

# Institutions for Climate Adaptation: An Inventory of Institutions in the Netherlands that are Relevant for Climate Change

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## Abbreviations

AMvB	Order in Council; Algemene Maatregel van Bestuur
ARK	National Programme for Spatial Adaptation to Climate Change; Nationaal programma Adaptatie Ruimte en Klimaat
AZ	Ministry of General Affairs; Ministerie van Algemene Zaken
BZ	Ministry of Interior and Kingdom Relations; Ministerie van Binnenlandse Zaken en Koninkrijksrelaties
CAP	Common Agricultural Policy
CBD	Convention on Biological Diversity
CcSP/KvR	Climate changes Spatial Planning; Klimaat voor Ruimte
DLG	Government Service for Land and Water Management; Dienst Landelijk Gebied
EC	European Community
EIA	Environmental Impact Assessment
ELFPO	European Agricultural Fund for Rural Development (EAFRD); Europees Landbouwfonds voor Plattelandsontwikkeling
EU	European Union
EZ	Ministry of Economic Affairs; Ministerie van Economische Zaken
FES	Structural Reinforcement Fund; Fonds Economische Structuurversterking
GATT	General Agreements of Tariffs and Trade
ILG	Investment Budget Rural Areas; Investeringsbudget Landelijk Gebied
IPCC	Intergovernmental Panel on Climate Change
IPO	Interdepartmental Provincial Organization, Interdepartementaal Provinciaal Overleg
KfC/KvK	Knowledge for Climate; Kennis voor Klimaat
KNMI	Royal Dutch Meteorological Institute; Koninklijk Nederlands Meteorologisch Instituut
LNV	Ministry of Agriculture, Nature and Food Quality; Ministerie voor Landbouw, Natuur en Voedselveiligheid
MER	Environmental Impact Assessment; Milieueffecten rapportage
MKBA	Social Costs and Benefits Analysis; Maatschappelijke Kosten en Baten Analyse

MNP/PBL	Nature and Environmental Planning Agency; Natuur en Milieu Planbureau; now the Netherlands Environmental Assessment Agency; Planbureau voor de Leefomgeving
NAS	National Adaptation Strategy; Nationale Adaptatie Strategie
NCP	Dutch Continental Shelf; Nederlands Continentaal Plat
NBW	National Agreement on Water; Nationaal Bestuursakkoord Water
NEN	National Ecological Network; Ecologische Hoofdstructuur
NMP4	Fourth National Environmental Policy Plan; Nationaal Milieubeleidsplan 4
POP	Rural Development Policy (RDP); Plattelands Ontwikkelingsprogramma
PKB	Structural Planning Decision; Planologische Kernbeslissingv
SER	Social and Economic Council of the Netherlands; Sociaal Economische Raad
SGR	Spatial plan for the Rural Area; Structuurschema Groene Ruimte
SMB	Strategic Environmental Assessment; Strategische Milieubeoordeling (also: plan-MER)
SNL	Subsidy scheme for Rural Area Management; Subsiestelsel Natuur en Landschapsbeheer
UN	United Nations
V&W	Ministry of Transport, Public Works and Water Management; Ministerie van Verkeer en Waterstaat
VNG	Association of Dutch Municipalities; Vereniging van Nederlandse Gemeenten
VROM	Ministry of Housing, Spatial Planning and the Environment; Ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer
WFD	Water Framework Directive
WILG	Rural Areas Development Act; Wet Inrichting Landelijk Gebied
WRO	Spatial Planning Act; Wet op de Ruimtelijke Ordening
WRR	Scientific Council for Government Policy; Wetenschappelijke Raad voor het Regeringsbeleid
WTO	World Trade Organization

## 1. Introduction

One of the goals of project IC12, a research project of the Climate *changes* Spatial Planning programme, is to assess if the formal institutions operating in the Netherlands are improving or hampering adaptive capacity. In order to answer the research question, the most important documents referring to those institutions need to be evaluated. This document presents an initial inventory of these adaptation institutions – i.e. policy plans, laws and directives, reports and other documents that seemed relevant to the question at hand. The analysis of these institutions is presented in Working Document 4.

