PBL Netherlands Environmental Assessment Agency

Sustainable Development Goals in the Netherlands

BUILDING BLOCKS FOR ENVIRONMENTAL POLICY FOR 2030

Policy Study

Sustainable Development Goals in the Netherlands

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Building blocks for environmental policy for 2030

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Sustainable Development Goals in the Netherlands. Building blocks for Environmental policy for 2030

The Hague, 2016
PBL publication number: 1966

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Ultimate responsibility
PBL Netherlands Environmental Assessment Agency

Graphics
PBL Beeldredactie

Acknowledgements
PBL would like to thank the feedback group: Saskia Tjeerdsma (Ministry of Foreign Affairs), Jaco Tavenier (Ministry of Infrastructure and the Environment) and Hans Keulen (Ministry of Economic Affairs). Thanks also go to Ries Kamphof and Gabi Spitz (Kaleidos Research) and Albert Faber (Scientific Council for Government Policy) for their valuable input on an earlier version of this report.

English translation
Christien Ettema, Shades of Green

English-language editing
PBL Publishers

Production coordination
PBL Publishers

Layout
Textcetera, The Hague

PBL Netherlands Environmental Assessment Agency is the national institute for strategic policy analysis in the fields of the environment, nature and spatial planning. We contribute to improving the quality of political and administrative decision-making by conducting outlook studies, analyses and evaluations in which an integrated approach is considered paramount. Policy relevance is the prime concern in all our studies. We conduct solicited and unsolicited research that is always independent and scientifically sound.

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Summary

On 25 September 2015, the United Nations General Assembly adopted the 2030 Agenda for Sustainable Development. At the heart of this Agenda are 17 Sustainable Development Goals (SDGs) and 169 associated targets. These goals and targets build on the Millennium Development Goals (MDGs), which expired in 2015, and on other international agreements. However, where the MDGs were mainly aimed at poverty reduction in developing countries, the 2030 Agenda is a broad sustainability agenda for all countries, including developed countries such as the Netherlands. This report analyses the implications of the Sustainable Development Goals (SDGs) for environmental policy in the Netherlands. What are the national policy choices with regard to the physical environment, in light of these SDGs?

The analysis concludes that SDG implementation in the Netherlands can build on existing national policy targets, policy programmes and monitoring reports, but that certain adjustments will be required. First of all, the global SDGs have to be translated into a national ambition level, consisting of a clear, long-term vision supported by new and updated national policy targets for 2030. Secondly, successful SDG implementation requires close coordination of policy efforts and responsibilities between various ministries and provincial and local authorities, thereby ensuring policy coherence. Furthermore, active participation of various groups within society (e.g. citizens, businesses, NGOs) is required in defining and implementing the national vision and policy targets. Finally, a periodic national monitoring report is needed to track progress and – depending on the political ambition – to promote accountability by explaining underlying developments or even to evaluate policy performance.

Sustainable Development Goals in the Netherlands

The SDGs provide a new international reference for sustainable development for *all* countries

The 2030 Agenda is not legally binding, but the signatories have committed to make every effort to fully implement the Agenda by 2030. The Agenda calls on governments to translate the global SDGs into national targets and policies. As such, the SDGs provide a new international reference for development cooperation policy as well as international and national sustainability policies. The task of national governments is to set a level of ambition and formulate a clear, long-term vision defining what they would like to achieve with the 2030 Agenda.

The Netherlands already has policy targets in place for many environment-related SDG targets

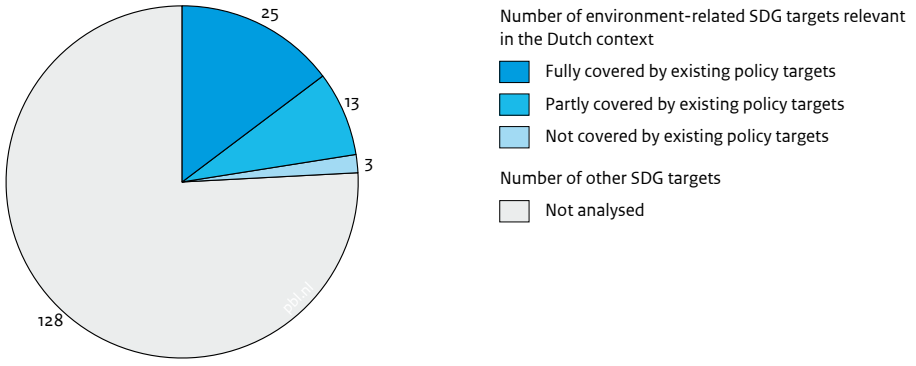
Of the 169 SDG targets, 41 targets address the quality of the physical environment either directly (e.g. water, air, climate, biodiversity) or indirectly (e.g. via agriculture, industry, cities and sustainable consumption and production). For an overview of the environment-related SDG targets, see Appendix A. The remaining 128 SDG targets mainly address social and economic development and means of implementation. For the majority of the 41 environment-related SDG targets, the Netherlands already has relevant policy targets in place, most of which have been agreed at EU or UN level. However, most of these policy targets are aimed at 2020, while most SDG targets are defined for 2030.

Three categories of environment-related SDG targets can be distinguished (Figure 1). The first and largest category consists of SDG targets that are fully covered by existing Dutch policy targets. This category includes SDG targets on water (goal 6), energy (goal 7) and terrestrial biodiversity (goal 15), as well as various SDG targets from other goals. The second category consists of SDG targets that are only partly covered by existing Dutch policy targets and for which overarching national targets are currently lacking. Finally, the third and smallest category consists of SDG targets for which the Netherlands currently does not have relevant policy targets in place. This category includes SDG targets addressing 'education for sustainable development and sustainable lifestyles' (target 4.7), 'information and awareness for sustainable development and lifestyles in harmony with nature' (target 12.8) and 'education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning' (target 13.3).

Translating the global SDGs to national policy targets for 2030 involves defining new policy targets for the SDG themes that are insufficiently addressed by existing national targets, and updating relevant existing national targets to the 2030 horizon. This should also be done at EU level, given that most of the current targets have been agreed at that level. It should be noted that when SDG targets are insufficiently covered by existing policy targets, the elements not covered may still be addressed by national policies. For example, there are various national policy initiatives – without explicit targets –

Figure 1

Environment-related SDG targets covered by existing Dutch policy targets, 2015



Source: PBL Netherlands Environmental Assessment Agency

to increase knowledge of sustainability in Dutch society (SDG targets 4.7 and 12.8).

Policy efforts are falling short of achieving existing Dutch policy targets

In the *Assessment of the Dutch Human Environment 2014*, PBL concluded that the Netherlands is falling behind on many of its policy targets related to the physical environment. Targets for air and water quality and nature conservation will only be achieved if policy efforts are intensified, while targets aimed at reducing food wastage and environmental pressure on ecosystems require fundamental policy redesign. The 2014 assessment further concluded that progress on various policy targets had slowed down in recent years, which means that these targets will not be achieved. The national policy targets evaluated in the 2014 assessment directly relate to about half of the 41 environment-related SDG targets.

New national targets and those that need updating could be based on individual countries' fair share in the global sustainability effort and on *sufficient* absolute decoupling

Translating the global SDG targets into the national context requires the identification and definition of new and updated national policy targets. These national targets should cover the most important elements of the SDG targets and be relevant in the national context. The SDG targets leave ample room for interpretation; most of them are phrased in broad and/or non-quantitative terms and defined at global level, leaving it unclear what actions or target levels would be required on a national level. For SDG targets addressing global environmental problems (e.g. climate change, biodiversity loss), national targets may be derived based on individual countries' fair share in the global effort; for instance, by taking into account their environmental impact beyond national borders. Translating SDG targets aimed at decoupling (environmental impact decreases while production increases) could be based on assessing what level of absolute decoupling would be sufficient to achieve the underlying target. For example, a national target for increasing the share of renewable energy in the energy mix should be based on the share that would contribute sufficiently to the achievement of a low-carbon energy system in the long term. Ultimately, it is up to politicians to define national targets, in close consultation with actors within society, such as NGOs, businesses and academics.

SDG implementation in the Netherlands can build on existing national policy programmes

The themes addressed by the environment-related SDG targets are not new to Dutch policy. New and updated policy targets for 2030 can be integrated in existing or planned policy processes, such as the Green Growth policy, the Government Vision on Nature and the Future Agenda for Environment and Sustainability. Other European countries are also working on integrating the SDGs into existing policy processes. For example, Germany aims to integrate the SDGs into its national sustainable development strategy, while Sweden aims to base national SDG implementation on the principle that all its national and international policies should contribute to fair and sustainable global development.

The broad range of themes addressed by the SDGs calls for clearly defined policy responsibilities with regard to specific policy targets and ensuring policy coherence

Establishing clearly who would be responsible for the implementation of specific SDG targets and for

ensuring policy coherence is crucial for successful SDG implementation. The diversity of SDG themes not only requires the involvement of various ministries, but also of sub-national authorities, such as provincial authorities and local councils. Furthermore, it is essential that the interlinkages between SDG targets (synergies and trade-offs) are also taken into account. For example, policy themes for agriculture, water management, energy, climate and biodiversity are strongly interconnected. A 'silo approach' to SDG implementation should hence be avoided.

In addition to the interlinkages between various policy targets at the national level, environmental burden shifting to other countries should also be taken into account. For example, national policy measures, such as biodiversity conservation, increased use of biofuels and reduced use of agricultural inputs, may cause production to be shifted abroad and thus could lead to an increase in unsustainable agricultural activities and associated environmental problems in those countries. These international effects are not explicitly addressed in the 2030 Agenda. Footprint indicators, which relate national consumption to environmental impact both at home and abroad, may be used for assessing individual countries' fair share in the global sustainability effort and be included in the national follow-up and review.

A clear and powerful vision may promote civic participation

National governments cannot achieve the SDGs all by themselves. The scope and complexity of the SDGs require active participation by a broad range of actors (e.g. citizens, businesses, NGOs), not only to define national ambitions (what do we as society wish to achieve?), but also for implementation (how are we going to achieve these ambitions?) and monitoring (are we succeeding?). A clear and powerful long-term vision may inspire and motivate these actors to actively contribute to the implementation of the 2030 Agenda. To accelerate implementation, governments may actively facilitate national initiatives, such as public-private partnerships for development and sustainability. Through monitoring and evaluation, governments can learn from these initiatives for further policy development.

For national follow-up and review, the role of monitoring should be defined beforehand

In addition to national SDG implementation, the 2030 Agenda also calls on governments to facilitate systematic follow-up and review. Periodic reports on national monitoring may serve this purpose. An important first step is to determine what the role of such reports should be; should they merely describe trends in indicators relevant to specific SDG targets, or also report on accountability with regard to societal and policy developments underlying the trends observed? If the monitoring activities are to assess the extent to which the targets are expected to be achieved, *ex ante* policy evaluation would be required. Businesses, NGOs, local councils, provincial authorities and other parties may report on their own contribution to SDG implementation. Linking those reports to the national monitoring report will strengthen the role of these actors and increase the comparability of sustainability efforts between public and private parties.

A national SDG monitoring report for the Netherlands does not have to be developed from scratch, but can build on the *Sustainability Monitor of the Netherlands*, a periodic report that keeps track of sustainability in the Netherlands, using a broad set of indicators. However, the conceptual framework and the indicator set of this sustainability monitor do not fully match the SDG system of goals and underlying targets. The Inter-Agency and Expert Group on SDG Indicators is tasked with developing an indicator set for global SDG monitoring, including a framework to organise and present these indicators. The outcome of this effort – which is expected by spring 2016 – may be used to further think through the design options for a national monitoring report. By then, it could also be assessed whether and how future reports of the *Sustainability Monitor of the Netherlands* and the *Assessment of the Dutch Human Environment* could respectively be used to report on accountability and provide *ex ante* policy analyses of SDG implementation.

FULL RESULTS

Introduction

This is an Agenda of unprecedented scope and significance. It is accepted by all countries and is applicable to all, taking into account different national realities, capacities and levels of development and respecting national policies and priorities. These are universal goals and targets which involve the entire world, developed and developing countries alike. They are integrated and indivisible and balance the three dimensions of sustainable development.

The 2030 Agenda for Sustainable Development; Paragraph 5

In September 2015, the United Nations General Assembly adopted the 2030 Agenda for Sustainable Development (UN, 2015b). The 2030 Agenda is a key outcome of the 2012 UN Conference on Sustainable Development (Rio+20). It builds on the Millennium Development Goals (MDGs), which expired in 2015 (see Box 1.1), and on other international agreements. Set for the 2016–2030 period, the Agenda offers a reference for international sustainable development. It consists of five parts:

1. Preamble
2. Declaration
3. Sustainable Development Goals (SDGs) and targets
4. Means of implementation and the Global Partnership
5. Follow-up and Review

Keywords are transformation, integration and universality. At the heart of the 2030 Agenda are the 17 Sustainable Development Goals (SDGs) and the associated 169 targets that operationalise the goals and guide the process of sustainable development (*transformation*). The goals and targets integrate the three dimensions of sustainable development: the economic, social and environmental (*integration*). Where the MDGs mainly aimed at poverty reduction in developing countries (with developed countries committing to a Global Partnership for Development), the 2030 Agenda is a broad sustainability agenda for *all* countries, both developing and developed (*universality*). For example, goal 2 combines ending hunger with promoting sustainable agriculture, while goal 8 addresses not only economic growth and employment but also the decoupling of economic growth from environmental degradation. In addition, three goals explicitly address the global challenges related to climate and biodiversity (goals 13–15).

