

PART I

Chapter 2

Environmental governance and management

This chapter examines the Netherlands' environmental governance and policy framework for environmental management. It documents important advances in environmental policy, particularly in streamlining environmental legislation, regulations and permitting requirements. It also summarises key developments in specific areas, including climate change, air, water, biodiversity and nature, spatial planning and external safety. Finally, the chapter discusses environmental permitting, enforcement and compliance, as well as the tools in place to ensure a comprehensive system of environmental information and strong policy evaluation mechanisms. The recommendations on environmental governance and management are summarised in a box at the end of the chapter.

1. Introduction

As a small, densely populated country with a very open economy, the Netherlands felt acute environmental pressures early on. To tackle these pressures, it became a forerunner in environmental policy decades ago and has long been considered a leader in a number of areas. However, more recently, the government recalibrated ambitions for environmental policy objectives to levels set by the European Union (EU), with a view to promoting a level playing field. While the temptation may be to wait and let other countries catch up in areas where it is already doing well, the Netherlands still faces some persistent environmental challenges, and new ones are emerging. Hajer (2011) stressed the scale of the challenge ahead when he highlighted that resource use and the resulting pressures on the environment need to be scaled back by a factor of five. This equates to operating 80% to 90% more efficiently.

This chapter assesses the environmental governance and management of the Netherlands over the review period. It provides an overview of the policy framework and strategic vision for environmental management and briefly summarises key developments in specific areas, including climate change, air, water, biodiversity and nature, spatial planning, external safety and environmental liability. The chapter examines the multi-level governance arrangements and approaches to vertical and horizontal co-operation. It also assesses the approach to environmental permitting, enforcement and compliance, as well as environmental information systems and policy evaluation.

2. Policy framework and strategic vision for environmental management

The Netherlands was a pioneer in the development of comprehensive environmental plans, which set out a long-term, strategic vision. The first plan was developed in the 1980s, while the fourth and most recent (NMP4) was released in 2001. The NMP4 committed the government to a “transition” agenda with a horizon to 2030 to restructure production and consumption systems and sharply reduce resource use and emissions. However, according to PBL (2013), the plan’s effectiveness was limited as it lacked a clear vision of the policy instruments to be used (and at which level) and did not spell out a clear role for government and its relationship to society. For example, it did not consider which issues would best be dealt with at the EU level rather than at the national level or how best to harness the power of innovation in society.

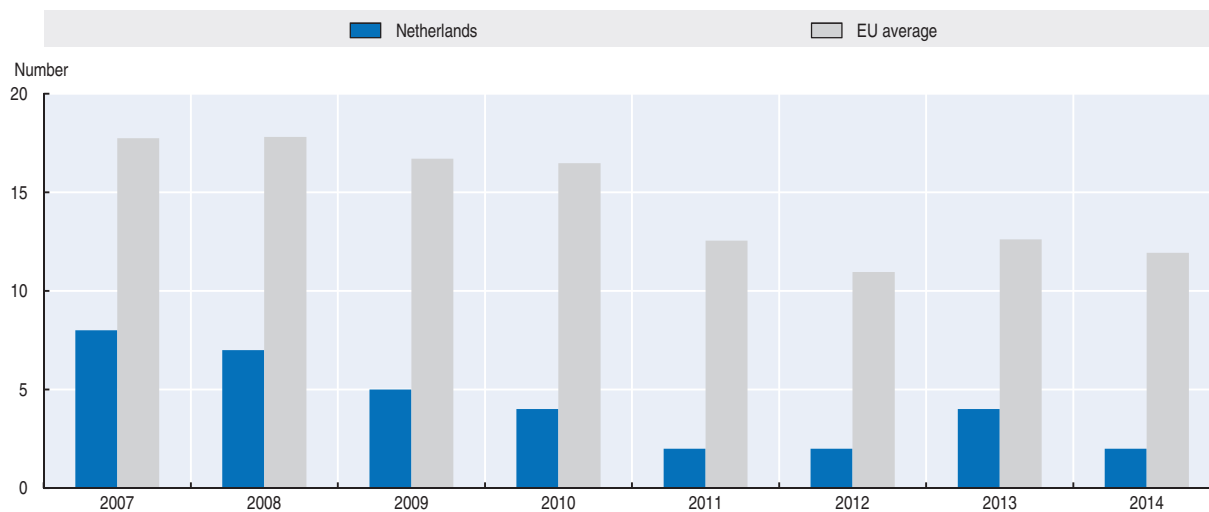
Over the review period, in addition to this “transition” agenda, the government set out a number of different initiatives to promote environmental objectives focused on various themes and environmental media. These included the Sustainability Agenda launched in 2011 along with the overarching strategy for green growth set out in a letter to the House of Representatives in March 2013 (Chapter 3). Major initiatives include the Netherlands Social and Economic Council (SER) 2013 Energy Agreement for Sustainable Growth (the Energy Agreement) and the Delta Programme launched in 2010 to focus on water management. These and other key developments are briefly summarised later in this chapter.

Currently, there is a drive to modernise environmental policy, with a focus on public health, particularly on new risks. The government outlined the approach in a Memorandum to the House of Representatives from the State Secretary for the Environment (Government of the Netherlands, 2014a). The document recognises the important advances in environmental policy over the past decades, while signalling a new era for environmental policy given that major environmental issues today and in the future are of a different order and require a new approach. The modernisation approach emphasises more active international co-operation, in recognition of both the global nature of environmental issues, such as climate change, and the influence of international forums (in particular the EU) on environmental policy. Continued efforts to streamline and consolidate environmental legislation and regulations will aim to support the cross-sectorial focus in the integrated Environment and Planning Act. This move towards an integrated legislative framework seeks to make implementation easier and reduce discrepancies between sectors. Finally, the approach stresses the role of government as a facilitator of “new coalitions” to tap into the energy of civil society organisations (CSOs), the private sector and the general public in promoting sustainability. The Sustainable Action programme (*Duurzaam Doen*) was launched to encourage such initiatives.

2.1. Legal and regulatory framework for environmental management

The Environmental Management Act (*Wet milieubeheer*, EMA) provides the foundation for environmental legislation in the Netherlands. The act covers all environmental aspects, including transposing the requirements of EU environmental directives. Around 80% of environmental legislation in the Netherlands is linked to European law. Compliance with the EU environmental *acquis* has been consistent, as reflected in the relatively low number of infringement procedures compared to the average across EU countries (Figure 2.1).

Figure 2.1. **Few Dutch infringements on EU environmental legislation, 2007-14**



Source: European Commission (2015), Statistics on environmental infringements.

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The Netherlands made impressive progress in streamlining environment legislation, regulations, and permitting requirements over the review period. The government is undertaking a major legislative overhaul to consolidate its environmental legislation.

The legislative streamlining will integrate all national legislation for the protection of the natural environment under one framework: the Environment and Planning Act (*Omgevingswet*), which is expected to enter into force in 2018. This marks an important shift from environmental law dispersed across sectorial legislation (13 acts and parts of 14 other acts) into a consolidated piece of legislation. The consolidated act will transpose more than 30 EU directives related to the environment previously transposed in other legislation. A similar streamlining process is taking place for the underlying regulations.

The Environment and Planning Act aims to improve the quality, coherence and application of environmental law, streamline policy and legal instruments, and create conditions for improved and expedited decision making. The new act will contain integrated rules on land-use planning, urban and rural development, water management, environmental protection, nature conservation, construction of buildings, cultural heritage, mining and earth removal, as well as the development of major public and private works. Whether the integration of these diverse areas will be effective will depend on how the secondary legislation is elaborated and how it is implemented in practice.