Each policy field relevant to our study has its own chapter: water, nature, agriculture and spatial planning. These chapters are preceded by chapters on international institutions and on general Dutch climate institutions. There is no concluding chapter because this will be taken care of in WD3. With the exception of the international chapter, each chapter is divided in two parts, one called policy development and a second called laws and instruments. In the chapters the content of each document is summarized using the following headings:

**[paragraph no] Subtitle with (short) title of document**

*What kind of document is it: about what, by whom, for whom?*

*(rationale: it is important to know in what period and with what intention a document was made to assess it properly)*

*How is (adaptation to) climate change addressed in the document?*

*(rationale: a first step towards climate adaptation is to mention the subject of climate change, even if the authors do not know yet what to do about it.)*

*What conclusions on institutions and governance can be drawn from the document?*

*(rationale: ideas, technologies and plans are not enough: there has to be a form of institutionalization to move towards collective action)*

*What is especially relevant to our content analysis?*

*(rationale: some first conclusions are drawn on the relevance of the document for our analysis and on possible institutional problems)*

The selection of documents is not exhaustive, although we tried to include most of the relevant documents. We are open to any suggestions to include more. Sometimes it was difficult to draw the line: are advisory reports relevant? And research summaries for policy makers? And public campaigns?

## 2. International institutions

### 2.1 Introduction

The list of documents on international institutions relevant for the Netherlands is potentially very long. We chose to limit the selection to the most important ones, being the UNFCCC and its Kyoto Protocol, the EU White Paper on climate adaptation and the main international and European Directives in the four policy domains of our project: water, nature, agriculture and spatial planning.

### 2.2 Policy Development

#### 2.2.1 UNFCCC and its Kyoto Protocol

*What kind of document is it: subject, author, audience?*

The 1997 Kyoto Protocol is an international agreement which was adopted as a follow-up to the 1992 United Nations Framework Convention on Climate Change. The Kyoto Protocol sets binding targets for 37 industrialized countries and the European Union with respect to their greenhouse gas (GHG) emissions. These amount to an average of five per cent against 1990 levels over the five-year period 2008-2012. The Kyoto Protocol was adopted in Kyoto in Japan, on 11 December 1997 and entered into force on 16 February 2005. 181 nations had ratified the treaty in May, 2008.

*How is climate change (adaptation) addressed in the document?*

The Kyoto Protocol, although mainly focused on mitigation, is also designed to assist countries in adapting to the adverse impacts of climate change. Articles 10 and 12 from the Kyoto Protocol are the only article containing the word adaptation. Article 10 specifies that parties shall “[f]ormulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change”. Adaptation is linked to technological and spatial planning measures. Adaptation activities of countries should be described in ‘National Communications’ which report on achievements concerning mitigation and adaptation, to facilitate international knowledge transfer. Article 12 on the Clean Development Mechanism (CDM) states that revenues from CDM projects in vulnerable countries should partly be used to meet adaptation needs.

*What conclusions on institutions and governance can be drawn from the document?*

The document includes several institutional arrangements for mitigation of climate change. As adaptation is only briefly hinted at, there is only one clue for institutions or governance of climate adaptation, to be found in the words ‘spatial planning’ which seems to be the road that the Kyoto Protocol encourages with respect to adaptation. Furthermore, the CDM mechanism opens a possibility for an Adaptation Fund which can be used in developing countries (so not the Netherlands).

*What is the relevance of the document for our research?*

For adaptation in the Netherlands, the Kyoto Protocol is not very relevant. The Protocol sets no targets for adaptation and it only outlines a very general and limited roadmap for adaptation, probably not influencing ongoing adaptation activities in the Netherlands. The aim to enhance learning via national communications is achieved on paper, however, in reality there seems to be little feedback on adaptation strategies from country to country. (There are however policies on adaptation listed in the United Nations Framework Convention on Climate Change as well as in the annual decisions of the Conference of the Parties).