The 2030 Agenda is aspirational; the agreed goals and targets are not legally binding. Governments agreed to set their own national targets, guided by the global level of ambition of the Agenda, and to incorporate these targets in national planning processes, policies and strategies. However, the Agenda provides little guidance on how to do this, and the goals and targets leave ample room for interpretation. Only one recent study regarding Sweden offers first insights into the challenges involved in national implementation of the 2030 Agenda (Weitz et al., 2015). This study concludes that many SDGs deal with issues that are central to the political and social debate in Sweden and that the SDGs are far from a marginal add-on to current policy and action.

For the Netherlands, the 2030 Agenda provides a reference for development cooperation policy, international policy on sustainable development and national sustainability policies. Implementation of the 2030 Agenda is therefore a government-wide responsibility, involving, in particular, the Ministries of Foreign Affairs; Infrastructure and the Environment; Economic Affairs; Public Health, Welfare and Sport; Social Affairs and Employment; Education, Culture and Science; and Finance. However, implementation of the Agenda at national level has yet to be worked out in detail.

In additional to national implementation, governments agreed to engage in systemic follow-up and review of the Agenda's implementation to track progress. The national

1.1 Millennium Development Goals

The Millennium Development Goals (MDGs), which were adopted by 189 countries during the Millennium Summit in 2000, aimed to eradicate extreme poverty in the world. The MDGs provided a guideline for international development cooperation, also for the Netherlands. The strength of the MDGs was that they consisted of a *limited* number of political goals, supported by a set of *quantitative* targets with *clear deadlines* for achieving these targets (Melamed, 2012). The MDGs were aimed at developing countries and required a commitment of developed countries to provide financial and technological support. Among other things, the MDGs included targets to halve poverty and hunger by 2015 relative to 1990 levels, to achieve universal primary education, and to reduce child mortality rates by two thirds between 1990 and 2015. One MDG specifically addressed environmental themes such as biodiversity loss and climate change.

Recent assessments clearly show that considerable progress has been made on most goals and targets, with some of the global targets fully achieved (UN, 2015a). However, progress has been uneven, leaving significant gaps between countries and groups of people. Inequalities between rich and poor, men and women, urban and rural areas have not decreased substantially. Furthermore, problems of climate change and environmental degradations have only worsened, which could undermine the progress made (Hilderink et al., 2009). The MDGs have been criticised for being primarily a social agenda, paying insufficient attention to environmental issues such as climate change. In addition, the MDGs did not explicitly address important themes such as economic development and energy, and failed to recognise the interlinkages between the various issues addressed by the targets. Finally, the goals and targets were developed by donor countries within the OECD's Development Assistance Committee (OECD-DAC), without significant participation of local stakeholders.

Many of these criticisms have been addressed in developing the 2030 Agenda. The SDGs also consist of goals and targets, but are much broader than the MDGs as they also cover a range of environmental and economic themes. Furthermore, the 2030 Agenda is explicit about the integrated nature of the goals and targets (*integration*) and sets these goals and targets for all countries, not only developing nations (*universality*). Finally, the SDGs have been defined in an inclusive, participatory process, involving as many stakeholders as possible.

reviews are to contribute to regional and global reviews and build on existing platforms and processes. Again, the follow-up and review processes are voluntary and country-led. A set of global indicators, developed by the Inter-Agency and Expert Group on SDG indicators (IAEG-SDGs), is expected to be available by spring 2016.

A recent study on the performance of the 34 Member States of the Organisation for Economic Co-operation and Development (OECD) with regard to the SDGs ranked the Netherlands among the seven best performing countries (Kroll, 2015). This study used two 'snapshot indicators' per goal to assess which countries are ahead, or behind, of other OECD countries in their performance on each of the SDGs. However, the question is how relevant the selected indicators are in the context of the Netherlands. Furthermore, the indicator set only covers a subset of SDG targets and the study does not consider current and planned policies.

The Dutch Ministry of Foreign Affairs, together with the Ministries of Infrastructure and the Environment and of Economic Affairs, has requested PBL to assess the challenges of the 2030 Agenda for policies related to the human environment in the Netherlands. In this report we address this question by analysing the SDGs in the context of existing Dutch policy targets, by discussing the challenges surrounding national implementation of the SDGs, and by exploring the implementation of a periodic progress review based on a national monitoring report.

Chapter 2 examines to what extent the SDG targets for the physical environment are already covered by existing Dutch policy targets. Furthermore, this chapter assesses to what extent current and planned policy efforts are sufficient for achieving these existing targets, based on the results of the *Assessment of the Dutch Human Environment 2014* (PBL, 2015). Our analysis focuses on policy targets at national level, excluding Dutch policy targets for development cooperation and foreign policy. The autonomous Caribbean countries within the Kingdom of the Netherlands are not covered in this analysis.

Next, Chapter 3 examines a number of challenges for the national implementation of the 2030 Agenda. We provide several starting points for the translation of the global SDG targets into national ambitions and discuss the interlinkages between the SDGs and their implications for national implementation. Furthermore, we explore how

the national government may involve various non-state actors – such as citizens, cities, businesses and NGOs – in the process of defining and realising the national ambitions.

Finally, Chapter 4 examines how to provide for systemic follow-up and review through a national monitoring report. As it is still being debated how the SDGs should be measured, this chapter focuses on the policy choices. We discuss the potential roles of a national monitoring report and examine to what extent the existing *Sustainability Monitor of the Netherlands* (CBS, 2015) already covers the SDGs and the different monitoring roles.

TWO

Existing Dutch policy targets in light of the SDGs

We encourage all Member States to develop as soon as practicable ambitious national responses to the overall implementation of this Agenda. These can support the transition to the Sustainable Development Goals and build on existing planning instruments, such as national development and sustainable development strategies, as appropriate

The 2030 Agenda for Sustainable Development, Paragraph 78

2.1 Introduction

To assess the policy challenges of national SDG implementation, it is important to first identify the present state of policy. The SDGs are defined at global level and have yet to be translated into national targets. Hence, national performance on the SDG targets cannot yet be determined. However, it is possible to assess to what extent the SDGs are already covered by existing national policy targets. After all, over the past decades the Netherlands has committed to a wide range of sustainability-related targets and launched various policy programmes for their implementation.

In this chapter, we analyse how the SDGs relate to existing targets in Dutch human-environment policy. For this purpose, in Section 2.2, we select those SDG targets that are directly or indirectly related to the physical environment and relevant in the context of the Netherlands. In Section 2.3, we assess to what extent the selected SDG targets are already covered by existing policy targets in the Netherlands (mapping). Finally, in Section 2.4, we examine whether current and planned policy efforts are sufficient to achieve these existing targets (gap analysis), focusing on targets evaluated in the *Assessment of the Dutch Human Environment 2014* (PBL, 2015).

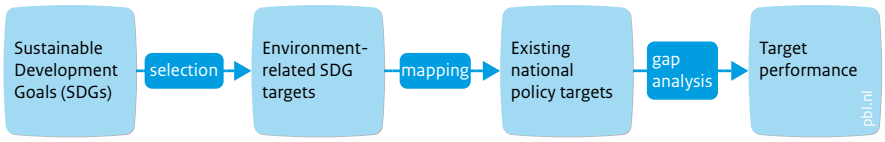
Our analysis does not include a detailed assessment of existing policy programmes or specific policies for achieving the present targets. However, it does provide insight into the extent to which the SDGs are already covered by existing national targets and the progress made on these targets (policy evaluation). These insights may provide a starting point to decide on the ambition level and policy effort required for national SDG implementation. Figure 2.1 outlines the various steps in our analysis.

2.2 Selection of environment-related SDG targets

The 2030 Agenda consists of 17 political goals (see Box 2.1) and 169 targets to operationalise these goals. The targets address three overarching themes: poverty reduction, sustainable consumption and production, and protecting and managing the natural resource base. In addition, each goal includes targets related to the means of implementation, including financial instruments, capacity building, market functioning, technology, institutional frameworks and access to information.

Our analysis focuses on environment-related SDG targets, independent of the goal they are part of. Accordingly, our analysis mainly concentrates on SDG targets addressing sustainable consumption and production, and protection and management of the natural resource base. Within these categories we focus on SDG targets that are relevant in the *national* context; SDG targets relevant to foreign policy (including international development cooperation) are excluded from our analysis. This implies that environment-related targets in the context of poverty reduction (e.g. access to clean drinking water and clean energy technology) are

Figure 2.1
Analysis of existing policy targets in light of the Sustainable Development Goals



Source: PBL Netherlands Environmental Assessment Agency

2.1 Sustainable Development Goals

Goal 1 End poverty in all its forms everywhere
Goal 2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Goal 3 Ensure healthy lives and promote well-being for all at all ages
Goal 4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Goal 5 Achieve gender equality and empower all women and girls
Goal 6 Ensure availability and sustainable management of water and sanitation for all
Goal 7 Ensure access to affordable, reliable, sustainable and modern energy for all
Goal 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Goal 9 Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
Goal 10 Reduce inequality within and among countries
Goal 11 Make cities and human settlements inclusive, safe, resilient and sustainable
Goal 12 Ensure sustainable consumption and production patterns
Goal 13 Take urgent action to combat climate change and its impacts
Goal 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development
Goal 15 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
Goal 16 Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
Goal 17 Strengthen the means of implementation and revitalize the global partnership for sustainable development

not covered. Finally, we do not consider the 63 SDG targets that relate to the means of implementation.

Sustainable consumption and production connects environmental issues (such as biodiversity loss, climate change, ocean acidification) and social themes (such as health, equal opportunities, labour conditions) to economic activities, products and markets. From a production perspective it requires cleaner production processes, eco-efficiency and corporate responsibility; from a consumption perspective it requires changes in lifestyle, consumption preferences and consumer behaviour of citizens and households. Our selection of SDG targets within the theme of sustainable consumption and production is derived from a UNEP discussion paper on indicators for SDG targets on this theme (Bizikova et al., 2015). Based on a literature review and stakeholder workshop this UNEP study identifies 18 SDG targets (from 10 different goals), all of which are included in our analysis. To this selection we added the SDG targets for water quality (target 6.3), disaster risk reduction (target 11.5) and environmental impact of cities (target 11.6), because of their relevance for the Netherlands. As a result, our final selection for this theme consists of 8 targets from goal 12, which specifically addresses sustainable consumption and production, and 13 targets that mainstream the objective of sustainable consumption and production into 9 other goals.

Protecting and managing the natural resource base relates to keeping environmental degradation, such as climate change and biodiversity loss, within acceptable limits (UNEP, 2014). This theme is addressed by the SDG

targets for climate change (goal 13), oceans, seas and marine resources (goal 14) and terrestrial ecosystems and biodiversity (goal 15). It is also addressed by various targets from other goals, such as the targets for agricultural genetic diversity (target 2.5), integrated water resources management (target 6.5) and water-related ecosystems (target 6.6). Our final selection for this theme consists of 20 SDG targets from 5 different goals.[1]

Adding the two themes together, our final selection of environment-related targets consists of 41 SDG targets from 13 goals (see Figure 2.2). The remaining 128 SDG targets mainly address social and economic development and means of implementation. Goals 5 (gender equality), 10 (inequality within and among countries), 16 (peaceful and inclusive societies) and 17 (means of implementation and the global partnership) do not include any environment-related targets. In the following sections, we analyse to what extent the selected SDG targets are already covered by existing Dutch policy targets and what the related policy choices are for national implementation (Section 2.3), and whether current and planned policy efforts are sufficient to achieve the existing Dutch policy targets (Section 2.4).

2.3 Mapping SDG targets onto existing Dutch policy targets

In this section, we assess to what extent the selected environment-related SDG targets (Section 2.2) are already covered by existing targets in Dutch national policy as agreed at national, regional (EU) and global (mostly UN) levels. Mapping SDG targets onto these current policy targets is far from a straightforward exercise, because the former leave ample room for interpretation (see Section 3.2). We therefore focus on the specific themes and problems addressed by the selected SDG targets and, at this level, compare them to relevant Dutch policy targets. Current Dutch policies for achieving these national policy targets are not included in this analysis.

Appendix A presents an overview of Dutch policy targets that are relevant for the selected SDG targets. This information is largely based on the Environmental Data Compendium (CBS et al., 2015). The overview includes both quantitative targets, such as for renewable energy and waste recycling, and qualitative and semi-qualitative targets, such as for disaster risk management and curbing illegal trade of protected species. Implementation programmes and policy visions that do not include additional or new targets are explicitly excluded from the analysis.

The Netherlands has committed to a range of global policy targets through various multilateral agreements, including the three Rio Conventions on climate change, biodiversity and desertification[2], the Sendai Framework for Disaster Risk Reduction, and the Basel, Rotterdam and Stockholm Conventions on hazardous chemicals and waste. At the European level, the Netherlands has committed to various policy targets as part of EU Directives, Strategies and Roadmaps. Policy targets agreed at national level are often a translation or further specification of European or global targets; examples include the Energy Agreement for Sustainable Growth and the Waste to Resource programme. As Appendix A shows, some SDG targets are covered only by policy targets agreed at national level. This is the case for integrated water resources management (SDG target 6.5) and reduction of waste generation (SDG target 12.5).