The Environment and Planning Act is based on six pillars (Ministry of Infrastructure and Environment, 2014):

1. **Development of an environmental vision:** The act will require the central government and provincial authorities to each produce an environmental vision, which will replace the existing array of plans and visions relating to the living environment.
2. **Programmes:** Programmes will be used to set out concrete measures for protection, management, use and development of the environment that can reach environmental aims.
3. **Decentralised regulation:** A core tenet of the act is decentralised regulation. Each local government authority will need to consolidate all of its environmental rules into a single regulatory document: an environmental plan for municipalities, water management regulations for regional water authorities and environmental regulations for provincial authorities.
4. **General national rules on activities:** General national rules for some activities will be defined to remove requirements to submit multiple permit applications. The act will have some provisions to allow for flexibility in the general rules.
5. **Environmental permits:** The environmental permitting system will be simplified to avoid contradictory or burdensome requirements (“a one stop shop”).
6. **A procedure for project decisions.** The act will provide a uniform procedure for decision making regarding complex projects under the responsibility of the national or provincial governments. Where incompatibilities between an economic or infrastructure project and an environmental plan arise, there will be flexibility to deviate from the environmental plan. In some cases, the project decision procedure may replace an environmental permit procedure. Finally, there will be a statutory requirement for participation in the course of project decisions.

As a part of the preparation of the new Environment and Planning Act, a comprehensive review of environmental legislation, including the environmental *acquis* of the EU, took place (Box 2.1).

In addition to the legislative overhaul underway, the Netherlands has taken other important steps to consolidate and streamline environmental regulations over the review

Box 2.1. “Make it Work”: Reviewing the EU environmental *acquis*

The preparation of the Environment and Planning Act included an analysis of EU environmental directives (*acquis communautaire*), as around 80% of environmental legislation in the Netherlands links to European law (Wöltgens and Stoop, 2012). The analysis revealed the *acquis* appears to be consistent at a high level; however, upon closer examination, some inconsistencies emerge. These inconsistencies may have developed in the course of negotiations on individual instruments. Other issues potentially affecting effective implementation of the *acquis* include contradictory, overlapping or accumulating obligations, different timelines for reporting and the complexity of the *acquis* itself, as it has grown over time.

To further investigate these issues, the Netherlands launched the “Make it Work” project, along with nine other EU member countries, including the United Kingdom and Germany. The project seeks to identify opportunities for improving the coherence and consistency of environmental legislation and to propose concrete recommendations. The overall aim is to improve the effectiveness of the *acquis*, while maintaining the level of ambition in terms of environmental protection.

Source: Government of the Netherlands (2014b), “Make it Work”, <https://omgevingswet.pleio.nl/file/download/26694012> (accessed 22 October 2014).

period. This includes the adoption of the Activities Decree, which came into effect in 2008. The decree reduced the number of required environmental licences, providing for a greater reliance on general binding rules (GBRs). It trimmed the volume of legislation and drastically reduced the number of installations that required an environmental permit. Of the 412 000 establishments in the Netherlands that have an environmental impact, the large majority (more than 390 000) are now covered by GBRs, while a smaller share (22 000) require an environmental permit. The government estimated that as of 2013, this change resulted in a reduction of administrative burden in the order of EUR 354 million (Ministry of Infrastructure and Environment, 2013).

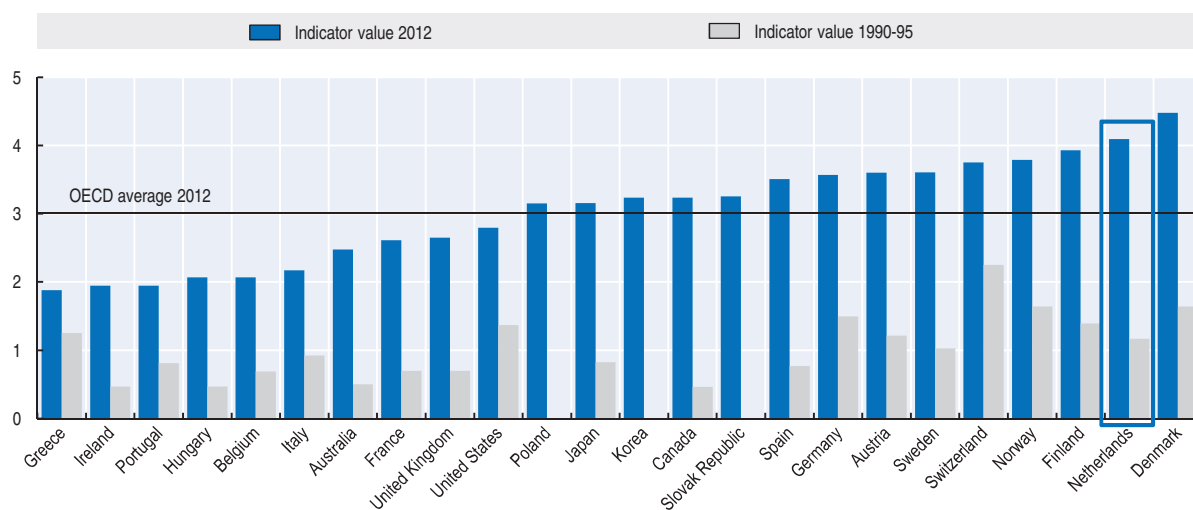
Streamlining efforts continued with the 2010 Act on General Provisions for Environmental Law (*Wet algemene bepalingen omgevingsrecht*, WABO), which established “all-in-one” permitting for environmental permits. The act allows applicants to use a single procedure to apply to one competent authority for permits for activities that affect the physical environment. This replaced requirements for around 25 separate permits for activities such as construction, demolition, spatial planning and buildings. In so doing, it reduced administrative burden and costs for the public and private companies.

Given the significant consolidation and streamlining efforts over the period, it would be valuable for the government to assess the impact of these changes to ensure that, collectively, they meet the aim of maintaining (or increasing) the level of environmental protection in practice. Such an evaluation has been undertaken in the case of the Activities Decree. The evaluation concluded that the decree’s system of GBRs has only a minimal impact (positive or negative) on the level of environmental protection that can be seen in certain practical cases (Ministry of Infrastructure and Environment, 2015).

Ensuring the level of environmental protection is maintained or improved in the context of ongoing streamlining efforts is important for continued environmental performance. A related, but distinct, concept is that of the stringency of environmental policy. Recent OECD analysis has examined the stringency of selected environmental

policies, which ranks the Netherlands among the most stringent (Botta and Koźluk, 2014) (Figure 2.2). In this study, stringency was defined as a higher, explicit or implicit, cost of polluting or environmentally harmful behaviour (which is distinct from attempting to measure the level of environmental protection). The analysis does not provide a comprehensive picture of the stringency of environmental policies in OECD member countries; it only covers certain instruments related mainly to the electricity sector, along with two transport policy instruments and one waste policy instrument. The analysis shows that stringency in the Netherlands, as measured by this analysis, has increased significantly over time, in line with the broader trend in OECD member countries.

Figure 2.2. **Relatively high stringency of select environmental policies in the Netherlands**



Source: Botta, E. and T. Koźluk (2014), "Measuring Environmental Policy Stringency in OECD Countries: A Composite Index Approach", *OECD Economics Department Working Papers*, No. 1177.

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2.2. Key environmental strategies, policies and programmes

Over the review period, the government developed a number of different environmental strategies, policies and programmes focused on specific environmental media. Overall, the Netherlands made successful advances over the last decade in traditional environmental policy domains, where it has long been considered a forerunner. Yet the country has faced persistent difficulties in addressing diffuse pollution and securing significant improvements in the quality of ecosystems and biodiversity. Several key initiatives are briefly discussed in this section.