### **2.2.2 EU Green & White Paper on adaptation**

*What kind of document is it: subject, author, audience?*

On 29 June 2007 European member states adopted the Green Paper on Adaptation (Adapting to climate change in Europe - options for EU action). The Green Paper identifies the most important climate risks for the EU and generally describes how these risks could be dealt with. The White paper sets out a strategy for adaptation at EU level.

*How is climate change (adaptation) addressed in the document?*

Both documents are about adaptation. The Green Paper depicts adaptation as a means to prevent future climate costs – adaptation is thus framed as the cost-effective alternative to doing nothing. The Green Paper sets out different approaches for adaptation. Reading the document, a preference for soft measures (water saving, crop rotation) over hard measures (building dykes, relocating harbours) is noticeable. An important role is dedicated to spatial planning as the integrating framework for making risk and vulnerability assessments on the one hand, and developing cost-effective adaptation measures on the other hand. The Green Paper also mentions the opportunities that climate change creates for Europe, however, it provides no guidelines on how to seize those opportunities.

The White Paper uses the prevention of economic costs as a reason to structurally deal with adaptation at EU level.

*What conclusions on institutions and governance can be drawn from the document?*

The Green and White Paper on adaptation are **visionary** documents, i.e. they include general ideas on adaptation problems and solutions in Europe, and as such they do not set out obligations, rules, rights or procedures for adaptation. They merely describe a vision about future adaptation in Europe.

This vision includes aspects of governance. Both papers advocate a multi-level governance approach in which the national level should focus on disaster reduction and management and the development of adaptation strategies, the regional level should focus on developing cost-effective adaptation options from a spatial planning perspective, and the local level should focus on implementing adaptation measures using collaborative approaches. The EU itself should develop policy for climate change impacts that go beyond nation state borders. The key objectives for the EU-level are to mainstream adaptation in other policy areas, to enhance knowledge about adaptation and to generate sufficient financial resources for adaptation. An important aspect of the EU adaptation strategy the search for cost-effective measures.

Both papers stress the role of the private sector, the industrial sector, the service sector and individuals in adaptation. While the Green Paper emphasizes their responsibility, the White Paper also acknowledges the drawbacks of 'autonomous adaptations' and recognizes that the possibilities for autonomous adaptation are limited due to uncertainties, and a lack of information and financial means at local level. Therefore, it advocates a EU-wide strategy.

Reading the documents, a preference of soft measures (water saving, crop rotation) over hard measures (building dykes, relocating harbours) is noticeable. An important role is dedicated to spatial planning as the integral framework for making risk and vulnerability assessments on the one hand, and developing cost-effective adaptation measures on the other hand. The Green paper also mentions the opportunities that climate change creates for Europe, however, it provides no guidelines on how to seize those opportunities.

An instrument introduced in the White paper is the Clearing House Mechanism that should be set up by 2011. This entails an IT based database, which collects and organizes information on climate change impacts, vulnerabilities and best practices on adaptation, and makes this information accessible to European actors. To stimulate the knowledge-base on adaptation, the EU also aims to fund adaptation research. Emphasis within this research is placed on weighting the costs of different adaptation measures against the costs of doing nothing. The White Paper also outlines that more innovative financial instruments and mechanisms are necessary to deal with adaptation, like insurances or connections with EU-ETS revenues. Next to this, the formulation of National Adaptation Strategies should be promoted.

*What is the relevance of the document for our research?*

The vision that both the Green Paper and the White Paper advocate, includes aspects that would score well on our adaptive capacity criteria, mainly those related to governance (multi-level, actor and sector). Because adaptation is framed as a problem that needs local, time and place specific, solutions, it can be expected that the autonomous ability to adapt would be enhanced. However, without 'real' directives, the ideas remain part of a vision and are not transformed into policies urging people to take action. The documents do not say anything about good governance criteria (equity, accountability), nor do they generate sufficient resources (authority, financial) for adaptation. However, it should be noted that adaptation policy development in the EU is still in an early phase.