Our mapping analysis shows that the Netherlands already has policy targets for the majority of environment-related SDG targets (see Figure 2.2). Many of these policy targets have been agreed at EU or UN level. In our analysis, we distinguish three categories of environment-related SDG targets:

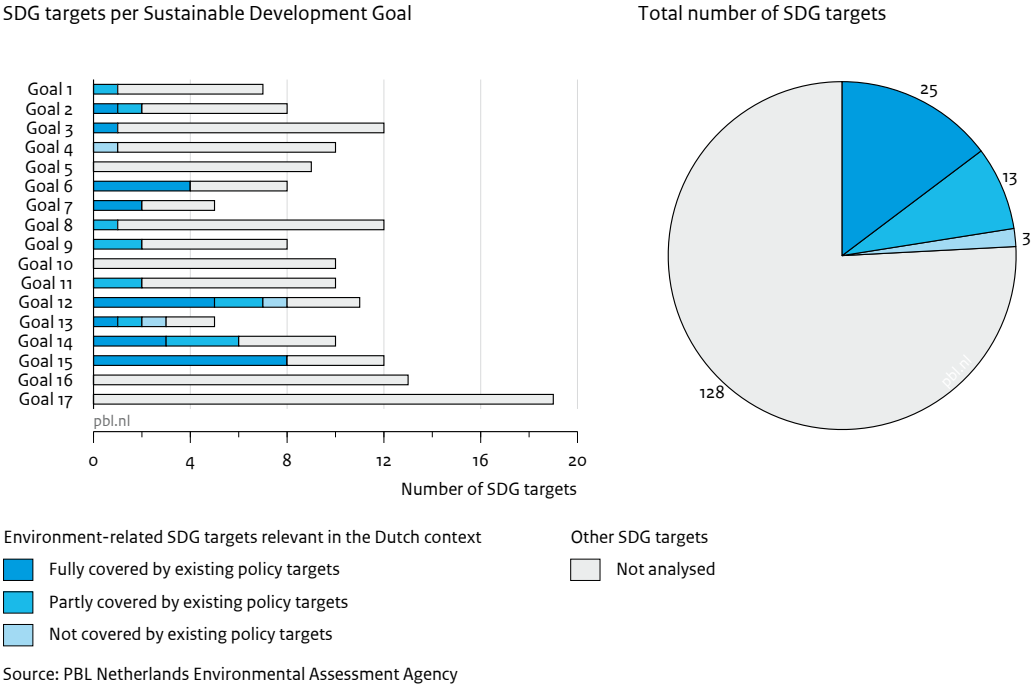
1. SDG targets fully covered by existing Dutch policy targets
2. SDG targets partly covered by existing Dutch policy targets
3. SDG targets not covered by existing Dutch policy targets

The first category consists of SDG targets of which all elements are covered by existing Dutch policy targets. This includes all selected SDG targets for water (goal 6), energy (goal 7) and terrestrial ecosystems and biodiversity (goal 15), plus a number of targets from other goals. For example, SDG target 7.2 and the present Dutch policy target for renewable energy are both aimed at increasing the share of renewable energy in the energy mix. However, while SDG target 7.2 aims to '*increase substantially* the share of renewable energy in the global energy mix *by 2030*', the present EU target for the Netherlands requires the share of renewable energy in total final energy consumption to be *14% by 2020*. This example illustrates that SDG targets and existing policy targets may have different ambition levels and different target horizons. Most SDG targets are set for 2030, while the existing policy targets are generally aimed at 2020. The 2020 horizon applies not only to overarching targets such as the Europe 2020 Strategy and the Roadmap Resource Efficient Europe, but also to various EU Directives (e.g. the Renewable Energy Directive and the EU Energy Efficiency Directive) and the Gothenburg Protocol for transboundary air pollution.

OWT

Figure 2.2

Environment-related SDG targets covered by existing Dutch policy targets, 2015



Source: PBL Netherlands Environmental Assessment Agency

Some existing policy targets are already past their 'due date' or very close to it, for example, the NEC Directive (national emission ceilings, to be met by 2010), the EU Air Quality Directive (by 2010) and the national policy brief on sustainable food production (by 2015). Hence, national implementation of the SDG targets requires that relevant existing policy targets be updated and aligned to the corresponding SDG targets, both in terms of ambition level and target horizon. After all, the 2030 Agenda calls on each government to 'set its own national targets guided by the global level of ambition' (paragraph 55). The EU has already set new policy targets for energy and climate for 2030 (European Council, 2014). Some other policy targets are in the process of being redefined for 2030, such as the emission ceilings of the NEC Directive, or are planned to be redefined soon, such as the biodiversity targets of the Convention on Biological Diversity (CBD). However, most other policy targets have yet to be updated.

The second category consists of SDG targets that are only partly covered by existing Dutch policy targets, or for which overarching targets are currently lacking. This category includes various targets on agriculture (goal 2), infrastructure and industry (goal 9), cities (goal 11) and sustainable consumption and production (goal 12). For example, the SDG target for sustainable agriculture (target 2.4) is partly covered by various EU directives, such as the Nitrate Directive, the Water Framework Directive, the Birds Directive, the Habitat Directive and the NEC Directive, but an overarching target addressing all aspects of sustainable agriculture does not exist. In addition, some SDG targets are addressed by internationally agreed policy targets that have not yet been translated into national policy targets for the Netherlands; for example, the 2015 Sendai Framework for Disaster Risk Reduction (relevant to SDG targets 1.5, 11.5 and 13.1) and the UNEP 10-year Framework of programmes on sustainable consumption and production (relevant to SDG targets 8.4 and 12.1). For all SDG targets in the second category it should first be assessed which of the currently unaddressed elements are relevant to the Netherlands, before any additional targets are defined. Furthermore, similar to the SDG targets in the first category, existing policy targets have to be updated and aligned to the corresponding SDG targets, both in terms of ambition level and target horizon.

The third category consists of SDG targets for which no corresponding Dutch policy targets were found. This is the case for SDG targets addressing 'education for sustainable development and sustainable lifestyles' (target 4.7), 'information and awareness for sustainable development and lifestyles in harmony with nature' (target 12.8) and 'education, awareness-raising and human and institutional capacity on climate change

mitigation, adaptation, impact reduction and early warning' (target 13.3). Although many of these themes, directly or indirectly, are covered by existing policies, the lack of national policy targets makes it difficult to measure progress and effectiveness of policies in these areas.

For SDG targets in the second and third category, the absence of overarching targets or insufficient coverage by existing policy targets does not mean that there are no relevant policies in place. For example, 'cross compliance' (EU, 2009) is a policy instrument of the EU's Common Agricultural Policy to promote sustainable agriculture (part of SDG target 2.4). Furthermore, the Netherlands has various policy initiatives (without explicit targets) to increase knowledge and awareness of sustainability issues (SDG targets 4.7 and 12.8), including the *DuurzaamDoor* programme for environmental education and sustainability awareness. The question is whether each and every element of all SDG targets should be covered by national targets. Hence, for all SDG targets insufficiently covered by existing policy targets it should first be assessed if and how they are already being addressed by existing policy *programmes*, before deciding whether it is necessary to formulate additional policy *targets*.

2.4 Gap analysis: the Netherlands' performance on existing policy targets

In the previous section, we assessed which of the environment-related SDG targets are already covered by existing Dutch policy targets. In order to provide insight into the policy effort required for national SDG implementation, a useful next step is to assess to what extent current and planned policy efforts are sufficient to achieve these existing policy targets (gap analysis). In this section, we evaluate target performance based on policy evaluation in the *Assessment of the Dutch Human Environment 2014* (PBL, 2015).

The *Assessment of the Dutch Human Environment* is a biennial review by PBL of the current state of the physical environment, gauging the performance of the Netherlands on relevant policy targets. Each Assessment covers a number of relevant systems, such as energy, food, water and housing. Table B.1 in Appendix B provides an overview of indicators from the 2014 Assessment and performance of the Netherlands on these indicators in relation to current policy targets (PBL, 2015). The last column of this table shows the related SDG targets.

About half of the environment-related SDG targets are covered by national targets evaluated in the 2014 Assessment. This Assessment concludes that although the Dutch physical environment is in fairly good shape, many policy targets are not being achieved. The good news is that, over the past decades, air, water and soil quality have improved and health damage from environmental pollution has substantially declined. Also, the number of endangered plants and animal species is no longer increasing. At the same time, the Netherlands is falling behind on many of its present policy targets, including international obligations. Targets for air and water quality and nature conservation will only be achieved if current and planned policy efforts are intensified, while targets aimed at reducing food wastage and environmental pressure on ecosystems require fundamental policy redesign.

This message is not new. But what is (relatively) new is that progress on various policy targets has slowed down in recent years, which means that these targets will not be achieved (PBL, 2013). Most of these policy targets are intermediary targets along the way to achieving a clean, healthy and safe environment for the long term. For this to happen, fundamental changes in production and consumption structures are unavoidable. The 2014 Assessment concludes that these transition processes are not being implemented efficiently or rapidly enough (PBL, 2015). The intentions of the 2030 Agenda call for a next step in Dutch environmental policy, including the defining of a national ambition level for 2030. The current policy gaps identified by the 2014 Assessment should be taken into account when defining this ambition level.

The 2014 Assessment does not cover existing Dutch policy targets related to SDG targets on soil pollution (target 3.9), natural resource use efficiency and decoupling (targets 8.4, 9.4, 12.1 and 12.2), hazardous chemicals (targets 3.9 and 12.4), corporate sustainability reporting (target 12.6), sustainable public procurement practices (target 12.7), oceans, seas and marine resources (all targets of goal 14), access and benefit sharing (targets 2.5 and 15.6), poaching and trafficking of protected species (target 15.7) and the impact of invasive alien species (target 15.8). Depending on the importance and urgency assigned by government and society to these issues, the corresponding national targets could be included in future versions of the *Assessment of the Dutch Human Environment* and be tracked by relevant indicators in the *Environmental Data Compendium* (CBS et al., 2015).

2.5 Conclusions

Implementation of the SDGs in the Netherlands requires a translation of the global SDG targets to national policy targets guided by the global level of ambition. As our analysis shows, defining the national ambition level for environment-related SDG targets can build on a broad range of existing policy targets to which the Netherlands has already committed. Many of these existing policy targets have been agreed at EU or UN level; targets agreed at national level are often a further specification of European or global targets. However, the ambition levels of these existing policy targets and the SDG targets are not always the same, and often difficult to compare. Furthermore, the existing targets are generally aimed at 2020, while most SDG targets have been set for 2030. Hence, national implementation of the SDGs requires that existing policy targets be updated and aligned to the corresponding SDG targets, both in terms of ambition level and target horizon. Obviously, this should also be done at EU level, given that most of the current targets are derived from EU targets.

Not all issues addressed by the environment-related SDG targets are covered by existing Dutch policy targets. A number of SDG targets are only partly covered, while some others are not covered at all. The latter include SDG targets addressing 'education for sustainable development and sustainable lifestyles' (target 4.7), 'information and awareness for sustainable development and lifestyles in harmony with nature' (target 12.8) and 'education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning' (target 13.3). The question is whether national targets should be formulated for each and every element of the SDG targets. To answer this question, a follow-up analysis is needed to determine whether the SDG targets that are insufficiently covered by existing policy targets are instead being addressed by existing policy programmes, and to assess in which cases additional national targets are still necessary.

The *Assessment of the Dutch Human Environment 2014* shows that although the Dutch physical environment is in fairly good shape, the Netherlands is falling behind on many of its present policy targets, including international obligations. Targets for air and water quality and nature conservation will only be achieved if policy efforts are intensified, while targets aimed at reducing food wastage and environmental pressure on ecosystems require fundamental policy redesign. The 2014 Assessment further concludes that the rate of progress on various targets has declined in recent years, such that various long-term targets have fallen out of reach. These concerns should be borne in mind when defining the ambition level for national SDG implementation.

Mapping the environment-related SDG targets onto existing national targets and conducting a gap analysis to evaluate the Netherlands' performance on these national targets is a first step in a broad policy analysis of national policy targets in light of the SDGs. Such analysis should cover all SDG targets and include a broad assessment of all existing policy efforts relevant to sustainable development.

Notes

1 SDG target 14.7 (*Small-Island developing states and least developed countries*) and 15.4 (*mountain ecosystems*) are not included in this selection, because they are not relevant to the country of the Netherlands (the autonomous Caribbean countries of the Kingdom of the Netherlands are not covered in this study).

2 The United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD) and the United Nations Convention to Combat Desertification (UNCCD).

Challenges for national SDG implementation

The Sustainable Development Goals and targets are integrated and indivisible, global in nature and universally applicable, taking into account different national realities, capacities and levels of development and respecting national policies and priorities. Targets are defined as aspirational and global, with each Government setting its own national targets guided by the global level of ambition but taking into account national circumstances. Each Government will also decide how these aspirational and global targets should be incorporated into national planning processes, policies and strategies. It is important to recognize the link between sustainable development and other relevant ongoing processes in the economic, social and environmental fields

The 2030 Agenda for Sustainable Development; Paragraph 55

3.1 Introduction

The 2030 Agenda calls on governments to set their own national targets, guided by the global level of ambition but taking into account national circumstances, and to incorporate these targets into national policy processes and strategies. In addition, various paragraphs of the 2030 Agenda emphasise that the goals and targets are integrated and indivisible and aim to contribute to coherent sustainability policies. Furthermore, it points out that not only governments, but also other parties, such as the private sector, civil society organisations and NGOs, play a vital role in the implementation of the 2030 Agenda.

This chapter focuses on these three challenges for national implementation of the SDGs. In Section 3.2, we examine how the global SDG targets may be translated into national policy targets. Next, in Section 3.3, we explore the integrated nature of the SDGs and what this implies for national implementation. Finally, in Section 3.4, we discuss how to involve the 'energetic society' in defining and achieving national policy targets.