Climate change mitigation and adaptation

The policy and investment framework for renewable energy and energy efficiency to support climate mitigation goals in recent years has been characterised by relative instability (IEA, 2014). The 2007 Clean and Efficient Programme and the 2008 Energy Strategy called for a 30% reduction in greenhouse gas (GHG) emissions from 1990 levels, 20% renewables in the energy mix and annual energy efficiency improvements of 2% by 2020 (IEA, 2009). Since 2010, the government has revised downward these ambitious climate policy targets and programmes. The aim has been to use EU policy as the ceiling on

ambition (with the exception of the 2023 target on renewable energy) to establish a level playing field within the EU. The 2020 EU Climate and Energy package translates into the national targets of a 14% share of renewables in gross final energy consumption and a 16% reduction in GHG emissions (for the non-ETS sector) by 2020, below 2005 levels. The 2013 Energy Agreement set targets to save 1.5% in final energy consumption annually until 2020¹ and increase the share of renewable energy in final energy consumption to 14% by 2020 and 16% by 2023. For the transport sector, the target is to reduce CO₂ emissions by 17% by 2030 and by 60% by 2050 (below 1990 levels) (see Chapter 3).

In addition to instruments deriving from EU climate policy (EU emissions trading system, CO₂ standards for passenger cars and light commercial vehicles, as well as buildings), the Netherlands has a feed-in-tariff system that subsidises renewable energy producers (SDE+) (see Chapter 3). Sectorial agreements continue to play an important role in Dutch climate policy, as reflected in the 2013 Energy Agreement spearheaded by the SER (discussed below).

Building on the Energy Agreement, the government put forth a “Climate Agenda” in October 2014 covering mitigation and adaptation policy with a horizon to 2030. The agenda covers a broader range of sectors than the Energy Agreement, such as agriculture. Within the EU, the Dutch Cabinet is advocating for at least a 40% reduction of GHG emissions compared with 1990.

Climate change adaptation has been considered in some specific policy areas, such as water management, but a comprehensive approach to adaptation has been lacking to date. In 2012, the Court of Audit (*Algemene Rekenkamer*) reviewed adaptation policy, including the Spatial Planning and Climate Adaptation Programme that ran from 2006-10 and the 2007 National Adaptation Strategy (NAS). The court’s findings highlighted a number of shortcomings. For example, in 2008, Parliament was told the NAS would be developed into a national adaptation agenda, with specific actions, a timetable and allocation of responsibilities; this never happened. Neither a comprehensive assessment of risks and vulnerabilities nor concrete measures have been developed. Further, adaptation policy lacks co-ordination and is not monitored and evaluated in a systemic way. This increases the risk that the Netherlands will not be well prepared for the impacts of climate change. It can also make adaptation more costly if measures are delayed too far into the future and require costly retrofitting and adjustments (*Algemene Rekenkamer*, 2012).

Since the establishment of the Delta Programme in 2012 (discussed below), climate change adaptation has been mainstreamed into key areas of water management, in particular flood safety and freshwater supply. Taking an integrated and adaptive approach, the Delta Programme has re-evaluated water management in light of long-term challenges, including climate change, with a horizon to 2100. In September 2014, key decisions (“Delta Decisions”) were presented to Parliament. These decisions included a new flood risk management policy, a new nationwide approach to freshwater supply and a decision on spatial adaptation that sets out a new, targeted approach to water-robust and climate-proof development in the built environment.

A new National Adaptation Strategy to update the 2007 NAS is expected to be presented to Parliament in 2016. It will go beyond the water-related focus of the Delta Programme, to address a range of sectors, in particular health, energy, infrastructure, information and communications technologies, transport, nature, agriculture and

fisheries. It will also examine cross-sectorial interactions and the potential effects of climate change outside of the Netherlands, which could nonetheless have impacts on Dutch society and the economy.

Air pollution

EU limit values for concentrations of air pollutants were incorporated into Dutch law via the Environmental Management Act. Air quality has improved significantly in recent decades. However, the country requested a derogation to extend the date to comply with the limit values for PM₁₀ and NO₂ set out in the EU Directive on Ambient Air Quality and Cleaner Air (2008/50/EC). According to a report from the National Institute for Public Health and the Environment (RIVM), the limit values for particulate matter were exceeded at a limited number of locations (in 20 of the 403 municipalities in the Netherlands) in industrial areas and regions with intensive livestock farming, resulting in a failure to comply with EU limit values in 2013. Projected NO₂ exceedances for 2015 are expected to occur mostly in the Randstad, close to locations with high road traffic intensity (RIVM, 2014).

The National Air Quality Co-operation Programme (*Nationaal Samenwerkingsprogramma Luchtkwaliteit*, NSL) addresses areas that are expected to exceed limit values for air quality. The programme was intended to run through August 2014, but was extended until 1 January 2017. The NSL is a co-operation programme between the national government and local authorities. Regional Air Quality Co-operation Programmes (RSLs), under the responsibility of the provinces and municipalities, are also part of the NSL. The government provided more than EUR 1.55 billion to reduce background and peak concentrations of air pollution emissions. For example, some EUR 554 million was used to subsidise particulate filters on diesel-powered vehicles. In addition, EUR 45 million was provided in grants to livestock farmers (mainly poultry farms) to help reduce PM₁₀ emissions through measures such as the installation of air scrubbers. While the programme has been effective in helping to meet PM₁₀ standards in most areas, it has resulted in little additional health benefit, as it does not focus on exposure to finer particulate matter, the most harmful type (PBL, 2013).

Water management

Flood protection standards in the Netherlands are among the highest in the world. While not all flood defence structures currently meet safety standards, efforts are underway to address this (OECD, 2014a). Despite being a water-abundant country, the risk of drought and shortage of freshwater is expected to grow in the future, especially in a changing climate. Increasing salinity in some regions and longer and more frequent dry spells have contributed to the increasing risk of shortage. There are currently few formal arrangements for water allocation in the Netherlands and no explicit limit on abstraction (OECD, 2015). Shortage incidents are handled through priority regime banning, where access to lower priority use is temporarily restricted. Inadequate water quality as a result of diffuse pollution and stresses on freshwater ecosystems are persistent issues, making the targets under the EU Water Framework Directive (WFD) difficult to reach (OECD, 2014a). The revised draft EU WFD River Basin Management Plans covering the period 2015-21 were presented at the end of 2014. Based on these plans, only about 15% of water bodies will reach EU WFD objectives by 2027 (PBL, 2015a).

For decades, Dutch water management has relied on large structural solutions and an engineering approach to provide flood protection and ensure freshwater supply. Recently, a new approach known as “Room for the River” has emerged, combining innovative architecture, urbanisation and landscape solutions to build with nature and live with water. Re-naturalising waterways and using multi-functional water management infrastructures can improve the environmental benefits associated with water management (OECD, 2014a). Further, these approaches can be more cost effective than traditional, engineered approaches. Building on these positive developments, water management could further consider impacts on ecosystem functioning and nature objectives. This will require close co-operation between the Ministry of Economic Affairs, the Ministry of Infrastructure and Environment, and sub-national authorities, in particular the regional water authorities. Strong collaboration between the Nature Vision Strategy of the Ministry of Economic Affairs and the development of the next iteration of the River Basin Management Plans could help promote coherence between water and nature objectives (PBL, 2015b).

An important advance in water policy occurred in 2012 with the adoption of the Delta Act on Flood Risk Management and Freshwater Supplies. This was driven by growing concerns about the potential impacts of climate change and the long-term water security of the country. The act established the Delta Programme as the national planning instrument to respond to the country’s current and future challenges on water safety and freshwater supply. The Delta Commissioner, appointed by the government, leads the programme and submits a yearly proposal for action to the cabinet; this provides an overview of all measures, studies and ambitions related to flood risk management and freshwater supplies. The Delta Fund provides financial resources for measures of national importance related to flood risk management and freshwater supplies (as well as the water quality measures directly related to these tasks). Up until 2020, the money earmarked for water safety and freshwater supply has been transferred from the Infrastructure Fund to the Delta Fund, with an average annual budget of EUR 1 billion until the end of 2028 (Ministry of Infrastructure and Environment and Ministry of Economic Affairs, 2014).