### **2.2.3 Water Framework Directive**

*What kind of document is it: subject, author, audience?*

The EU Water Framework Directive (WFD) was adopted in October 2000 and entered into force in December 2000. The WFD aims to improve the quality of ground and surface waters in the European Union.

The WFD builds on a river basin management approach, i.e. policies should follow rivers basin areas which are natural, geographical and hydrological units consisting of rivers, their distributaries, ground water flows, etc. The EU has identified several basins in the WFD, almost all of which transcend nation-state borders, and urges parties in those basins to collaboratively develop policies to enhance water quality. With this approach, the EU tries to prevent national actions that improve the water quality within their bor-

ders but shift problems to other nations in the same river basin. The WFD only sets out five general goals on water quality, and leaves the specific interpretations to the local managers who should submit targets in a river basin management plan.

The Netherlands is part of four river basins: the Rhine, Scheldt, Maas en the Eems. Water boards are the main management actors involved in river basin management. In 2009, the river basin management plans including their targets and measures with which to reach those targets should be finalized at river basin level. In 2015 the targets should be met.

*How is climate change (adaptation) addressed in the document?*

One of the five goals of the WFD which states that river basin management should contribute to mitigating the impacts of floods and extreme dry periods is indirectly linked to climate change and adaptation. Some think climate change should be better incorporated in the goals of the WFD (e.g. Pires 2008).

*What conclusions on institutions and governance can be drawn from the document?*

The WFD stimulates with its river basin management approach a governance structure that prioritizes the local and regional levels. At those levels, targets are set, measures are selected and adopted, and evaluation of targets and measures also takes place at the regional level. By recommending a collaborative approach between different interdependent actors, it assures a good monitoring process in which different parties guard the process.

The WFD does not prescribe specific measures, but instead argues that measures should be adjusted to regional and local circumstances. The development of targets and measures occurs through an iterative process in which the social costs and benefits, and the technological and financial feasibility are assessed: exploring and evaluating follow each other in several policy rounds (Ministerie Verkeer en Waterstaat, 2005). The aim is to involve many different parties in these processes.

Measures in the WFD are broad: they may vary in method and scale, from the installation of a European Act to the construction of a local dam. While all kinds of measures are allowed, in the end the outcomes are most important: when all planned measures are taken but the targets are not met, the EU can start a non compliance procedure (Leenders et al. 2006).

*What is the relevance of the document for our research?*

The WFD does not explicitly take climate change into account. However, because the water sector is generally well aware of climate change, it is expected that the document will remain relevant in the future and under climate change.

As an institution, the Directive allows for flexibility and variability: it only states general goals but leaves interpretation and execution to the regional, national and local level. Furthermore, it stimulates collaboration and participation, which could enhance trust and learning. Also, by focusing on river basins, it tries to prevent accountability problems.

However, this approach might imply that no institutional memory is created to learn from past experiences, and learning only takes place at the regional level. Also, blue-

prints for adapting the water sector to climate change impacts are difficult to make in this context.

#### **2.2.4 EU Floods Directive**

*What kind of document is it: subject, author, audience?*

The EU Floods Directive (Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks) aims to “reduce and manage” the negative effects of floods within the EU. It entered into force in 2007.

The Directive prescribes that member states should assess by 2011, and map by 2013, the flood risks within their territory and, where necessary, develop flood risk management plans by 2015. Those plans should include prevention, protection and preparedness measures, based on a cost-benefit analysis.

Like the EU Water Framework Directive, the Floods Directive employs a river basin approach, meaning that the management plans are generally developed jointly by more than one member state. The reason for adopting such an approach is to prevent actions that increase the flood risk in other countries.