3.2 From global SDG ambitions to national policy targets

The SDGs leave ample room for interpretation. Many targets are broadly defined and/or phrased in non-quantitative terms. In addition, most targets are defined at global level. This presents a major challenge for the translation of the SDGs to national policy targets, but also leaves room to account for national circumstances. In the following subsections we provide a number of starting points for this translation process. Ultimately, national policy targets should reflect what society wants to achieve, and hence it is up to politicians to define these ambitions. Obviously, various groups within society (e.g. NGOs, local councils, businesses and academia) should be involved in this process, not only to ensure public support and commitment, but also to inspire these groups to take action themselves (see Section 3.4).

3.2.1 Translation of broadly defined targets

Many SDG targets are broadly defined and vague in terms of what is expected. Among the environment-related SDG targets analysed in Chapter 2 of this report, about a quarter include the phrases *sustainable* use or *sustainable* production. But what exactly is meant by *sustainable food production* (target 2.4), *sustainable and resilient infrastructure* (target 9.1) or *environmentally sound technologies* (target 9.4)? Furthermore, many targets are multidimensional, addressing several issues at once. For example, target 1.5 aims to reduce exposure and vulnerability to *climate-related extreme events and other economic, social and environmental shocks and disasters*, and target 3.9 aims to substantially reduce the number of deaths and illnesses from *hazardous chemicals and air, water and soil pollution and contamination*. Tracking progress

on these broadly defined targets is generally not feasible with a single indicator.

For sustainable agriculture (part of target 2.4) the Netherlands has several national targets, but these are mostly limited to environmental aspects; an integrated set of targets has yet to be defined. In the *Assessment of the Human Environment 2012* (PBL, 2012b), PBL proposed a set of qualitative targets and related indicators. This set addresses a broad range of interrelated sustainability aspects including climate, biodiversity, resource efficiency, soil degradation, water scarcity, water pollution, animal welfare, animal health and labour conditions. Implementation of the sustainable agriculture SDG would require further elaboration, and prioritisation, of these aspects.

Translating broadly defined SDG targets to the national level thus requires defining a *set* of national policy targets. These policy targets should cover the most important elements of the SDG target in question (Dietz and Hanemaaijer, 2012; Hák et al., 2016). In addition, they should be relevant in the national policy context.

3.2.2 Translation of non-quantitative targets

About half of the environment-related SDG targets analysed in Chapter 2 are phrased in absolute or quantitative terms (including verbs such as *to ensure*, *implement*, *maintain*, *double*, *halve*). The remaining targets are relative: they aim to *reduce*, *increase*, or *minimise* something *substantially*, *progressively* or *significantly*, without defining a specific target level. These relative targets offer little guidance as to how to assess whether they are actually achieved. Obviously, it is possible to monitor whether progress is being made, but to determine whether the achieved improvements are *substantial*, *progressive* or *significant* requires an evaluative framework based on quantitative criteria, where possible. Such a framework has yet to be developed.

Many of the SDGs related to the human environment aim for a decoupling of production growth from environmental effects, for example within the context of economic growth (target 8.4), sustainable consumption and production (target 12.1) or cities (target 11.6). Decoupling is more specifically addressed by targets for sustainable agriculture (target 2.4), water scarcity (target 6.4), renewable energy (target 7.2), energy efficiency (target 7.3), waste (targets 12.4 and 12.5) and climate (target 13.2). Decoupling applies to the relationship between production growth and variables relevant to sustainable development, such as energy consumption, greenhouse gas emissions, resource use and biodiversity loss. Decoupling can be either relative or absolute. In the case of relative decoupling, total environmental impact still increases with production growth, but at a slower rate. In the case of absolute decoupling, total environmental impact declines with increasing production.

Only absolute decoupling indicates truly sustainable development, but it is still is no guarantee. After all, the rate by which environmental impacts are reduced may still be insufficient for timely achievement of environmental targets. For example, absolute decoupling of economic growth from greenhouse gas emissions offers no guarantee for keeping global temperature rise well below 2 °C above pre-industrial levels, as agreed upon at the Paris climate conference (UNFCCC, 2015). To meet this 2 °C target this century, global emission levels by 2100 would have to be zero or even negative (IPCC, 2014).

Hence, a relevant first step in the translation of non-quantitative SDG targets to national targets is to specify the underlying objectives for which decoupling is required. For instance, decoupling may be necessary for reducing specific health impacts or for achieving certain environmental targets (e.g. energy efficiency and renewable energy targets to support long-term climate targets). The next step, where possible, is to establish the level of *sufficient* absolute decoupling to achieve the underlying objectives. This level may be based on critical limits derived from impact (dose-effect) studies or be based on global or regional environmental limits that would have to be scaled to national level. With regard to 2030 targets serving as 'stepping stone' towards long-term sustainability goals (e.g. for climate or biodiversity), *sufficient* absolute decoupling would be a level of ambition that keeps the long-term policy targets in sight and allows for potential setbacks.

3.2.3 Translation of targets defined at global level

As mentioned previously, the SDG targets are mostly defined at global level and do not specify what actions or target levels are required at national level. For example, target 7.2 aims to increase the share of renewable energy in the *global* energy mix, while target 12.3 aims to reduce *global* food waste. Other targets are aimed at *transboundary* environmental problems, such as water scarcity (target 6.4), climate policy (target 13.2) and biodiversity loss (target 15.5). The latter targets are mostly qualitative, but may be quantified based on global or regional environmental limits (see Section 3.2.2).

Translation of these global SDG targets to national policy targets raises the question of equity. Equitable distribution of limited natural resources and fair sharing of responsibilities towards solving global environmental problems are important but difficult issues in the global

sustainability debate. Global consumption of natural resources and related advantages and disadvantages are generally not equally distributed among countries and between groups of people. Due to the global nature of many sustainability issues, the effects of non-sustainable practices in one country may also be felt in other countries. A case in point are the local impacts of climate change, most severely felt in developing countries but primarily caused by (historical) greenhouse gas emissions elsewhere in the world. Furthermore, international trade has greatly increased the geographical distance between production and consumption, such that the environmental impacts of production are not necessarily felt in the countries where the goods are consumed.

The question is how to determine individual countries' fair contribution towards achieving sustainability targets at global level, and how to take into account differences between countries with respect to development level and availability of resources. Paragraph 12 of the 2030 Agenda states: 'We reaffirm all the principles of the Rio Declaration on Environment and Development, including, inter alia, the principle of common but differentiated responsibilities, as set out in principle 7 thereof.'
The principle of *common but differentiated responsibilities* (CBDR) implies that developed and developing countries have different responsibilities based on differences in local circumstances, economic and institutional capacities, historical responsibilities in creating the problems in question, and specific development needs (Pauw et al., 2014). Ultimately, the responsibility for setting national sustainability targets lies with individual countries themselves, but they should take the principle of CBDR into account.

Studies in various European countries (Nykvist et al., 2013; Hy et al., 2015) and at EU level (Hoff et al., 2014) have explored how to translate global environmental limits – as defined by *planetary boundaries* – into national targets. *Planetary boundaries* is a quantitative science-based framework of nine Earth system processes which have boundaries beyond which there is a risk of irreversible and abrupt environmental change (Rockstrom et al., 2009; Steffen et al., 2015). Together these limits define a 'safe operating space' for social and economic development. The planetary boundaries framework was influential in defining the environment-related SDGs (Lucas et al., 2014). All nine boundaries are implicitly addressed by one or more goals (water, biodiversity and climate) or targets (land use, ocean acidification, air quality, biogeochemical cycles and chemical pollution).

The above-mentioned studies explored the biophysical characteristics of specific environmental change processes and critical boundaries (such as for climate change, biodiversity loss, nitrogen flows and global freshwater use) in relation to the spatial scale at which these processes take place (such as the global scale for climate change and watershed scale for water scarcity). They also addressed socio-economic factors, with a particular focus on international trade and the associated environmental effects in exporting countries.
These analyses provide valuable insight into countries' national share in causing global environmental problems.

Based on criteria such as responsibility, equality, capacity to act and the right to development, the fair contribution of individual countries towards achieving the global SDG targets can be assessed. Scientific *if … then* analyses may provide insight into the implications and efficiency of applying these criteria to various aspects of the human environment. Such analyses have frequently been conducted to determine national greenhouse gas emission reduction targets for global climate change mitigation (e.g. see Den Elzen et al., 2008; Hof et al., 2012), but other global environmental problems have yet to be analysed in this way.

3.3 The need for policy coherence

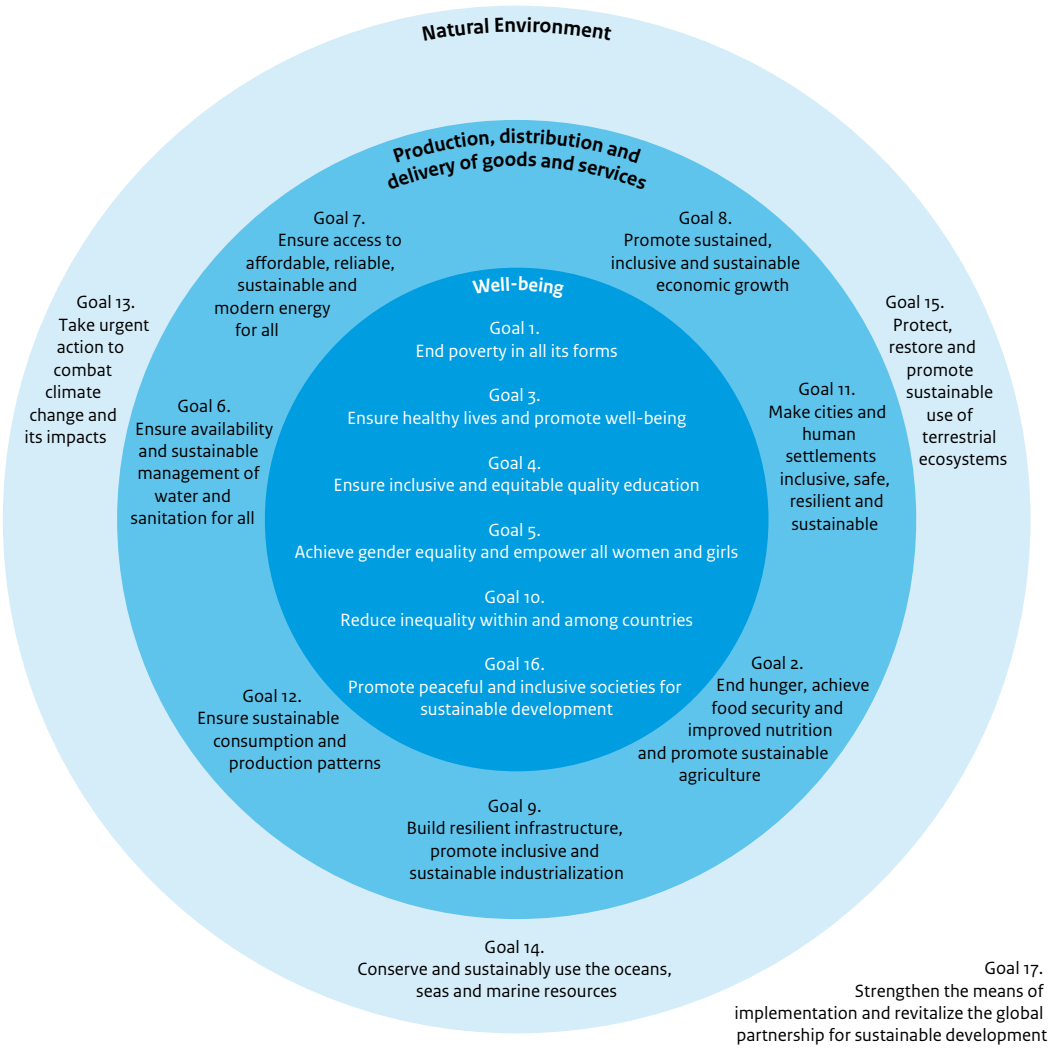
The SDGs comprise a broad set of goals and targets to guide the process of sustainable development. Paragraph 5 of the 2030 Agenda states that the goals and targets are 'integrated and indivisible and balance the three dimensions of sustainable development' (UN, 2015b). However, the interlinkages are not immediately apparent in the list of goals and targets (ICSU and ISSC, 2015). Most goals focus on specific problems and themes related to specific stakeholders and scientific communities, without referring to other goals. In particular, the three SDGs on natural resource management (goals 13–15) are relatively weakly connected to the other SDGs (Le Blanc, 2015).

Network analysis shows that several targets overlap and that various targets refer to multiple goals (Le Blanc, 2015). Some targets may also complicate or conflict with the realisation of other targets (e.g. see Van den Berg et al., 2011; PBL, 2012a). Gaining insight into the interlinkages (synergies and trade-offs) between goals and targets is a first step towards ensuring policy coherence and avoiding a 'silo approach' in the implementation. This section addresses these interlinkages and their implications for national implementation.