Nature and biodiversity policy

With few remaining “natural” areas, biodiversity in the Netherlands co-exists with high population density and economic activity, including intensive agricultural production. At the same time, the long Dutch coastline and low-lying delta create unique conditions for biodiversity. Although the rate of decline has slowed or improved for a number of species, some populations are still in decline. The 2013 monitoring results of the European Union Habitat Directive reveal that about 95% of habitat types and 75% of species are threatened, a share higher than in many other OECD member countries.

The Netherlands put in place the National Ecological Network (NEN) to promote biodiversity and fulfil international commitments under the UN Biodiversity Convention and EU directives for birds and habitats (Natura 2000). The NEN, a programme running until 2027, consists of 162 designated Natura 2000 land areas, as well as national parks and other forest and nature areas. It seeks to extend and better connect ecosystem areas, including via a national programme to address fragmentation related to infrastructure. The 2014 budget for the NEN (including terrestrial Natura 2000 sites) was EUR 415 million, funded mainly by the national government. Efforts also continue to reduce pressures on biodiversity and improve nature management on farmland. The protection of the nature

areas in the NEN exist under a “qualified no” regime. This means that actions with significant negative impact on the NEN are not permitted unless they are clearly in the public interest and there are no realistic alternatives (Ministry of Infrastructure and Environment, 2011).

Of the more than 160 Natura 2000 areas, 117 are affected by nitrogen levels (Ministry of Economic Affairs, 2015). Nitrogen deposition arises from multiple sources, NO_x from traffic and industry, and NH_3 from farming. The Integrated Approach to Nitrogen (PAS) was developed to help address this and reduce the amount of nitrogen in nature areas. From 1 July 2015, the permitting of new economic activities (e.g. agriculture, industry, traffic) will be conditional upon assessing the impact of nitrogen deposition on surrounding Natura 2000 areas (as estimated by the new AERIUS calculation tool from RIVM).

Since 2010, nature policy has been largely decentralised and deregulated (PBL, 2015b). The Natural Capital Agenda, launched in 2013, shifted the focus of nature policy from conservation of nature areas to the sustainable use of ecosystem services provided by nature. The 2014 Nature Conservation Act replaced existing acts concerning nature (the Nature Conservation Act of 1998 and the Flora and Fauna Act of 2002, which transposed the relevant EU directives into national legislation). The act, considered more flexible and less detailed than previous legislation, will be incorporated into the new Environment and Planning Act.

The Ministry of Economic Affairs outlined a new government vision for nature policy in 2014 (Ministry of Economic Affairs, 2014). It marks a shift in nature policy, emphasising a change in role for the national government from “managing” to “facilitating”. Green Deals (discussed below) play a prominent role. In line with the decentralisation trend underway, the Pact for Nature transfers large parts of nature policy to provincial authorities. Under the pact, provincial authorities have entered into agreements with key stakeholders to define their role in implementing nature policy.

Spatial planning

The Netherlands’ high population density and dense transportation networks contribute to intense competition for physical space. Spatial planning thus has an important impact on the living environment and quality of ecosystems. Since 2012, the National Policy Strategy for Infrastructure and Spatial Planning (SVIR) has provided a reference framework for all government policy with implications for spatial planning, replacing a number of diverse plans and strategies. It represents a strategic agenda for spatial planning policies, which guides a programme of investments. A related instrument, the Multi-Year Plan for Infrastructure, Spatial Planning and Transport (MIRT), aims to promote coherence between investments in spatial planning, economic development, mobility and quality of life at the national level. The total national budget of the MIRT in 2013 was EUR 6.4 billion (Government of the Netherlands, 2014c).

A core feature of the SVIR is decentralisation, delegating more responsibilities to local and provincial authorities, to provide them with greater flexibility. To this end, the central government has eliminated the national landscape policy and reduced the number of nature management regimes (OECD, 2014b). Provincial authorities have been given responsibility for balancing urban and green areas at regional level, while land-use planning has largely been decentralised to the municipalities. Municipalities prepare local regulations and land-use plans, designating land use for residential areas, industrial

estates, business parks, agricultural production, nature and other purposes. They may also authorise and finance compulsory land purchase. In cases where zoning plans extend beyond a given municipality, consultation with neighbouring municipalities is required. Examples include the siting of windmill parks, transportation infrastructure and the designation of nature areas. Municipal and inter-local co-ordination are left to local authorities.

In cases where regional or national interests are at stake in land-use decisions, responsibility lies with the provinces or national government, respectively. The central government focuses on 13 areas of national interest, including space for the main sustainable energy supply network and room for a national network of wildlife habitats. For example, the central government and provincial authorities will plan space for more onshore wind farms, aiming to generate at least 6 000 megawatts (MW) by 2020 (Ministry of Infrastructure and Environment, 2011) and 6 000 MW from offshore wind in the longer term.

External safety

External safety policy is concerned with limiting risks to people and the environment from the possible effects of hazardous activities (e.g. industrial installations and hazardous substance transport routes). This is particularly important in the Netherlands, given its high population density and dense transport networks. Hazardous substances are present at over 5 000 establishments; nearly half of these are liquefied petroleum gas (LPG) tank filling stations, 1 000 are chemical storage sites and 300 are “Seveso” sites (Government of the Netherlands, 2011). According to the EU directives on the control of major accident hazards involving dangerous substances (generally known as the Seveso directives) these Seveso sites require special attention.

Two major accidents, the Bijlmer airplane crash in 1992 and the Enschede fireworks explosion in 2000 spurred a major revision in external safety policy. The Enschede explosion caused 22 deaths, injured nearly 1 000 people and inflicted substantial physical damage. An independent commission found that both the security arrangements of the fireworks facility (including compliance with government regulations) and the external security provisions set by the government, including regulations, licensing requirements and monitoring, were inadequate (Fireworks Investigation Commission, 2001). Among its recommendations, the commission suggested the government explicitly task the Environment Minister, or another, with the primary responsibility for external safety, including interdepartmental co-ordination.

The overhaul of external safety policy included new legislation and more than doubled programme financing from 2004 to 2006. Financing reached EUR 20 million per year over 2006-10 (Government of the Netherlands, 2011). The legal framework consists of several decrees covering external safety for establishments, pipelines, transport routes and situations involving hazardous substances.² An annual report on the safety performance of the top 400 risk-generating companies is produced for Parliament in collaboration with local authorities and industry. Legislation ensuring a basic transport network for dangerous substances (Basisnet) took effect on 1 April 2015. In addition to existing instruments, a new instrument called the “Safety Deal” is being used to build coalitions of public- and private-sector actors around a common safety agenda. For example, the LNG Safety Deal, which was signed in 2015 by the government, private companies and research

institutes, promotes the safe use and transport of liquefied natural gas (LNG) in the Netherlands (Nationaal LNG Platform, 2015).

External safety policy focuses on the most significant risks in terms of potential impact and likelihood. This risk-based approach aims to ensure a minimum level of safety for the public and uniformity across the territory. It is also used to promote safety awareness in spatial planning. Drawbacks of the approach include limited incentives to go beyond minimum safety levels and significant requirements in terms of expertise (Government of the Netherlands, 2011).

Environmental liability

The Netherlands has transposed the EU Environmental Liability Directive (ELD) (2004/35/EC) via the Environmental Management Act. The ELD establishes a framework based on the polluter pays principle to prevent and remedy environmental damage. The ELD, which is based on administrative law, is distinct from a civil liability regime (e.g. the ELD does not include provisions for private parties to seek compensation as a result of environmental damage). The transposition of the ELD across EU member states has been greatly affected by the existing liability law and environmental legislation in individual countries, and has resulted in widely varying liability systems (European Commission, 2013). There has been no application of the implementing legislation reported in the Netherlands since 2008, including the major fire in 2011 at the firm ChemiePack in Moerdijk. The rules of the ELD have not been applied in any cases either, due to the application of pre-existing legislation.