*How is climate change (adaptation) addressed in the document?*

One of the motives behind the Floods Directive is the notion that climate change exacerbates floods. “Floods are natural phenomena which cannot be prevented. However, some human activities (such as increasing human settlements and economic assets in floodplains and the reduction of the natural water retention by land use) and climate change contribute to an increase in the likelihood and adverse impacts of flood events.”<sup>1</sup> Furthermore, the flood risk management plans should be evaluated and adjusted every six years, “taking into account the likely impacts of climate change on the occurrence of floods”.<sup>2</sup>

*What conclusions on institutions and governance can be drawn from the document?*

The Directive stimulates collaboration between member states sharing a river basin. The member states are at national level responsible for the development of flood risk management plans and for implementing the measures that are proposed in the plans. The Directive submits that when the European Community (EC) believes member states are not living up to their responsibilities, they can themselves take minimal necessary measures in those countries.

*What is especially relevant to our content analysis?*

The approach adopted in the Floods Directive is in many ways similar to the approach adopted in the WFD. Hence, up to a point, the same qualifications can be made: the Directive allows for flexibility and collaborative governance. However, in comparison to the WFD, it does place more responsibility at the level of the nation state, which in many

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<sup>1</sup> The text of the EU Floods Directive can be found at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:288:0027:0034:EN:PDF>

<sup>2</sup> *Idem*.

countries already has the main responsibility for risk management. The Flood Directive does not change this.

In the Netherlands, the Floods Directive influences the Spatial Planning Decision Room for the River, which indicates what measures should be taken at specific places to reduce the flood risk in the Netherlands.

### 2.2.5 WTO / GATT and Agricultural Agreements

*What kind of document is it: subject, author, audience?*

The international market is regulated by (formal and informal) structural rules and procedures, among which the WTO/GATT agreements. WTO stands for World Trade Organization, and organizes international negotiations on trade. GATT stands for General Agreements of Tariffs and Trade ([www.wto.org](http://www.wto.org)). The agreements made in the Uruguay Round Protocol GATT 1994 are the most important agreements concerning the international market. The agreements aim to ease and equalize the access to international markets by gradually breaking down import tariffs, domestic subsidies, export subsidies and other disturbance mechanisms. In the GATT negotiations, participants have decided to discard or lower market barriers.

In 2001, the WTO launched a new round of negotiations (the ‘Doha Round talks’). The latest concept versions of these negotiations dates back to July 2008. Topics of the negotiations are anti-dumping measures and fishing.

*How is climate change (adaptation) addressed in the document?*

The 1994 GATT Protocol has five appendices, two of which concern the agricultural sector:

- Appendix I Section A: Agricultural Products — Tariff concessions on a Most-Favoured Nation basis; Section B: Agricultural Products — Tariff Quotas;
- Appendix V: Agriculture Products: Commitments Limiting Subsidization

The agricultural sector is seen as an important international market sector. The negotiations aim to increasingly subject agricultural trade to the rules of international trade, which should make agricultural trade more predictable and stable for import as well as export countries and should contribute to the development of the countryside. However, climate change is not explicitly addressed in the GATT Agreements.

*What conclusions on institutions and governance can be drawn from the document?*

There is a separate GATT ‘Agreement on Agriculture’, which specifies the measures parties should take to ease the access to international markets and introduces a duty for developed countries to lower their import tariffs by 36%, for developing countries to lower their import tariffs by 24% and no duty in this respect for the least developed countries.

This agreement specifies that domestic support measures for agricultural practices that hardly affect international agricultural trade may continue to exist. This, for example, includes direct subsidies for environmental programmes.

*What is of specific relevance to our content analysis?*

The GATT agreements focus on international trade, and the outcomes of the negotiations mainly affect the agricultural sector.

### **2.2.6 Common Agricultural Policy**

*What kind of document is it: subject, author, audience?*

The EU Common Agricultural Policy<sup>3</sup> or CAP regulates European trade in agricultural products. The policy entered into force in 1962 and aimed to guarantee a reasonable income to European farmers, a qualitatively high and stable food supply to Europe, and the protection of cultural heritage.