3.3.1 Interlinkages between the SDGs

Figure 3.1 presents a visual framework for classifying and clustering the 17 SDGs and their interlinkages (Waage et al., 2015).[1] The inner circle contains the 'people-centred' goals aimed to deliver individual and collective

Figure 3.1
Framework for classification and clustering of the Sustainable Development Goals



Source: Waage et al., 2015

Note that the goals are classified in three concentric layers, reflecting their main intended outcomes. Goal 17 is placed outside the circles, as it is an overarching goal addressing the means for global implementation of the other 16 goals. For the full wording of the goals, see Box 2.1.

wellbeing through improved health and education and promoting equitable distribution within and between countries (goals 1, 3–5 and 10). Achieving these goals relies on the realisation of goals in the second circle, which relate to production, distribution and delivery of goods and services including food, energy, clean water and waste management (goals 2, 6–9 and 11–12). Realisation of these second-level goals, in turn, depends on conditions in the biophysical systems that underpin sustainable development. Hence, the outer circle in Figure 3.1 contains three environmental goals addressing governance of natural resources and public goods such as land, oceans, biodiversity and the management of climate change (goals 13, 14 and 15). The framework presented in Figure 3.1 has much in common with a framework proposed by Raworth (2012). The latter describes the *safe and just operating space for humanity* (second circle) as a doughnut-shaped area between two boundaries: a social foundation (inner circle) and an environmental ceiling (outer circle).

The framework in Figure 3.1 provides insight into the interlinkages (synergies and trade-offs) between SDGs. For developed countries such as the Netherlands, the greatest challenge lies in achieving SDGs classified in the second circle, i.e. those aimed at natural resource use efficiency and decoupling of economic growth from environmental degradation (FES, 2015; Osborn et al.,

2015). The environmental problems addressed by these SDGs have strong transboundary impacts, such as climate change, which disproportionally affects the poorest populations of developing countries. In general, goals classified within the same circle are highly synergetic. However, many of the natural resources required for socio-economic development (inner circle) are finite and are also required for supporting vital ecosystem services (outer circle). Therefore, goals in the second circle aim to reduce potential trade-offs between inner-level and outer-level goals. In addition, they should address competition for resources that are required for achieving multiple goals.

Various studies have analysed the interlinkages between the goals and targets, either by looking at the explicit relationships between the underlying themes (Cutter et al., 2015; ICSU and ISSC, 2015), or from a natural resources perspective (UNEP, 2015). These studies conclude that 12 of the 17 SDGs promote human wellbeing through sustainable use of natural resources, and that 10 SDGs can only be achieved if natural resource use efficiency is substantially improved (UNEP, 2015).

Interlinkages between SDG targets may also be analysed by examining overlaps, as various SDG targets address similar themes, but in a different context. For example, disasters and extreme events are addressed in the context of poverty eradication (target 1.5), cities (target 11.5) and climate change (target 13.1); similarly, sustainability education is the main theme of target 4.7 but is also addressed in the context of sustainable consumption and production (target 12.8) and climate change (target 13.3). Decoupling economic growth from environmental degradation and sustainable management and efficient use of natural resources are central themes of the environment-related SDG targets. Resource efficiency and decoupling are broadly addressed under goal 8 on sustainable economic growth (target 8.4) and more specifically under many other goals, such as for agriculture and food (target 2.4), water (target 6.4) and energy (target 7.3). Sustainable management and efficient use of natural resources is broadly addressed under goal 12 on sustainable consumption and production (target 12.2) and more specifically under various other goals, such as for water (target 6.4), oceans, seas and marine resources (various targets under goal 14) and terrestrial ecosystems and biodiversity (various targets under goal 15).

Scenario studies based on quantitative models may provide further insight into potential synergies and trade-offs between various goals and targets. Studies covering the complete set of SDGs are not yet available, but there are numerous related studies describing a subset of the SDGs and their interlinkages (UNDESA, 2015).
For example, PBL (2012a) concludes that a high degree of synergy exists between achieving people-centred targets – such as improving access to sufficient food, safe drinking water and clean energy – and targets aimed at natural resource conservation and management – such as climate, air and biodiversity. Both sets of targets could be achieved simultaneously through a combination of resource efficiency improvements, better management of natural resources, and the promotion of more sustainable behaviour such as energy saving, waste reduction and lower meat consumption (PBL, 2012a). For example, better management and restoration of degraded ecosystems contribute to cleaner and more reliable water supply, greater carbon sequestration and improved soil fertility, while lower meat consumption reduces the pressure on agricultural resources, biodiversity and climate and increases global food availability. Another PBL study concludes that a high degree of synergy exists between efficiency improvements in the use of different natural resources, such as energy, land, phosphorous, water and fish (Van den Berg et al., 2011). Greater efficiency in natural resource use decreases the pressure on these resources and hence increases the likelihood of achieving other SDG targets that depend on these resources.

Both PBL studies also observed trade-offs between targets, particularly in relation to the growing competition for land (between food production, biomass production and biodiversity conservation) and the growing demand for water and nutrients to increase agricultural productivity. For example, while biodiversity conservation may contribute to greater carbon sequestration, it also reduces land availability for food and biomass production and hence could interfere with hunger reduction and renewable energy targets.
The growing demand for biofuels may further increase land pressure, resulting in higher food prices.

The *Sustainability Monitor of the Netherlands 2014* (CBS, 2015) concludes that the quality of life in the Netherlands is high, but that the way in which this quality is achieved places a substantial burden on vital resources, causing environmental problems at home and abroad.
The Netherlands is an open economy in which international trade plays an important role. As a result, the environmental impact of the Netherlands on the rest of the world is relatively large. An open economy also makes it easy for national production to be relocated to other countries. National sustainability measures, such as biodiversity conservation, increased use of biofuels and reduced use of agricultural nutrients, may cause local production process to be shifted to elsewhere in the world, which in turn may lead to an increase in

unsustainable agricultural activities and associated environmental problems in those countries. Similarly, stringent climate policies may induce energy-intensive industries to move abroad. Hence, in addition to synergies and trade-offs between various policy targets at the national level, 'environmental burden shifting' from the Netherlands to other countries also has to be taken into account.

3.3.2 An integrated approach

The highly integrated nature of the goals and targets of the 2030 Agenda calls for an integrated approach to implementation. Such an approach would enhance the potential synergy in the realisation of various SDG targets and reduce the negative effects of trade-offs (UNEP, 2015). An integrated approach is aimed at both *horizontal* policy integration – linking various themes and sectors – as well as *vertical* policy integration – linking subnational, national, regional (e.g. EU) and international scales.

One way to achieve horizontal policy integration is the 'nexus approach' (Hoff, 2011; Weitz et al., 2014; UNEP, 2015). A nexus approach focuses specifically on the interdependencies, conflicts and trade-offs in the simultaneous realisation of different targets. This requires an in-depth analysis of interlinkages across sectors and scales, and an identification of policy strategies that enhance synergies across targets by addressing multiple natural resources or sectors at once.

Vertical policy integration entails coherence between national and local policies, as well as international policies. In this context, footprint indicators (such as the ecological footprint, carbon footprint and water footprint) are a useful monitoring tool for targets related to the human environment. Footprint indicators relate national consumption to environmental impact at home and abroad (e.g. climate change, biodiversity loss, water scarcity) by taking into account the entire production chain. Not only the size, but also the effect of the footprint is important (Van Oorschot et al., 2013). For example, import of food products or biomass from areas without food shortage or water scarcity has a smaller impact than import from areas where the opposite is the case, and hence should be weighted differently. The concept of footprints makes businesses and consumers more aware of their responsibilities in the production–consumption chain. Furthermore, the concept offers insight into the scale and magnitude of the problems to be addressed.

Achieving policy coherence hence requires a context-specific and systematic analysis of interlinkages between targets across themes, sectors and scales, addressing questions such as: Which targets are interdependent? Which targets impose conditions or constraints on the implementation of other targets (trade-offs)? Which targets reinforce each other (synergies)? This analysis should not be limited to targets related to the human environment (as selected in Chapter 2) but cover the entire set of SDG targets. Furthermore, it should address the interlinkages between SDG implementation within the Netherlands, SDG implementation in other countries via Dutch development aid and trade policies, and global SDG implementation via a revitalised global partnership for sustainable development.

An important next step is to identify existing and, where necessary, new policy processes for implementing the SDGs. Individual countries are developing different strategies towards national implementation (Box 3.1). Paragraph 78 of the 2030 Agenda states that national implementation '*[can] build on existing planning instruments, such as national development and sustainable development strategies, as appropriate*.' In the Netherlands, most environment-related SDG targets are (fully or partly) covered by existing national policy targets (see Chapter 2) and are being implemented through various policy programmes. In other words, most of the SDG targets are not 'new' to Dutch policy and therefore could be integrated, where relevant, in existing policy processes, such as the Green Growth policy, the Government Vision on Nature, and the Future Agenda for Environment and Sustainability. Successful integration requires a systematic analysis of these policy processes in relation to the SDG ambitions. This analysis should identify potential linkages between current policy targets and individual SDG targets, assess the (desired) coherence within and between policy processes and identify the roles of different actors.

Furthermore, the broad range of themes addressed by the SDGs requires that all relevant ministries are involved and coordinate their policies. A 'silo' approach or rigid distribution of goals and targets among ministries should be avoided, while synergy effects in the implementation of different targets should be promoted. Targets for agriculture, industry or cities, for example, cannot be viewed in isolation from targets for water, energy, biodiversity, climate and health. Coordination, knowledge sharing and mutual learning between ministries will be crucial for successful implementation (Weitz et al., 2015). The key question is where the responsibility lies for ensuring policy coherence.

3.4 The 'energetic society'

Increasingly, citizens, businesses, city councils and NGOs are launching their own sustainability initiatives.

3.1 Implementation of the 2030 Agenda in Germany and Sweden

Various European countries have already been working hard on strategies for integrating the 2030 Agenda into national policy agendas and determining the most appropriate implementation mechanisms (e.g. see Lepuschitz, 2015). Here we focus on Germany and Sweden, since these countries are following widely different approaches.

Like several other countries, *Germany* decided to use its current national sustainable development strategy as the most important framework for SDG implementation. The German Council for Sustainable Development (RNE) has been asked to advise the government on how to align the current strategy with the SDGs. They will assess to what extent the SDGs are already covered by existing sustainability targets and indicators and identify the gaps to be addressed. In 2014, a number of dialogue workshops were held with civil society organisations (see also Lepuschitz, 2015).

Sweden engaged civil society organisations, businesses, academia, government agencies and ministries in a broad dialogue on the proposed SDGs. The Swedish Government recently relaunched its Policy for Global Development (PGD) agenda, considering it one of the most important instruments for SDG implementation. The PGD agenda – which was officially adopted in 2003, but lost momentum a few years after its launch – lays down the principle that all government policies should contribute to fair and sustainable global development. Relevant ministries have been requested to develop action plans on how to address the SDGs based on a PGD approach (see also Weitz et al., 2015).

This phenomenon has been called 'energetic society' (Hajer, 2011) or 'participation society' (Van Houweling et al., 2014) (see Box 3.2). To govern and tap into the potential of the energetic society, governments should change their role and focus more on collaboration, demonstrating ambition, providing guidance, promoting initiatives and facilitating innovation (Van der Steen et al., 2015). By translating the SDGs to a clear and powerful national vision, governments can further inspire and motivate citizens and other actors to undertake initiatives in their own field of work, interest or expertise. This section discusses how to involve and make use of the energetic society in national SDG implementation.

3.4.1 Promoting civic participation and developing a shared vision

The SDGs provide an overarching long-term vision on sustainable development and could therefore serve as a 'spot on the horizon' for the energetic society. For this to happen the SDGs must first become more widely known to the general public and be translated into national policy targets. Governments could communicate and support the 2030 Agenda by actively involving the energetic society in developing a national vision, which links targets to implementation strategies. In 2013, several consultations took place with various groups within Dutch society to provide input for the UN High Level Panel on the Post-2015 Development Agenda (the UN Panel that formulated the SDGs) (NCDO, 2013). Such consultations may also be held to further develop the national vision, now that the SDGs have been agreed. Similar efforts are taking place in other countries such as Germany, where dialogue workshops were held with civil society organisations.

Involving the energetic society in developing a national vision will create commitment and motivate and inspire all parties (public and private) to take action. Recent research on sustainable behaviour among Dutch citizens shows that people are more likely to adopt sustainable practices if they actively participate and have some knowledge about international development cooperation (Carabain et al., 2012; Boonstoppel and Van Elfrinkhof, 2013).

Based on the 2030 Agenda, governments could develop an overarching long-term vision for sustainable development, to define the national level of ambition and outline how policy could address the SDG targets. Such a vision would provide a form of coordination, offering guidance to all parties as to where they could focus their efforts and investment decisions (Van der Steen et al., 2015). Moreover, with a clear and appealing long-term vision, governments may inspire and motivate the energetic society to actively contribute to the implementation of the 2030 Agenda. Since the 2030 Agenda is not legally binding, it can only be effective if all parties (including citizens, NGOs and businesses) are aware that they can contribute and see that their contributions are being acknowledged.

3.2 What do we mean by the 'energetic society'?

Citizens, city councils, businesses and NGOs are increasingly developing their own sustainability initiatives. These actions are not initiated by the central government but by society itself. Examples include businesses adopting sustainable production processes, citizens organising their own (renewable) energy supply and changing their consumption patterns, and city councils facilitating sustainable neighbourhood initiatives and urban development through participatory processes. This new role of society in the public domain has been described as the 'energetic society' (Hajer, 2011) or 'participation society' (Van Houweling et al., 2014).

The rise of the energetic society is partly a response to the changing role of government, both nationally and internationally, and raises the question how governments should respond in turn to this new development (Hajer, 2011; Hajer et al., 2015). An energetic society requires a government that is able to combine traditional governmental roles (lawful, performing) with new roles (networking, participatory and facilitating) (Van der Steen et al., 2015).