The government is exploring changes to the existing liability regime as part of efforts to better deal with the potential impacts of new, emerging risks (from new substances and technologies). The aim is to make companies liable for negligence in the case of risks, as an incentive to take responsibility for identifying and controlling such emerging risks.

2.3. Voluntary agreements

The Netherlands has a long tradition of consensus-based decision making, known as the “polder approach”. The use of voluntary agreements (e.g. negotiated “covenants” or “gentlemen’s agreements”) is commonplace. In principle, voluntary agreements lack sanctions and are not enforceable. Yet, in some cases, covenants include a sanction that applies if parties fail to meet the targets established in the agreement. For example, firms participating in energy efficiency agreements may under strict conditions receive an energy tax exemption if they meet agreed targets for improving energy efficiency. If they fail to reach the targets, they lose the tax exemption. Other ways to encourage parties to fulfil commitments in voluntary agreements include “naming and shaming” or “naming and faming”, whereby the party receives either negative or positive public attention related to their actions vis-à-vis the agreements.

A recent prominent example of the use of voluntary agreements is the “Green Deals” programme launched in 2011. The programme is an innovative way to get the best of the “polder approach” by removing obstacles for industry (including SMEs) and agriculture to implement environmental efforts. The deals consist of agreements between the government and various private parties that focus mainly on removing non-financial barriers related to regulations, legislations or licensing.

Close to 200 Green Deals have been concluded so far. The energy sector accounted for around 75% of all deals in 2011 and 50% in 2012. Green Deals have also been concluded for

a range of other themes, including water, mobility, biodiversity, the bio-based economy, construction and food. The government is using the experience gained so far to refine criteria used to select opportunities for Green Deals.

The Netherlands Environmental Assessment Agency (PBL) has been positive about the Green Deals approach. An *ex ante* assessment in 2011 highlighted that the approach could inspire others to follow the examples set out in the Deals (PBL, 2011). A more recent report referred to the deals as a “clear step towards defining the obstacles encountered by companies, with a view to removing them wherever possible” (PBL, 2014). The report also noted opportunities to improve and extend the programme. In particular, it suggested that Green Deals can play a key role in supporting green innovation by providing opportunities for experimentation through temporary licences or providing exceptions to standard operating practice.

Another prominent example of voluntary agreements is the 2013 Energy Agreement spearheaded by the SER. An influential advisory and consultative body of private sector associations and independent experts, the SER advises the Dutch government and Parliament on social and economic policy. In the Energy Agreement, more than 40 organisations jointly set out targets and actions to achieve energy and climate policy goals. The diverse range of organisations includes central, regional and local government, employers’ associations and unions, financial institutions, environmental groups and other CSOs. The objectives of the agreement are summarised in Chapter 3.

The SER has set up a committee to support implementation of the agreement. An evaluation is planned for 2016, but early assessment indicates goals are unlikely to be met. This was most recently confirmed by a report from the National Audit Agency, which concluded it was unrealistic to expect that with current efforts the Netherlands would reach the Energy Agreement objectives of 14% sustainable energy by 2020 and 16% by 2023 (Algemene Rekenkamer, 2015). As part of the evaluation in 2016, a decision will be taken on the need for supplementary measures to achieve the targets for 2020 and 2030.

Covenants have also been extensively used to promote sustainable agriculture. The Gentlemen’s Agreement for Clean and More Efficient Agriculture is one such example. This covenant was agreed between several ministries and associations representing the agricultural, horticultural and livestock industries. The agreement sets out a number of commitments to meet sustainability targets and emission levels for the sector (Government of the Netherlands, 2008). The Multi-annual Agreement on Glass Horticulture of 2014 commits parties to ensuring that new greenhouses from 2020 are carbon neutral and that existing ones reduce fossil fuels by half, as compared to 2011 (Government of the Netherlands, 2014d). The Implementation Agenda on Sustainable Livestock sets objectives to improve the sustainability of livestock farming by 2023.

Overall, the use of voluntary approaches has produced mixed results in achieving environmental aims. PBL (2013) indicates covenants agreed with various industrial sectors failed to achieve significant emission reductions, given their lack of enforceability. Reliance on voluntary agreements may undermine environmental performance, especially in situations where low-hanging fruit has already been harvested and the scope for “win-wins” is limited. While voluntary agreements can provide a platform to set out a common agenda among diverse stakeholders, they cannot guarantee that the goals agreed will be met and they lack effective sanctions. Thus, more difficult commitments have to be monitored more closely.

2.4. Environmental certificates

The use of environmental management systems (EMAS) has increased in the Netherlands over the past years, with the number of certified organisations growing by 15% per year since 2008. More than 2 200 organisations with more than 4 500 sites in the Netherlands have an ISO 14001 certified environmental management system (Government of the Netherlands, 2014c). A range of different sectors has become certified, with some reaching 50% of firms certified. The use of ISO 14001 certificates in procurement has been cited as a key driver for the uptake of EMAS. Companies are increasingly integrating environmental reporting into their sustainability reporting. The top 200 Dutch companies typically publish an integrated sustainability report with environmental data. While such systems can help strengthen environmental management procedures, it is less clear that they result in improved environmental outcomes, particularly the ISO 14000 system.

3. Environmental governance: Institutional arrangements and co-ordination

3.1. Multi-level governance

The Dutch government consists of three levels: state, provincial and municipal, with a mix of autonomy and dependence in the relations between sub-national authorities and the central government. In addition to these three levels, regional water authorities (RWAs) have the same position as municipalities, but their authority is limited to water safety and quality. Each level is autonomous in terms of regulation and administration of its own internal affairs in addition to taxation power (OECD, 2014b). National legislation limits the autonomy of provinces and municipalities, while provincial legislation limits municipal autonomy (Box 2.2).

Box 2.2. Multi-level governance in the Netherlands

In the Netherlands, the structure, tasks and supervision of the government are regulated in several parliamentary acts, including the Municipalities Act, the Provinces Act and the Act on the Regional Water Authorities. The Act on Financial Relations regulates the financial relations between national government and sub-national government authorities. The national government is responsible for the unity of the government.

There are 12 provinces, which are the authority at the regional level. They act as “area manager” (*gebiedsregisseur*), monitoring and supervising the finance and governance of municipalities. Provinces play a role in inter-regional and inter-sectorial co-operation.

There are 393 municipalities, which operate most closely to citizens. To perform their own tasks effectively and reap the benefits of economies of scale, municipalities co-operate voluntarily in public bodies for implementation of one or more public services. In urban areas, municipalities co-operate, for example, in planning for infrastructure and the development of industrial areas.

There are 24 regional water authorities. They also operate at the local level, with responsibility for specific functions related to water safety and water quality. They are governed by elected councils and can raise funds for their activities through taxes.

At the national level, the Ministry of Infrastructure and Environment is responsible for most areas of environmental policy. The ministry was formed in 2011 through the merger of the former Ministry of Housing, Spatial Planning and the Environment with the former

Ministry of Transport and Water Management. One minister is responsible for water and transport policy, while the State Secretary of the Environment is responsible for the environment. Responsibility for nature and biodiversity policy lies with the Ministry of Economic Affairs, which was created by a merger of the former Ministry of Agriculture, Nature and Fisheries and the former Ministry of Economic Affairs.

One of the peculiarities of Dutch multi-level governance is its resemblance to an “hourglass” structure with the comparatively weak provincial level “squeezed” between the stronger national and municipal levels (OECD, 2014b). This structure is reflected in budgetary arrangements. Provincial budgets represent 1% of GDP and 11% of total sub-national government expenditure, while municipal budgets account of 10% of GDP and nearly 75% of the total. However, following transfer of new responsibilities in recent years, provincial expenditure grew by 50% (in nominal terms) between 2007 and 2010 (OECD, 2014b).