The CAP arranges subsidies for certain agricultural products, as well as a minimum price for milk, butter, beef, grain and sugar, and import taxes and quotas for specific products that were produced outside of the European area. A minimum price means that the EU buys agricultural products when prices fall below a fixed minimum price, to sell them once prices go up again.

The CAP proved to be successful in first instance as Europe's dependence on food imports to feed its population almost diminished. However, over the years, the policy stimulated overproduction. It created large excesses in butter, milk and meat, stockpiled in EU-financed large-scale refrigerated storages. Already in 1967 European leaders saw the CAP as too expensive, however, changing this large market was difficult. In 2006, an amount of 49.8 billion Euros (46.7% of the total EU budget) was drawn into the CAP. Moreover, the import taxes are increasingly criticized for its unfairness to farmers outside the EU. In 1990, discussions on transforming the CAP started, resulting in the Luxembourg Agreement in 2003.

*How is climate change (adaptation) addressed in the document?*

Neither the CAP, nor the Luxembourg Agreement specifically take into account climate change. However, in the Luxembourg Agreement, the emphasis is on sustainable production, whereby diversification is an important strategy to decrease the vulnerability of the European agricultural production to shocks like a spread of diseases, floods, etc. In this sense, adaptation to the impacts of climate change could be seen as a rationale behind the transformation and the new policies.

*What conclusions on institutions and governance can be drawn from the document?*

Central to the Luxembourg Agreement is that farmers no longer receive financial support based on their production, but instead support is aimed at maintaining income levels. This way, overproduction is not automatically stimulated anymore and sustainable land use can be promoted through separate funding schemes.

The new agricultural policies should be implemented in the period from 2004 – 2012. In 2013, European expenses for agriculture should be decreased to 32% of the total budget.

In the Netherlands, income support to farmers was largely disconnected from production in 2006, through the 'company premium' (see Agricultural chapter).

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<sup>3</sup> for more information on EU Common Agricultural Policy see

[http://europa.eu/legislation\\_summaries/agriculture/general\\_framework/160002\\_en.htm](http://europa.eu/legislation_summaries/agriculture/general_framework/160002_en.htm)

### 2.2.7 European rural development policy

*What kind of document is it: subject, author, audience?*

The Council Regulation No 1698/2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) and the EU strategic guidelines for rural development from 2007-2013 together describe the framework for European rural development.

The European regulation on support for rural development contains four central aims:

- Improving the competitiveness of the agricultural and forestry sector;
- Improving the environment and the countryside;
- Improving the quality of life in rural areas and encouraging diversification of the rural economy; and
- Building local capacity for employment and diversification through a LEADER-approach. This is a bottom-up approach in which local groups have an important role.

*How is climate change (adaptation) addressed in the document?*

An important priority in the second aim (improvement of environment and countryside) is climate change. It specifies that “[a]griculture and forestry are at the forefront of the development of renewable energy” and that they “can also help in adapting to the impacts of climate change”<sup>4</sup>.

*What conclusions on institutions and governance can be drawn from the document?*

The EU has developed strategic priorities and guidelines on how to work towards those priorities. For the development of the countryside, the EU has developed six guidelines: one for every central aim and two cross-cutting ones.

The EU requires from every member state that they develop their own national rural development policy (RDP) for the countryside. This should be implemented as a frame of reference for national and regional rural development programmes. In the Netherlands, the national strategy is referred to as Rural Development Programme – 2 (POP2).

*What is especially relevant to our content analysis?*

While the regulations specify that agriculture and forestry could be important in helping to cope with the impacts of climate change, no clear guidelines are developed on how both sectors could utilize this capacity. Institutionally, the regulations are not very powerful: they carefully promote support and sustainability, but they leave a lot of room for autonomous decision making. Perhaps, this is well-suited for the countryside which already has a high level of autonomy on a European scale.