3.4.2 Building on and learning from ongoing initiatives

Businesses, civil society organisations, city councils and citizens are increasingly working together in multi-stakeholder partnerships, such as the *Green Deals*[2] and the public–private partnerships (PPPs) for development and sustainability in the Netherlands. The 2030 Agenda emphasises the importance of partnerships for realising the SDGs, particularly in goal 17 ('Strengthen the means of implementation and revitalise the global partnership for sustainable development'). As part of this goal, target 17.16 calls to encourage and promote multi-stakeholder partnerships, while target 17.17 calls to build on the experience of existing partnerships.

In the Netherlands, private sector parties, NGOs and universities, together with the Ministry of Foreign Affairs, have drawn up the 'Post-2015 Charter': a joint statement presenting a compelling vision on the private sector's contribution to sustainable development. The Charter calls on the signatories to intensify existing efforts and develop concrete initiatives within the framework of the 2030 Agenda. The aim of the Charter is to bring parties together, to create a platform for sharing success stories, to support partnerships and to promote common interests. So far, the primary focus of the Charter appears to be on implementation abroad, paying less attention to implementation within the Netherlands.

Partnerships may serve as a bridge between policy and society, facilitate learning and knowledge sharing between public and private actors, and provide new possibilities for financing sustainable development. Governments may facilitate existing partnerships and learn from them for further policy development. At the same time, it should be recognised that partnerships are no panacea. Research on the performance of international multi-stakeholder partnerships shows that their contribution to 'closing the implementation gap' is relatively small, and that their overall effectiveness is unclear (Bouma and Berkhout, 2015; FES, 2015; Pattberg and Widerberg, 2015). A study on the performance of national partnerships reached similar conclusions (Van Tulder et al., 2014). Hence, when considering partnerships as important 'means of implementation' of the SDGs, uncertainty about their effectiveness should be taken into account.

Monitoring and reporting of progress has been identified as a key building block of partnership success (Pattberg and Widerberg, 2015). The 2030 Agenda calls for a robust, participatory and transparent follow-up and review framework to promote accountability. Accountability not only applies to governments, but also to businesses and other organisations playing a role in SDG implementation (universality). Given the large number of initiatives in the energetic society, monitoring progress is clearly important, but also complex, as it should assess whether the cumulative effect of all these efforts is sufficient for target achievement. Various actors within society, the private sector in particular, have already started to report on their sustainability efforts. The SDGs may serve as benchmarks for actors to evaluate their actions (see Chapter 4 for further details).

In summary, the energetic society requires an active government that is able to make use of society's innovative potential by developing a shared vision, by encouraging initiatives, by accelerating change and by monitoring progress.

3.5 Conclusions

National implementation of the 2030 Agenda requires a translation of the SDGs to national ambitions, which are to be realised through existing and, where necessary, new policy processes and strategies. By translating

the SDGs to their national context, countries address their responsibility towards solving global problems. However, governments cannot do this alone. The scope and complexity of the 2030 Agenda requires broad participation of all parties in society, both for defining and implementing the national ambition level. Governments should ensure that the 2030 Agenda becomes known to the general public, take a leading role in defining national ambitions, ensure policy coherence across themes and between subnational, national and international policies, encourage sustainability initiatives, and facilitate innovation within the context of the SDGs. A clear and powerful long-term vision, developed by governments together with actors within society, would provide a form of coordination, offering guidance to all parties as to where they could focus their efforts and investment decisions. Partnerships may serve as a bridge between policy and society, facilitate learning and knowledge sharing between public and private actors, and provide new possibilities for financing sustainable development. At the same time, it should be recognised that partnerships are no panacea. When considering partnerships as important 'means of implementation' of SDGs, uncertainty about their effectiveness should be taken into account.

Defining the national level of ambition requires a translation of the global SDG targets to national policy targets, guided by the global level of ambition but taking into account national circumstances. Each problem or theme addressed by SDG targets has to be translated into a set of national policy targets that cover the most important elements of the global targets and are relevant in the national context. For SDG targets aimed at decoupling economic growth from environmental degradation, it is important to establish what level of absolute decoupling would be *sufficient* to achieve the targets in question. The final definition of the national level of ambition is a political question. Based on criteria such as national responsibility, equal rights, historical responsibility, sovereignty and the right to development, scientific *if … then* analyses could help to determine individual countries' fair share in the global SDG challenge for different aspects of the human environment. The final choices are to be made by politicians, in close consultation with different groups within society, such as NGOs, businesses, local councils and scientists.

The next step is to identify existing and, where necessary, new policy processes for implementation of national policy targets and ambitions. Many of the goals and targets in the 2030 Agenda are not new to Dutch policy and therefore could be integrated, where relevant, in existing policy processes, such as the Green Growth policy, the Government Vision on Nature, and the Future Agenda for Environment and Sustainability. This requires a systematic analysis of these policy processes in the light of the 2030 Agenda.

Policy coherence is crucial for successful implementation of national ambitions. The highly interrelated nature of the SDG goals and targets requires an integrated approach, aiming for both horizontal policy integration – linking various themes and sectors – and vertical policy integration – linking subnational, national, regional (e.g. EU) and international scales. The Netherlands is an open economy in which international trade plays an important role. In addition to synergies and trade-offs between various policy targets at the national level, 'environmental burden shifting' from the Netherlands to other countries also has to be taken into account. The latter is not explicitly included in the 2030 Agenda. Footprint indicators, which relate national consumption to environmental impact at home and abroad, may be included in a national monitoring framework (see Chapter 4) to provide insight into environmental burden shifting, and may also contribute to assessing individual countries' *fair* share in the global sustainability effort. Furthermore, the broad range of themes addressed by the 2030 Agenda requires that all relevant ministries are involved and coordinate their policies. A 'silo' approach or rigid distribution of goals and targets among ministries should be avoided, while synergy effects in the implementation of different targets should be promoted. The key question is who will be responsible for implementation of specific targets and where the responsibility lies for ensuring policy coherence.

Notes

1 Some Goals may be classified at more than one level. For example, Goal 2 includes poverty-related targets, such as reducing hunger and malnutrition, as well as production-related targets, such as promoting sustainable agriculture. The same applies to Goals 6 (Water) and 7 (Energy). Since our study concerns a developed country (the Netherlands) where production-related targets are more relevant than poverty-related targets, we opted to classify Goals 2, 6 and 7 in the second layer, following Waage et al. (2015).

2 http://www.greendeals.nl/english/

FOUR

National SDG monitoring and accountability

We also encourage Member States to conduct regular and inclusive reviews of progress at the national and subnational levels which are country-led and country-driven. Such reviews should draw on contributions from indigenous peoples, civil society, the private sector and other stakeholders, in line with national circumstances, policies and priorities. National parliaments as well as other institutions can also supply these processes

The 2030 Agenda for Sustainable Development; Paragraph 79

4.1 Introduction

Monitoring sustainable development can promote effective national SDG implementation. The 2030 Agenda calls on governments to set up review processes to track national progress and contribute to reviews at regional and global levels. Where possible, these national reviews should build on existing platforms and processes.
In the Netherlands, sustainability reporting is currently provided by the *Sustainability Monitor of the Netherlands* (CBS, 2015). This biennial monitoring report keeps track of sustainability in the Netherlands using a broad set of indicators for a range of sustainability themes, including, but not limited to, environmental quality.

In this chapter we focus on the role of *national* monitoring of SDGs for policy and society. In Section 4.2, we discuss the importance of monitoring for effective implementation of the SDGs. As this discussion shows, an important question for the design and structure of a national monitoring report is what role such report is to play: should it only describe the current state and trends or also provide policy input and contribute to accountability? In Section 4.3, we examine what role the existing *Sustainability Monitor of the Netherlands* could play in reporting on national SDG implementation.

4.2 Various functions of monitoring

Monitoring combines measuring trends with tracking progress. In the case of the SDGs, monitoring should provide insight in the progress made on sustainable development as operationalised by the agreed goals and targets. This insight contributes to making society more aware of sustainable versus unsustainable development, and hence could motivate citizens and businesses to change behaviour and take action. It may also encourage citizens to call on businesses and government authorities to step up their efforts, for example, by introducing corporate sustainability reporting. The latter increases corporate responsibility and transparency (see also Section 3.4 on the 'energetic society').

Countries and businesses are using a range of different methodologies for sustainability reporting. A major challenge is to align the indicator sets used, both between businesses and between businesses and governments (Van der Esch and Steurer, 2014). Various projects are currently addressing this challenge.
The *Measure What Matters* project of the Green Economy Coalition (which includes NGOs, research institutes and UN organisations) is aimed at aligning global, national and business indicator sets.[1] The Global Reporting Initiative (GRI) has developed sustainability reporting guidelines for businesses, governments and other organisations. Together with the World Business Council on Sustainable Development and the UN Global Compact, GRI recently published a first version of the *SDG Compass for Businesses* (GRI et al., 2015). This *Compass* shows businesses how to contribute to realising the SDGs and how to report and communicate their progress.
Finally, Statistics Netherlands, GRI and the Sustainability Consortium published an overview and comparison of public and corporate sustainability reporting systems (CBS et al., 2014). They conclude that alignment and

harmonisation of these systems is both possible and necessary, and that the 2030 Agenda provides significant momentum for this – inevitably, long-term – process.

In addition to the general purpose of ensuring transparency and providing information on relevant developments, monitoring goes hand in hand with tracking target performance, and as such can serve various policy objectives. For example, indicator data may be used for policy adjustment, policy comparison, learning and policy evaluation. As discussed in the following sections, these various objectives of monitoring will influence the design of the monitoring framework.

Independent of its specific objectives, monitoring of the SDGs requires a set of indicators relevant to the SDG targets in question. Although the global SDGs do provide starting points for indicator selection, they also leave ample room for interpretation and therefore cannot be translated directly into a set of indicators. Indicators for SDG monitoring at the global level are being developed by the Inter-Agency and Expert Group on SDG indicators (IAEG-SDGs) and are expected to be available by spring 2016. In addition to developing global indicators for the global SDG targets, the SDGs also have to be translated into national policy targets and indicators. In this translation process countries can take national circumstances into account, which implies that national indicator sets may differ from the global indicator set.

To illustrate the challenge of selecting relevant indicators, let us consider again the SDG target for sustainable food production (see Section 3.2.1). To define relevant indicators for this target, it first has to be clear what is understood by *sustainable food production* and how this broad concept should be operationalised. Is it about efficient use of natural resources, improving farmers' incomes, reducing antibiotic use in livestock to address public health concerns, or minimising environmental pollution caused by food production? If targets are set for the relevant sub-themes of sustainable food production, then it is possible to define a comprehensive indicator set for the theme as a whole. National assessment agencies (in the Netherlands: PBL Netherlands Environmental Assessment Agency, CPB Netherlands Bureau for Economic Policy Analysis and SCP Netherlands Institute for Social Research) could contribute to indicator selection based on their knowledge of system interactions.

Furthermore, national statistical bureaus are obvious partners because of their expertise in data collection and analysis. Ultimately, the national indicator set will reflect what society wants to achieve, and these priorities may differ significantly between countries. Hence, it is primarily the task of national governments to select the indicators to be monitored for national SDG reporting. Obviously, to ensure broad support for this national indicator set, various groups within society should be involved in the indicator selection process, including NGOs, employers' organisations, consumers' organisations, local councils, businesses and academics.

4.2.1 Reporting on progress

One of the basic objectives or functions of monitoring is to report the current state of affairs: what is the current level of sustainable development? The underlying key question is 'Are we heading in the right direction'? Answering the latter question not only requires a *description* but also an *interpretation* of current developments: what does it *mean* for sustainable development when one indicator value increases and another indicator value decreases or stays the same?

The current level of sustainable development can be evaluated based on insights into current trends and/or by comparing national developments to developments in surrounding countries. Obviously, the latter comparison would require alignment of indicator sets between countries, not only in terms of the indicators selected for individual SDG targets but also in terms of their exact definition. For example, should the indicator for energy saving be defined in relative terms (percentage Petajoules saved) or absolute terms (total Petajoules saved)? And what is the baseline year? Should this indicator cover *total* energy consumption or only *fossil* energy consumption? And should it include fuel used as feedstock (e.g. for production of plastics)?

Given that there are 169 SDG targets and hence a multitude of relevant indicators, the question also arises how to derive a clear and comprehensive picture of the extent to which a country is developing sustainably. Is there a way to summarise and aggregate all this information into a limited number of 'headline indicators'? For example, the *Sustainability Monitor of the Netherlands* uses colour coding and pie charts to visualise indicator information, providing a concise overview of the most important trends (see Section 4.3).

4.2.2 Accountability

For policy, the relevance of monitoring increases considerably if the observed trends are also explained. Hence, in addition to simply describing and interpreting the current situation and trends, the next step is to provide insight into the causal factors underlying the developments observed. From a policy perspective it is also relevant to provide insight into how current policies have contributed to the trends observed. The latter helps to answer the question 'Are we on the right track?' and

forms the basis for accountability with regard to current policy effectiveness and progress made. This insight cannot be derived from statistical data alone, but also requires causal analysis.

A useful approach for gaining insight into causal factors underlying indicator developments is the DPSIR framework, where DPSIR stands for Driving forces-Pressure-State-Impact-Response. In the case of environmental indicators, *driving forces* for example include general economic trends, energy consumption and investments. These factors exert *pressure* on the environment (e.g. by increasing emissions of polluting substances), which in turn leads to changes in the *state* of the environment. These changes in environmental quality have an *impact*, for example on public health and ecosystems. If this impact is undesirable, it will elicit a *response* from society and policy, which will feed back on one or more steps in the chain. For example, policy may be aimed at changing the driving forces to indirectly reduce impact; or it may change the causal relationship between driving forces and pressure (e.g. by setting emission requirements for vehicles and installations) and hence reduce impact down the line. Driving forces may also be changed by initiatives from society, for example, businesses investing in energy efficiency or households participating in renewable energy collectives. These examples illustrate that insight into the DPSIR chain is essential to understanding and explaining indicator trends. This insight cannot be derived from statistical data alone, but also requires model analyses to investigate the relationships within the DPSIR chain. One of the challenges is to include societal dynamics into these analyses (see also Section 3.4 on the energetic society).