Overall, the financial situation of sub-national governments deteriorated in 2008 due to the direct effects of the economic crisis and the impact of the central government’s fiscal consolidation measures. Since 2010, sub-national governments have adjusted by cutting expenditure on goods and services, staff and investment. The reduction in transfers from the central government was offset somewhat by increasing sub-national tax rates and user charges (OECD, 2014b).

3.2. Decentralisation trend

Over the review period, there has been a marked trend to decentralise responsibility for environmental policy and implementation. This has taken place in the context of a broad reform of the sub-national governance system. The reforms seek to provide more discretion and authority to provinces and municipalities, and allow for more tailored policies and experimentation with various approaches. However, decentralisation may also lead to inconsistent policy implementation and an uneven playing field across jurisdictions. Further, the decentralisation of tasks is not necessarily accompanied by the provision of additional resources. As a result, sub-national governments might not have the necessary financial, managerial, human and technical capacity to manage their new functions (OECD, 2014b).

Alarming reports from the Dutch Safety Board following high-profile incidents (see Dutch Safety Board, 2013, 2012) highlighted major deficiencies in policy implementation and spurred action to address them. The need to consolidate expertise and experience to support the implementation of environmental requirements at an appropriate scale spurred the establishment of the 29 Environmental Services (*Omgevingsdiensten*, ODs) on 1 January 2014. This was an important part of the response to addressing existing weaknesses in policy implementation at the local level. The ODs bring together experience and expertise on environmental licensing, compliance assurance and enforcement. They implement environmental legal requirements, including enforcement of environmental permits, at the request of the competent authority (provincial and municipal authorities). Six of the ODs are responsible for Seveso sites.

The Netherlands faces a challenge to ensure the ODs operate effectively and promote strong and consistent environmental performance. A large and experienced OD, like the DCMR in Rijnmond, is generally performing well. However, there is uncertainty about the capacity, knowledge and expertise of recently established ODs. Moreover, budget cuts for supervision and enforcement are a cause for concern. Funding for the ODs will be provided

by municipalities and regional authorities, which already face fiscal constraints. The ODs were designed based on administrative considerations (via a bottom-up process of negotiating specific co-operation arrangements between provincial and municipal authorities) rather than on ecological considerations or economies of scale or scope. Furthermore, shared oversight for ODs that cross provincial boundaries could be problematic. The current *ad hoc* co-operation among the various ODs may miss opportunities to share experience and good practice. Building on the co-operation mechanisms to share experience already in place for the six ODs responsible for Seveso sites could facilitate the exchange of expertise among all of the ODs. Although quality criteria for the performance of the ODs are being developed, it has not yet been decided whether they will be mandatory or optional. The effectiveness of the ODs could also be improved through national mandatory quality criteria, strengthening financing arrangements to ensure stable and sufficient funding and monitoring the quality of their performance.

Overall, the decentralisation trend can create opportunities for better integration of environmental policies and spatial policies, providing a tailored balance of local interests and needs. Conversely, it can compromise environmental objectives in cases where short-term economic considerations prevail. Sufficient financial and human resources are essential to ensure that competent authorities can execute their functions, or properly finance the ODs that execute them on their behalf. The establishment of the ODs to bring together specialised expertise is a step in the right direction. However, further improvements are needed to ensure quality of the performance of the ODs.

3.3. Horizontal and vertical co-ordination

Over the review period, the trend has been towards more *ad hoc* co-operation on specific issues and less formal co-ordination and co-operation. This takes place through periodic meetings, *ad hoc* teams and negotiated agreements on specific issues. For example, arrangements for co-ordinating environmental policy between the national and regional levels of government include the Multi-level Governance Meeting on Spatial Issues (*Bestuurlijk overleg Ruimte*) and the Accessibility and Multi-level Governance Meeting on Water Affairs (*Bereikbaarheid, bestuurlijk overleg Milieu en de stuurgroep Water*). Convened since 2013, these meetings take place between the Minister of Infrastructure and Environment and representatives of the Association of Provincial Authorities (IPO), the Association of Netherlands Municipalities (VNG), the Union of the Regional Water Authorities (UvW) and the Urban Regions under Traffic and Transport (SkVV).

To develop a common position for EU proposals, co-ordination takes place in *ad hoc* intergovernmental or inter-ministerial teams. The teams develop a brief to inform Parliament on the Dutch common position. These briefs are discussed in an interdepartmental working group chaired by the Ministry of Foreign Affairs.

Co-ordination also occurs through negotiated agreements. An example of this type of arrangement is the Administrative Agreement on Water Affairs (*Bestuursakkoord Water*), concluded by the national government, provincial authorities, municipalities, regional water authorities and water companies in 2011. The agreement set out a financing arrangement for the High Water Protection Programme and set targets to achieve EUR 750 million in efficiency gains, shared among the various parties (Government of the Netherlands, 2014e).

4. Environmental permitting, enforcement and compliance

The Netherlands has long been at the forefront of enforcement and compliance practice. In the 1990s, the Dutch Ministry of Justice developed the “Table of Eleven” factors that influence regulatory compliance, which have widely influenced the compliance practices of other countries. More recently, the Netherlands led the EU’s Network for the Implementation and Enforcement of Environmental Law (IMPEL) 2006 programme “Doing the Right Things” and subsequent follow-up work. The programme explored how inspection authorities set priorities (one of the key steps in setting up inspection plans) and resulted in the development of a step-by-step guidance book for planning environmental inspections.

The WABO Act provides the main basis for environmental permitting in the Netherlands. All installations with an impact on the environment either fall under general binding rules (GBRs) or require a specific permit (Box 2.3). All environmental aspects are covered in these permits or GBRs, with the exception of direct discharges to surface water, which are addressed in the Water Act. The Activities Decree transposes requirements of the EU Industrial Emissions Directive, covering rules for emissions of large combustion plants, waste incineration plants, plants categorised in the Integrated Pollution Prevention and Control (IPPC) installations and volatile organic compounds (VOCs). The Emissions Guidelines for Air provide limits for most air emissions from industrial sources.

Box 2.3. General binding rules in the Netherlands

In the Netherlands, the regulatory changes introduced as of 2008 establish different requirements for three categories of installations (defined in the Activities Decree):

- Type A facilities, characterised by minimal environmental impact, are regulated by general, not activity-specific provisions; they do not need to notify the competent authority of their operations.
- Type B installations have a moderate environmental impact, are covered by activity-specific GBRs and are required to notify the competent (local or provincial) authority of the nature and size of its activities four weeks before starting operations.
- Type C installations have a potentially important impact and require an environmental licence that must be complied with along with applicable activity-specific GBRs (this category includes large installations subject to the EU Industrial Emissions Directive and that need an integrated permit/licence).

GBRs establish “quantitative target-based provisions” (i.e. emission limit values) that can be achieved by any “recognised” measure without prior consent from the competent authority. They also establish “qualitative” provisions that require certain specific techniques or management practices that can be modified only with the competent authority’s consent.

GBRs have been developed for activities related to hazardous substances, plastics, metals, paper and textiles, food products, vehicles and other motorised equipment, etc. The range of activities subject to GBRs covered by the Activities Decree is expanding every year until 2016. GBRs currently cover about 400 000 companies.

Source: Mazur, E. (2012).

Environmental permitting and supervision have been mainly decentralised. Prior to the 2010 WABO Act, several different authorities granted applications for environmental permits. As discussed above, the act provided for an “all-in-one-permit”, which has

significantly streamlined the process. Now, only one authority – most often the municipal executive body – is competent to issue permits. In some cases, the provincial executive body has the authority; in a small number of instances (such as military installations), the minister holds the authority. The authority that issues the all-in-one-permit is also responsible for enforcing it. Since their establishment in 2014, the ODs now execute the enforcement of environmental permits on behalf of the provinces and municipalities. In case of non-compliance, the competent authority may impose sanctions, which include measures based on administrative law (such as warnings, recommendations, fines, revocation of a licence, publication of inspection results) or measures based on criminal law (fine or prosecution).

