 2016-2021

Appendix 3.1  Eems catchment area management plan 2016-2021

Appendix 3.2  Meuse catchment area management plan 2016-2021

Appendix 3.3  Rhine catchment area management plan 2016-2021

Appendix 3.4  Schelde catchment area management plan 2016-2021

Appendix 3.5  Programme of Measures for the Eems under the Water Framework Directive

Appendix 3.6  Programme of Measures for the Meuse under the Water Framework Directive

Appendix 3.7  Programme of Measures for the Rhine delta under the Water Framework Directive

Appendix 3.8  Programme of Measures for the Schelde under the Water Framework Directive

Appendix 4.1  Eems Flood Risk Management Plan

Appendix 4.2  Meuse Flood Risk Management Plan

Appendix 4.3  Rhine Delta Flood Risk Management Plan

Appendix 4.4  Schelde Flood Risk Management Plan

Appendix 5  Programme of measures under the Marine Strategy Framework Directive
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