A point of concern is that changes in environmental quality and associated effects on public health and ecosystems are often slow to become apparent. This is not only due to the fact that, often, changes in environmental quality happen very slowly (e.g. climate change is a gradual process taking place over many decades), but also because human systems are relatively inert. For example, building regulations aimed at reducing energy use do not immediately result in lower household energy consumption, because the housing stock changes only very slowly. The consequence of this slow response is that 'effect indicators' will measure hardly any progress, even though policy and society are taking considerable effort (e.g. emission regulations, energy-saving investments) to address the problem in question. To capture these efforts, 'secondary' indicators are needed. For this reason, the OECD indicator set for tracking green growth includes not only indicators for monitoring the current state of resources, but also indicators describing environmental efficiency, policy response and economic opportunities (OECD, 2011).

4.2.3 Assessing target performance

Explaining indicator trends as discussed in the previous section provides an answer to the question 'Are we on the right track'? The follow-up question is 'Are we doing enough?' The latter has two dimensions: it deals both with the question whether current policies are effective and efficient, and with the question whether national policy targets are expected to be realised. The first question can be answered based on *ex post* analyses, the outcome of which may be used to adjust policies where necessary. The second question requires *ex ante* policy evaluation, i.e. an analysis of the projected effects of current policy and economic and social trends on future developments. Lessons learned from *ex post* analyses could be included in this analysis. In the case of environmental indicators, *ex ante* analyses provide insight into expected future environmental quality and environmental pressure (e.g. future emissions). Comparing these projections with national policy targets will provide an answer to the question 'Are we doing enough'? (see also Chapter 2.4 on target performance).

The question whether a country 'is doing enough' to address the global sustainable development challenge has two dimensions. Answering this question requires both insight into the performance on national targets derived from the global SDGs, and insight into whether these national targets represent a fair share in the global sustainability effort (see Section 3.2.3).

4.3 The Sustainability Monitor of the Netherlands

The *Sustainability Monitor of the Netherlands* (MDN) assesses the state of sustainable development in the Netherlands, based on a broad indicator set (CBS, 2015). First published in 2009, with follow-up reports in 2011 and 2014, the MDN is a joint product of Statistics Netherlands (CBS) and the three national assessment agencies (PBL Netherlands Environmental Assessment Agency, CPB Netherlands Bureau for Economic Policy Analysis and SCP Netherlands Institute for Social Research). The MDN builds on the Brundtland definition of sustainable development, which states that development is sustainable if it meets the needs of the present without compromising the ability of future generations – both here and in other parts of the world – to meet their own needs. This definition is also reflected in the academic literature on monitoring sustainable development (Stiglitz Commission, 2009; UNECE, 2014).

Table 4.1

The three dashboards and corresponding themes of the Sustainability Monitor of the Netherlands 2014 (CBS, 2015). Note: some themes are measured by more than one indicator

Quality of Life ('Here and now')	Resources ('Later')	Netherlands in the world ('Elsewhere')
Well-being and material welfare	**Natural capital**	**Environment and natural resources**
Well-being	Land	Energy
Material welfare	Natural environment	Raw materials
	Climate	Climate
Personal characteristics	Energy	
Health	Soil quality	**Trade and aid**
Housing	Water quality	Aid
Education	Air quality	Trade
Leisure		
Mobility	**Human capital**	
Livelihood	Labour	
Pensions	Health	
	Education	
Living conditions		
Safety	**Social capital**	
Inequality	Social participation and trust	
Social participation and trust	Institutions	
Institutions		
Natural environment	**Economic capital**	
Air quality	Physical capital	
	Knowledge	
	Debt	

To translate the Brundtland definition into a set of indicators, the concept of sustainable development has to be operationalised first: *what exactly* should we conserve for future generations, here and elsewhere? In absence of a policy-level operationalisation of this broad sustainability concept in the Netherlands, it was decided to structure the indicator set of the MDN around three themes, or 'dashboards':

1. Quality of life in the Netherlands ('Here and now')
2. Resources ('Later'). This category relates to the opportunities for future generations to achieve their welfare goals, based on resource availability.
3. The Netherlands in the world ('Elsewhere'). This category relates to the impact of the pursuit of welfare in the Netherlands on the rest of the world.

Given this structure, the next question is which issues and related indicators should be included in each of these dashboards. Quality of life, for example, is a broad concept, the definition of which will vary between generations. Based on extensive literature reviews on quality of life, a number of issues that are generally considered relevant were selected for the first dashboard of the MDN. In addition, the criterion of data availability played an important role for indicator selection for this dashboard.

Indicators for the *Resources* dashboard were selected based primarily on the 'capitals approach'. This approach states that different kinds of capital are required to meet human needs, and that quality of life depends on the extent to which these needs are met. Both material and immaterial assets are taken into account. The MDN distinguishes four types of capital: economic capital (including the supply of physical capital goods, but also knowledge), natural capital (such as energy supplies, biodiversity and clean drinking water), human capital (labour force, education level) and social capital (social participation, trust in institutions).

Although the selection of indicators for the first two dashboards (*Quality of life* and *Resources*) is primarily based on academic research and data availability, it also takes into account relevant themes addressed by citizens, policymakers and politicians in the public debate on sustainable development (CBS et al., 2009).

The third dashboard (*The Netherlands in the world*) consists of indicators providing insight into the environmental burden imposed by the Netherlands on the rest of the world. This dashboard also includes indicators of financial aid for poverty reduction in developing countries, to provide insight into the relationship between the

Netherlands and the poorest countries of the world. After all, poverty reduction is an important aspect of sustainable development as defined by the Brundtland definition.

In total, the MDN describes 58 indicators, including 29 indicators in the *Quality of life* dashboard, 18 indicators in the *Resources* dashboard and 11 indicators in the *Netherlands in the world* dashboard. These indicators cover a range of themes (Table 4.1).

Without making an exhaustive comparison, we observe that the MDN covers many of the SDGs (including numerous SDG targets for sustainability domains other than the environmental domain), but definitely not the entire set of 169 SDG targets. Furthermore, we observe that the organising principle of the MDN indicators differs from the SDGs, as the latter consist of goals and underlying targets. The task of the Inter-Agency and Expert group (IAEG-SDGs), in addition to defining an indicator set for global SDG monitoring, is to develop a clear framework to organise these global indicators.

The MDN shows the trend in each indicator from the year 2000 onwards. It also compares national indicator scores to those of other European countries. Hence, the main objective of the MDN is to describe trends, not to interpret them (see Section 4.2). However, the MDN does include a chapter with brief analyses of the developments in 14 domains (well-being; climate and energy; local environmental quality; biodiversity and landscape; health; housing and living environment; mobility; security; social participation and trust; education and knowledge; material welfare and the economy; financial sustainability; trade, aid and raw materials; and inequality). For some of these domains it also discusses relevant policy targets and the extent to which these are being achieved. This information is derived from other reports. With regard to the environment-related policy targets, an important source of information is the *Assessment of the Dutch Human Environment 2014* (PBL, 2015).

At the request of policymakers, the 2014 edition of the MDN also includes a chapter on Green Growth. Green Growth was one of the central themes of the United Nations Conference on Sustainable Development in 2012 (Rio+20) and the Dutch cabinet addressed this theme in a letter to parliament in 2013, proposing a set of key indicators for Green Growth (EZ and IenM, 2013). The MDN describes the trends in these key indicators and compares the scores to those of other European countries. Similar to the MDN indicators, trends in each of the Green Growth indicators are briefly discussed, but this discussion does not include a comprehensive policy analysis.

4.4 Conclusions

A national SDG monitoring report for the Netherlands does not have to be developed from scratch, but could build on the structure of the present MDN. If the ambition is to use the SDGs as an integrating framework for national policymaking, an option to consider is to base the MDN primarily on SDG indicators. In that case the current structure of the MDN would have to be modified. Whether or not to keep the present MDN indicators and Green Growth indicators would then be a topic of discussion. However, making the SDG indicators 'leading' for the structure of the MDN would be in disagreement with the academic literature on measuring sustainable development in which the trichotomy 'here and now', 'later' and 'elsewhere' is a central concept.

A second question relevant for the design of a national SDG monitoring report is what role or function such report is to fulfil. Will its primary goal be 'basic monitoring', describing trends in indicators related to national SDG targets? Or will it also be used for evaluation, serving as a vehicle for providing accountability with regard to the societal and policy developments underlying the trends observed? In the latter case, simply describing indicator trends is not enough; insight into the causal factors underlying these trends should also be provided. Finally, if the ambition is to assess to what extent the national SDG targets will be achieved, *ex ante* policy evaluation would be required. For most of the environment-related SDG targets the information required for such analyses can be derived from the *Assessment of the Dutch Human Environment* (PBL, 2015).

Note

1 http://measurewhatmatters.info/

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Appendix A

Mapping analysis: Linking SDG targets to current Dutch policy targets

Table A.1 links environment-related SDG targets (as selected in Chapter 2) to relevant current policy targets agreed at national (Dutch), European (EU) or global (UN) level. The last column shows the related policy challenge with regard to each of the selected SDG targets.

Table A.1

Selected goals and targets of the 2030 Agenda, related current national (Dutch), European (EU) and global (UN) agreements, and the policy challenge with regard to translating global targets to the Dutch context

				Existing policy agreements and targets			Policy challenge for the Netherlands
#	Goal	#	Target	National	European	Global	
1	End poverty in all its forms everywhere	1.5	By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	-	-	Sendai Framework for Disaster Risk Reduction 2015–2030	SDG target partly covered by existing Dutch policy targets: Reconsider target horizon and target level for existing targets and define new targets where needed.
2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	2.4	By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	-	Nitrates Directive, Water Framework Directive, Birds Directive, Habitats Directive, NEC Directive	-	SDG target partly covered by existing Dutch policy targets: Reconsider target horizon and target level for existing targets and define new targets where needed.
		2.5	By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed	-	-	International Treaty on Plant Genetic Resources for Food and Agriculture, Strategic Plan for Biodiversity 2011–2020, Nagoya Protocol on Access and Benefit Sharing	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.

#	Goal	#	Target	Existing policy agreements and targets			Policy challenge for the Netherlands
				National	European	Global	
3	Ensure healthy lives and promote well-being for all at all stages	3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Van Afval naar Grondstof [*from waste to resource*], Bodem-convenant [Soil covenant], National Water Plan 2, National Waste Management Plan	NEC Directive, Air Quality Directive, Water Framework Directive, Nitrates Directive 7th Environment Action Programme	Gothenburg Protocol Basel, Rotterdam and Stockholm conventions	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	4.7	By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	-	-	-	SDG target not covered by existing Dutch policy targets: Define new targets where needed.
6	Ensure availability and sustainable management of water and sanitation for all	6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	National Water Plan 2	Water Framework Directive	Basel, Rotterdam and Stockholm conventions	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Nationaal Water Plan 2, Delta Programme	Water Framework Directive	-	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		6.5	By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	National Water Plan 2	-	-	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		6.6	By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Natuurpact [nature covenant]	Water Framework Directive, Birds Directive, Habitats Directive, EU Biodiversity Strategy	Ramsar convention, Strategic Plan for Biodiversity 2011–2020	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.

Table A.1 (continued)

#	Goal	#	Target	Existing policy agreements and targets			Policy challenge for the Netherlands
				National	European	Global	
7	Ensure access to affordable, reliable, sustainable and modern energy for all	7.2	By 2030, increase substantially the share of renewable energy in the global energy mix	Energie Akkoord [energy agreement]	Renewable Energy Directive	-	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		7.3	By 2030, double the global rate of improvement in energy efficiency	Energie Akkoord [energy agreement]	Energy-Efficiency Directive	-	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	8.4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	Van Afval Naar Grondstof [from waste to resource]	Roadmap to a Resource Efficient Europe	10-year framework of programmes on sustainable consumption and production	SDG target partly covered by existing Dutch policy targets: Reconsider target horizon and target level for existing targets and define new targets where needed.
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	National adaptation strategy, Delta programme	Electricity interconnection target	-	SDG target partly covered by existing Dutch policy targets: Reconsider target horizon and target level for existing targets and define new targets where needed.
		9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Van Afval Naar Grondstof [from waste to resource]	Roadmap to a Resource Efficient Europe, NEC Directive, Air Quality Directive	Gothenburg Protocol Basel, Rotterdam and Stockholm conventions	SDG target partly covered by existing Dutch policy targets: Reconsider target horizon and target level for existing targets and define new targets where needed.
11	Make cities and human settlements inclusive, safe, resilient and sustainable	11.5	By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	National adaptation strategy, National Water Plan 2, Delta Programme	Floods Directive	Sendai Framework for Disaster Risk Reduction 2015–2030	SDG target partly covered by existing Dutch policy targets: Reconsider target horizon and target level for existing targets and define new targets where needed.
		11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Van Afval Naar Grondstof [from waste to resource], Landelijk afvalbeheerplan [national waste management plan], National Water Plan 2, Energie Akkoord [energy agreement]	Roadmap to a Resource Efficient Europe, NEC Directive, Air Quality Directive, Water Framework Directive, REACH, Renewable Energy Directive, Energy Efficiency Directive	Gothenburg Protocol Basel, Rotterdam and Stockholm conventions	SDG target partly covered by existing Dutch policy targets: Reconsider target horizon and target level for existing targets and define new targets where needed.