The Human Environment and Transport Inspectorate (the “Inspectorate”) was formed in 2012 following a merger of the former Inspectorate for Housing, Spatial Planning and the former Environment and the Transport and Water Management Inspectorate. The Inspectorate monitors and encourages compliance with national and European legislation and regulations; its environmental departments are charged with maintaining a safe and healthy living environment. The Inspectorate may advise on the compliance of WABO permits with national and European environmental law. In 2013, for example, it advised on 214 WABO permits, mainly concerning external safety and air emissions.

The Inspectorate operates on a basis of mutual trust with the supervised organisation and focuses on reducing the burden of supervision. A risk-based approach is used to profile potentially non-compliant installations with significant risks. The aim is to exploit available inspection capacity in the most effective and efficient way. Quality criteria for supervisory authorities with regard to knowledge, experience and availability have been revised recently (Ministry of Infrastructure and Environment, 2012). The legal status of the criteria is under discussion.

The Netherlands is also exploring the use of private compliance assurance in which “private parties (the regulatee and other third private parties) systematically assure compliance with formal regulations” (de Bree et al., 2013). The Inspectorate has begun to use covenants with companies that enjoy good compliance records. The approach, based on trust, regular oversight and periodic auditing, aims to increase compliance and reduce the regulatory burden for companies. The Ministry of Infrastructure and Environment commissioned a comprehensive study of private compliance assurance (see de Bree et al., 2013). The study identified indicators for promising conditions for such an approach relating to the suitability and willingness of the target population. It also set out conditions for success of the meta supervision required by the public regulator.

Spending cuts for supervision and enforcement of environmental regulations have raised concerns as have recent reports from the Dutch Safety Board. For instance, the review of the Odfjell Terminals’ safety record over 2000-12 points to significant shortcomings in the company’s internal operations and the actions of supervisory authorities (Dutch Safety Board, 2013). The Safety Board’s report expressed surprise that a company handling large quantities of hazardous substances could “muddle on” for such a long time. As noted by PBL (2013), given the government only monitors at the system level, it requires a high degree of trust in compliance and in the compliance assurance procedures. Care should be taken to ensure that constructive working relationship between supervisory authorities and the companies they supervise contribute to improved compliance and avoid unacceptable levels of tolerance for poorly performing companies.

5. Environmental information and policy evaluation mechanisms

The Netherlands has a very comprehensive system of environmental information and strong policy evaluation mechanisms. It has been a party to the UN Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters since 25 June 1998 and accepted the convention on 29 December 2004 (UN, 2015). Public access to environmental information is ensured by the 1991 Government Information Act and also by the EMA.

Overall, the public has a positive view of the living environment in the Netherlands. The Dutch liveability index (*Leefbarometer*) provides information about quality of life based on 49 indicators. Results show the population is satisfied with the quality of its environment.

In a recent survey, Statistics Netherlands (CBS) documented a sharp drop in level of concern for the environment and willingness to pay for environmental protection over the review period (2012). The number of people who think that air, water and soil are strongly polluted decreased from around 60% to 40% between 2002 and 2012.³ Over the same period, concern for the economic situation and security/crime increased, while the share of the population willing to pay more taxes to protect the environment dropped from 44% to 24%. Only 30% of people who thought that air, water and soil are strongly polluted were willing to pay more taxes for environmental protection (CBS, 2012).

5.1. Environmental information and stakeholder engagement

The Netherlands benefits from the expertise of world-class, independent research institutions and universities that produce high quality, policy-relevant outputs, which could be further exploited. Examples include PBL, the Netherlands Organisation for Applied Scientific Research (TNO), the Energy Research Centre of the Netherlands (ECN), the Netherlands Institute for Transport Policy Analysis (KiM), the Royal Netherlands Meteorological Institute (KNMI) and RIVM, along with a number of institutes specialising in water management, such as Deltares, as well as universities. The data and analysis produced by these research institutes provide a strong scientific evidence basis for the formulation and evaluation of environmental policy, as well as providing information to the public. However, the outcome of these institutions is not always used in policy making to its full potential. Several key sources of environmental information are briefly summarised below.

One of the most prominent and comprehensive reviews of environmental policy is PBL's report series "The Balance of the Living Environment" (*Balans van de Leefomgeving*).⁴ These reports are an authoritative overview of environmental policy in the Netherlands. They have a high political profile, as they are presented to the minister and to Parliament. The reports assess the present state of the environment and nature, as well as the impacts of existing policies on environmental pressures and quality, now and in the near future. The report is supported by a dedicated website with forward-looking indicators comparing expected developments to quantifiable policy objectives. After producing this report annually in 1995-2009, PBL switched to bi-annual publication.

Since 1999, the Environmental Data Compendium (www.environmentaldata.nl) has provided indicators on the state of the living environment in the Netherlands. It is a joint publication of CBS, PBL and the Wageningen University Research Centre.

The Knowledge Centre InfoMil is a key source of information on environmental legislation and policy. It was established in 1995 to provide practical information to policy makers who are responsible for implementation of environmental policy and legislation. InfoMil, hosted by the Ministry of Infrastructure and Environment, also serves as a forum of exchange between the ministry and environmental authorities at provincial, regional and local levels.

The Dutch Sustainability Monitor, published every two years since 2009, quantifies progress in sustainable development. The report presents historic trends (and comparisons with EU-averages) for a range of composite indicators capturing the dimensions of quality of life and resource use. The report is produced by CBS, the Bureau for Economic Policy Analysis (CPB), PBL and the Netherlands Institute for Social Research (SCP).

More recently, the Minister of Infrastructure and Environment commissioned a group of institutes to develop the “Atlas of our Living Environment” (*Atlas Leefomgeving*). This is an innovative online platform to integrate spatial information about the quality of the living environment and make it publicly accessible. The Atlas makes it possible to view various environmental aspects at a certain location or to compare various locations. It uses maps and background information about noise, air pollution, green spaces, external safety, soil, asbestos, cultural heritage, perception of the living environment and regional planning programmes (*Atlas Leefomgeving*, 2015).

In addition to the various sources of environmental information available for decision makers and the public, there are established institutions to engage stakeholders in environmental policy making. For example, the Participation Directorate of the Ministry of Infrastructure and Environment advises on stakeholder participation. In the context of modernising environmental policy, the government is also exploring new ways of engaging stakeholders and civil society. For example, the “Sustainable Action” programme seeks to expand opportunities for the private sector and civil society to help reach environmental goals.

5.2. Policy and project evaluation mechanisms

Large government investments in infrastructure require a social cost-benefit analysis (SCBA) from CPB. PBL often provides second opinions to these SCBAs. In 2013, CPB and PBL released an updated SCBA protocol, endorsed by the government, with special provisions for quantifying (and possibly monetising) environmental and nature benefits (see Romijn and Renes, 2013).

Since public policies and investment projects can have large impacts on GHG emissions (especially in the transport and energy sectors), project and policy assessments should take them into account. According to a recent OECD survey, the Netherlands uses a monetary carbon value to assess investment projects in the transport sector. However, this is not the case in the energy sector; given that these emissions are covered by the EU ETS, the net impact of GHG emissions is close to zero. Monetary carbon values are not taken into account in *ex ante* or *ex post* policy assessments more broadly (OECD, 2014c).

In the Netherlands, it is common practice to invite research institutes to conduct *ex-post* and *ex-ante* evaluation studies of policy proposals. Mechanisms for engaging the scientific community in policy analyses and the policy development process include the Council for the Environment and Infrastructure (RLI), an independent advisory board for the government and Parliament. In certain cases, the government requests monitoring studies to support specific policies or initiatives. For example, CBS produced a document series on Green Growth, while PBL and ECN launched a new Energy Policy Monitor in 2014 to support the 2013 Energy Agreement.

A national programme, the Economics of Ecosystems and Biodiversity (TEEB), was launched in 2012. It focuses on national, regional, city and overseas cases, as well as trade flow impacts on ecosystem services abroad and business dependencies on ecosystem services (Wilson et al., 2014). The first version of the Digital Atlas of Natural Capital (DANK) became available at the end of 2014. The programme aims to increase awareness of, and methods for, economic evaluation of ecosystem services in decision making. There have also been recent efforts to develop Natural Capital Accounting (NCA), with some experiments to integrate natural capital into national and regional accounts, as well as support business initiatives to account for natural capital.

Until recently, CPB and PBL assessed political parties' election manifestos with respect to their impact on the economy and the environment (CPB and PBL, 2012). This assessment provided voters with a uniform comparison of party promise issues. However, CPB announced it will no longer provide the service due to budget restrictions.

Environmental impact assessment and strategic environmental assessment

The Netherlands has a strong tradition of high quality environmental impact assessment (EIA) for projects with possible impacts on the environment. Formal regulations on EIA were introduced as early as 1986 in the Environmental Protection Act (now the Environmental Management Act). Current procedures are based on EU directives for strategic environmental assessment (SEA) (2001/42/EC) and for EIA (2011/92/EC). The Environmental Assessment Modernisation Act of 2010 updated Dutch legislation to limit administrative costs associated with environmental assessments (Arts and Schijf, 2014).

EIAs show how proposals will affect the environment and whether alternatives would achieve goals in a more sustainable way. The EIA is linked to mandatory evaluation procedures for major plans or decisions about “complex” projects. As such, it is a prerequisite for the construction of major infrastructure, such as oil refineries, nuclear power plants, chemical plants, roads, railways, and oil and gas pipelines. Stakeholder participation in the EIA and decision making is required. There are also provisions allowing for appeals of final decisions.

Since 2010, a simplified EIA procedure is available for projects with limited environmental impacts, with the aim of limiting administrative costs. In such cases, the competent authority has discretion to tailor the requirements of the EIA. For example, the authority can decide when to start the EIA, how it will be linked to planning or decision making, how alternatives will be developed, how the quality will be guaranteed and how stakeholders will be engaged.

From the 1980s, when EIA became a formal requirement, it was required at both project and strategic levels. As such, the Netherlands was an early adopter of SEA and has benefited from a long experience in application (Arts and Schijf, 2014). SEA considers environmental consequences in plans and programmes, with specific emphasis on the strategic phase.

The Netherlands Commission for Environmental Assessment (NCEA), an independent advisory body that reviews and reports on the scope and quality of environmental assessments, exerts significant influence (Box 2.4).

Several studies have evaluated the use of EIA and SEA in the Netherlands. Arts (2014) reviewed several and drew a number of conclusions that point to the positive influence of these assessments in the Netherlands. Overall, evaluations have shown clearly that EIA and

Box 2.4. The Netherlands Commission for Environmental Assessment

The Netherlands Commission for Environmental Assessment (NCEA) is an independent advisory body of experts established by decree in 1987. Its responsibilities are set out in the Environmental Management Act. The commission advises governments and competent authorities (both in the Netherlands and abroad) on the quality of environmental assessments (both EIA and SEA reports). It does not produce environmental assessments itself, which are usually completed by government authorities, consultants or other private parties. Instead, it reports on the scope and quality of the assessments. Its advice is a mandatory component of the SEA procedure for plans and of the EIA procedure for “complex” projects (Arts and Schijf, 2014). Over the past 25 years, some 2 600 EIAs and SEAs have been reviewed (NCEA, 2012). The commission exerts significant influence through its independence, expertise and transparency.

As of 2014, the commission’s secretariat had about 35 staff, led by a chair and a small management team (NCEA, 2015). It is able to leverage the expertise of several hundred Dutch and international experts in environment and other fields (economics, social issues, etc.). The commission may advise competent authorities at any stage during the process, including after it ends. It operates independently from government and does not become involved in decision making. All of its reports are publicly available on its website.

In addition to its work in the Netherlands, the commission also advises other countries on issues such as strengthening assessment systems for both EIA and SEA, and capacity building. The commission regularly documents lessons learned in the application of EIA and SEA, accumulating a significant body of experience.

Source: NCEA (2015, 2012, 2011); Arts and Schijf (2014).

SEA are highly effective, although there is some disagreement about their efficiency as measured by delays and costs imposed. Studies have demonstrated that EIA and SEA influence decision making and enhance environmental awareness. The status of legal requirements, transparency of decision making and quality of the study were singled out as the most important factors for the performance of EIA and SEA. The NCEA is considered instrumental in improving the quality of EIA and SEA. In general, procedures are seen as an obligation; in practice, stakeholders typically only implement measures that are legally required.

Recommendations on environmental governance and management

Environmental governance framework

- Develop a clear, comprehensive, long-term vision for environmental policy that provides a coherent framework for specific medium- and short-term action plans. The vision should reinforce and support the cross-sectorial approach embodied in the Environment and Planning Act.
- Seize the window of opportunity provided by the introduction of the Environment and Planning Act and the introduction of secondary legislation to establish a strong footing for securing environmental performance in the context of the recent decentralisation trend, providing greater discretion to sub-national authorities in balancing economic, social and environmental considerations.

Recommendations on environmental governance and management (cont.)

- Continue to strengthen efforts related to external safety (including preventing chemical accidents). This may include improving guidance for companies on how to deal with specific external safety issues; extending the enforcement of rules and considering the performance of SMEs; improving the transparency of the permitting process to promote accountability and public participation; and working with (large) companies to enhance their safety culture.
- Better exploit potential synergies between the Water Framework Directive and Natura 2000 by, for example, giving greater weight to ecological considerations in water management.
- Ensure the newly established Environmental Services (ODs) carry out their tasks in an effective manner that will support strong and consistent environmental performance. This could be supported by: consolidating the number of ODs (considering economies of scale, possible specialisation and the relevant ecological scale); ensuring sustainable funding; strengthening mechanisms for the exchange of good practice and expertise among ODs; establishing national mandatory quality criteria; and monitoring the quality of performance.

Voluntary agreements

- Consider using voluntary agreements such as covenants and “Green Deal” projects in a more selective manner by limiting their use to circumstances where “win-win” solutions can lead to expected policy outcomes without reliance on regulatory sanctions.

Environmental compliance and enforcement

- Continue to explore the possibility to improve the existing liability regime as part of efforts to better deal with the potential impacts of new, emerging risks.

Environmental information and policy evaluation

- Strengthen the link between science, policy analysis and policy evaluation, while reinforcing the capacity and knowledge base for environmental policy within relevant ministries by making better use of the available research outcomes. In particular, reinforce the independence of public research institutes, strengthen the use of independent policy assessment and cost-benefit analysis, and broaden the use of explicit carbon values in policy evaluation.

Notes

1. Dutch target under the EU Directive on Energy Efficiency (2012/27/EU).
2. External Safety (Establishments) Decree (*Bevi, Besluit externe veiligheid inrichtingen*) May 2004; Decree on the External Safety of Pipelines (*Bevb, Besluit externe veiligheid buisleidingen*) July 2010; External Safety (Transport Routes) Decree (*Bevt, Besluit externe veiligheid transportroutes*) January 2015; Registration Decree on Risk Situations Involving Hazardous Substances (*Registratiebesluit externe veiligheid*) November 2006.
3. Note that there were some differences in the surveys for 2000-02 and 2012. Nevertheless, the general trend has been corroborated by other studies (see PBL [2010], *Prioritering maatschappelijke vraagstukken, 2006-10*, The Hague).
4. Prior to 2010, these reports were called *Milieubalans* (Environmental Balance).

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