#	Goal	#	Target	Existing policy agreements and targets			Policy challenge for the Netherlands
				National	European	Global	
12	Ensure sustainable consumption and production patterns	12.1	Implement the 10-year framework of programmes on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries	-	-	10-year framework of programmes on sustainable consumption and production	SDG target partly covered by existing Dutch policy targets: Reconsider target horizon and target level for existing targets and define new targets where needed.
		12.2	By 2030, achieve the sustainable management and efficient use of natural resource	Van Afval Naar Grondstof [from waste to resource]	Roadmap to a Resource Efficient Europe, EU Biodiversity Strategy	Strategic Plan for Biodiversity 2011–2020	SDG target partly covered by existing Dutch policy targets: Reconsider target horizon and target level for existing targets and define new targets where needed.
		12.3	By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses	Beleidsbrief duurzame voedsel-productie [policy letter on sustainable food production]	Roadmap to a Resource Efficient Europe	-	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		12.4	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	Landelijk afvalbeheer-plan [national waste-management plan]	Registration, Evaluation and Authorization of Chemicals (REACH)	Basel, Rotterdam and Stockholm conventions	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		12.5	By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	Van Afval Naar Grondstof [from waste to resource], Landelijk afvalbeheerplan [national waste management plan]	-	-	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		12.6	Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	-	Directive on disclosure of non-financial and diversity information	-	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.

Table A.1 (continued)

#	Goal	#	Target	Existing policy agreements and targets			Policy challenge for the Netherlands
				National	European	Global	
		12.7	Promote public procurement practices that are sustainable, in accordance with national policies and priorities	-	Public Procurement for a better environment	-	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		12.8	By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	-	-	-	SDG target not covered by existing Dutch policy targets: Define new targets where needed.
13	Take urgent action to combat climate change and its impacts [a]	13.1	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	National adaptation strategy, National Water Plan 2, Delta Programme Klimaatagenda [climate agenda]	Floods Directive	Sendai Framework for Disaster Risk Reduction 2015–2030	SDG target partly covered by existing Dutch policy targets: Reconsider target horizon and target level for existing targets and define new targets where needed.
		13.2	Integrate climate change measures into national policies, strategies and planning	Klimaatagenda [climate agenda], Energie Akkoord [energy agreement]	ETS Directive, EU Effort sharing decision, Renewable Energy Directive, Energy Efficiency Directive	United Nations Framework Convention on Climate Change (UNFCCC)	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		13.3	Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	-	-	-	SDG target not covered by existing Dutch policy targets: Define new targets where needed.
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	-	Marine Strategy Framework Directive, EU Biodiversity Strategy	United Nations Convention on the Law of the Sea, Strategic Plan for Biodiversity 2011–2020	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		14.2	By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans	-	Water Framework Directive, EU Biodiversity Strategy	Strategic Plan for Biodiversity 2011–2020	SDG target partly covered by existing Dutch policy targets: Reconsider target horizon and target level for existing targets and define new targets where needed.

#	Goal	#	Target	Existing policy agreements and targets			Policy challenge for the Netherlands
				National	European	Global	
		14.3	Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels	-	-	Strategic Plan for Biodiversity 2011–2020	SDG target partly covered by existing Dutch policy targets: Reconsider target horizon and target level for existing targets and define new targets where needed.
		14.4	By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics	-	EU Biodiversity Strategy, Common Fisheries Policy	Convention on the International Trade in Endangered Species of Wild Flora and Fauna (CITES), Strategic Plan for Biodiversity 2011–2020	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		14.5	By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information	-	Birds Directive, Habitats Directive, EU Biodiversity Strategy	Ramsar convention, Strategic Plan for Biodiversity 2011–2020	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		14.6	By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation [b]	-	EU Biodiversity Strategy	Strategic Plan for Biodiversity 2011–2020	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Natuurpact [nature covenant]	Water Framework Directive, Birds Directive, Habitats Directive, EU Biodiversity Strategy	Ramsar convention, Strategic Plan for Biodiversity 2011–2020	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		15.2	By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	-	EU Biodiversity Strategy	Strategic Plan for Biodiversity 2011–2020	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.

Table A.1 (continued)

#	Goal	#	Target	Existing policy agreements and targets			Policy challenge for the Netherlands
				National	European	Global	
		15.3	By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	Programmatische Aanpak Stikstof [Integrated Approach to Nitrogen]	EU Biodiversity Strategy, NEC Directive	Convention to Combat Desertification (UNCCD), Strategic Plan for Biodiversity 2011–2020	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Programmatische Aanpak Stikstof [Integrated Approach to Nitrogen]	Birds Directive, Habitats Directive, EU Biodiversity Strategy, NEC Directive	Strategic Plan for Biodiversity 2011–2020	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		15.6	Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed	-	-	Strategic Plan for Biodiversity 2011–2020, Nagoya Protocol on Access and Benefit Sharing	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		15.7	Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products	-	-	Convention on the International Trade in Endangered Species of Wild Flora and Fauna (CITES), Strategic Plan for Biodiversity 2011–2020	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		15.8	By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species	-	EU Biodiversity Strategy, EU Regulation on invasive alien species	International Plant Protection Convention, Strategic Plan for Biodiversity 2011–2020	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.
		15.9	By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	Uitvoeringsagenda Natuurlijk Kapitaal [natural capital agenda]	EU Biodiversity Strategy	Strategic Plan for Biodiversity 2011–2020	SDG target fully covered by existing Dutch policy targets: Reconsider target horizon and target level.

a Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.

b Taking into account ongoing World Trade Organization negotiations, the Doha Development Agenda and the Hong Kong ministerial mandate.

Appendix B

Gap analysis: Evaluating Dutch policy performance on current targets

Table B.1 provides an overview of the extent to which existing Dutch policy targets – relevant for the environment-related SDG targets listed in Appendix A – are expected to be achieved once all declared and officially proposed policy measures have been implemented. This analysis is based on the *Assessment of the Dutch Human Environment 2014* (PBL, 2015). The column 'Target horizon' indicates the year by which the current targets are supposed to be achieved. The four colour codes provide a quick overview of the assessment of policy progress (see key below Table B.1). The column 'Additional information' summarises relevant recent policy developments/options. More detail on recent developments in various environmental policy sub-areas is provided in Chapters 2–7 of the 2014 *Assessment* and on the *Assessment's* website (www.pbl.nl/balans2014 ; in Dutch). The column 'Related SDG targets' links the existing Dutch policy targets to specific SDG targets based on the theme or problem they address. Note that the SDG targets have yet to be translated into national policy targets. Hence, the colour codes do not say anything about the extent to which specific SDG targets are expected to be achieved in the Netherlands.

Table B.1

Dutch policy performance on existing national targets: extent to which existing environment-related policy targets are expected to be achieved once all declared and officially proposed policy measures have been implemented (PBL, 2015). The last column shows the related SDG targets

Climate and energy	Target horizon	Assessment 2012	Assessment 2014	Additional information	Related SDG targets
Kyoto target	2008–2012			The Netherlands has more than enough emission rights to meet its Kyoto commitments.	13.2
Greenhouse gas emissions, EU target, non-ETS sectors	2020			According to the NEV report (ECN and PBL, 2014), full implementation of the Energy Agreement will limit cumulative emissions over the 2013–2020 period to 808–811 Mt CO_2 equivalents; well below the target of 897 Mt.	13.2
Renewable energy, EU directive, national target	2020 2023			According to the NEV report, the share of renewable energy in 2023 is expected to rise to between 13.1% and 15.9%; likely to remain below the target of 16%.	7.2
Wind on land	2020			According to the NEV report, the installed capacity of wind turbines on land is expected to increase to between 4 and 6 GW by 2020, while the target is 6 GW.	7.2
Wind at sea	2023			According to the NEV report, the installed capacity is expected to increase to between 2.0 and 4.4 GW by 2023, while the target is 4.45 GW. The range covers the uncertainties on reductions in expected costs of this technology and the lead time of projects.	7.2
Energy saving	2020			According to the NEV report, average annual energy saving will increase to between 1.0% and 1.4% in the period up to 2020, while the target is 1.5% per year.	7.3
Air pollution					
NO_x emissions	From 2010			In 2012, nitrogen oxide emissions were 12 kt (5%) below the EU emission ceiling, as applicable from 2010 (NEC).	3.9, 11.6, 15.5
SO_2 emissions	From 2010			In 2012, 16 kt (32%) below the EU emission ceiling.	3.9, 11.6
NH_3 emissions	From 2010			In 2012, 8 kt (6%) below the EU emission ceiling.	3.9, 11.6, 15.5
NMVOC emissions	From 2010			In 2012, 35 kt (19%) below the EU emission ceiling.	3.9, 11.6
Local air quality, PM_{10}	2011			Data not yet available.	3.9, 11.6
Local air quality, NO_2	2015			50 km of national main roads not yet meet the standard; strong improvement since 2000.	3.9, 11.6
$PM_{2.5}$ exposure index	-			Data not yet available.	3.9, 11.6
Agriculture and food					
Manure production ceiling	-			Nitrogen production well below manure production ceiling of 2002. Phosphate production increased again in 2013 due to growth in dairy herd and increased phosphate levels in concentrates. Unclear whether nutrient tracking will be effective enough to limit manure production to 2002 level.	2.4
Nitrates in upper groundwater	-			Southern sandy region and loess region remain problem areas even after 2013.	2.4, 3.9, 6.3

Climate and energy	Target horizon	Assessment 2012	Assessment 2014	Additional information	Related SDG targets
Exceedance of surface water quality standards, crop protection products	-			Substances subject to an annual average EQS (EQS-AA) standard exceeded that standard in about 25% of the monitoring locations, in both 2010 and 2012. This was 50% for substances subject to a maximum allowable risk level (MTR). MTR levels will eventually be replaced by AA and MAC (maximum concentration) EQS levels.	2.4
Ammonia emissions, agriculture	2010 2020			Ammonia emission levels are decreasing; the 2010 NEC target has already been achieved. The NEC target for 2020 (-13% compared to 2005) may also have been achieved, but emission projections are uncertain.	2.4
Antibiotic use in livestock farming	2013–2015			Antibiotic use in livestock farming is decreasing; 50% reduction target between 2009 and 2013 already was achieved in 2012. The reduction target for 2015 is 70%.	2.4
More sustainable meat	2023			Consumption of 'more sustainable' meat increasing, but current rate of increase still too low to achieve 2023 target.	2.4
Sustainable animal housing	2015			10% fully sustainable housing: target achieved by more than 8%.	2.4
Food wastage	2015			National target: reduce total food wastage by 20% by 2015, compared to 2009 levels. Waste at consumer level – largest contributor – is not yet decreasing.	12.3
Water					
Surface water quality	2027			Between 5% and 40% of surface water bodies to meet all WFD targets by 2027.	3.9, 6.3
Water shortages and freshwater supply	2015			Sufficient water for most users in normal and dry years.	6.4
Swimming water quality				2015 objective – 'all locations acceptable quality' – almost achieved but no further improvement in recent years.	3.9, 6.3
Flood protection	-			Flood protection level not yet up to the desired standard. New flood protection policy being developed within Delta programme.	11.5, 13.1
Nature and biodiversity					
New NNN acquisition	-			Nature Network Netherlands (NNN, formerly EHS) targets in Nature Pact recently reviewed; increase in NNN area.	6.6, 15.1, 15.5
Environmental pressure on nature areas	-			The environmental pressure on nature has decreased considerably, since 1990, but is still above the level required for sustainable conservation.	6.6, 15.1, 15.2, 15.5
Decline in threatened species	-			Fewer species threatened; severity of threat decreasing, on average.	15.5
Conservation status	-			Many of the species and habitats included in the European Birds and Habitats Directives have an unfavourable conservation status in the Netherlands.	6.6, 15.5
Ecosystem quality	-			Decline in average quality of many types of nature since 1994. The rate of decline has levelled off in recent years.	6.6, 15.1, 15.2, 15.3, 15.5
Ecosystem service provision	-			The provision of various national ecosystem services has decreased over the last 25 years or so, while demand has increased. Policy targets have not yet been described in sufficient detail to allow evaluation.	15.9

Climate and energy	Target horizon	Assessment 2012	Assessment 2014	Additional information	Related SDG targets
Removal of ecological barriers through construction of national infrastructure	-	▭	■	Still insufficient clarity concerning solutions for problems in former main ecological links.	6.6, 15.1, 15.5
Environmental quality urban environment					
Waste generation	2015	●	●	Waste production relatively stable in recent years, below waste generation ceiling.	11.6, 12.5
Waste recycling	2015	●	●	Target achieved in 2010.	11.6, 12.5
Household waste recycling	2015	▭	■	Percentage of collected sorted waste increased slightly, from 45% in 2000 to 50% in 2012.	11.6, 12.5
Waste incineration and landfill	-	⬢	⬢	The reduction target for dumping of combustible waste will probably be achieved. However, amount of waste sent to landfill increased considerably in 2012.	11.6, 12.5

● Policy implementation will probably result in target being achieved

⬢ Expected developments will probably result in target being achieved, a more robust policy would allow for setbacks

■ Expected developments will probably not result in target being achieved, may be possible if policy is intensified

■ Expected developments will probably not result in target being achieved, fundamental review of current approach required through application of different policy instruments or different targets

▬ Not yet possible to ascertain

▭ This analysis has not yet been carried out.

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February 2016