The regulations use as a premise that there is and that there will continue to be overproduction. However, it fails to take into account the effects of climate change on agricultural production, and specifically the predictions of periods of drought in southern

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<sup>4</sup> The text of the regulation can be found at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:055:0020:0029:EN:PDF>, pp. 26.

Europe which may change the role of northern Europe into a key region for food security and production. In these kinds of processes, the EU might want to take a leadership role.

### **2.2.8 Natura 2000 and the Birds and Habitats Directive**

*What kind of document is it: subject, author, audience?*

Natura 2000<sup>5</sup> aims to realize a network of protected natural areas throughout Europe. Through Natura 2000, key natural areas are identified where nation states should maintain, protect and restore the flora and fauna in that area. The identified Natura 2000 areas make up about 10-15% of the surface of the EU.

Natura 2000 encapsulates the Birds Directive and Habitats Directive. The Birds Directive from 1979 regulates the protection of certain threatened or rare bird species as identified by the EU. Member states are obliged to protect the species and their habitats. The Habitats Directive arranges the protection of natural areas including their plant and animal species but excluding birds. Natura 2000 links both Directives in the sense that all protected areas are seen as part of a EU-wide network to prevent a fragmented and strict view on protection, but instead emphasizes a generic approach whereby human activities should coincide with natural and biodiversity protection.

*How is climate change (adaptation) addressed in the document?*

Climate change is not mentioned in the texts of Natura 2000. However, in the Netherlands, the policy is interpreted in the light of climate change. The ministry of LNV has developed a strategic document<sup>6</sup>, in which climate change is positioned as an uncertain factor influencing the protection activities of the Netherlands to comply with Natura 2000 goals. Climate change is a reason for LNV to revise the strategic document in 2015 (LNV 2005).

*What conclusions on institutions and governance can be drawn from the document?*

Member states are required to submit a list containing the animal and plant species and their habitats that they think should be protection within their territory. However, as an exception, if the EU believes that certain species or habitats are missing, it can add them to the list of protected species or areas. Member states see to the protection of all enlisted species and habitats.

The Habitats Directive submits that member states should report on their protection measures and their effects every six years. Natura 2000 requires member states to develop management plans, stipulating what measures they are going to take when and when the Natura 2000 targets will be met. Management plans should be revised every six years.

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<sup>5</sup> for more information on Natura 2000 see:

[http://ec.europa.eu/environment/nature/natura2000/index\\_en.htm](http://ec.europa.eu/environment/nature/natura2000/index_en.htm)

<sup>6</sup> This document is available at:

[http://www.minlnv.nl/portal/page?\\_pageid=116.1640321&\\_dad=portal&\\_schema=PORTAL&p\\_file\\_id=16714](http://www.minlnv.nl/portal/page?_pageid=116.1640321&_dad=portal&_schema=PORTAL&p_file_id=16714).

The most important subsidies for realizing Natura 2000 areas are POP, structural funds, LIFE+ and the fisheries fund, although they are not specifically designed for Natura 2000.

*What is especially relevant to our content analysis?*

Natura 2000, and the Birds and Habitats Directives, do not take climate change into account. In the national interpretations, climate change is a potential problem only in the future. As an institution, Natura 2000 is very static: species should be protected at the location and in the habitat in which they live now. This is difficult to realize even under 'normal' natural variability, let alone under circumstances in which climate change exacerbates natural variability. The static character might become problematic in changing future circumstances.

In the Netherlands, about two-third of the intended Natura 2000 areas is definitive. A large part of the Natura 2000 areas concerns Dutch open sea and inland waters. The National Ecological Network (see also Nature chapter) is an important instrument to reach Natura 2000 aims.

## **2.2.9 Convention on Biological Diversity**

*What kind of document is it: subject, author, audience?*

The objectives of the Convention on Biological Diversity are: "the conservation of biological diversity, a sustainable use of its components and a fair and equitable sharing of the benefits arising out of the utilization of genetic resources".<sup>7</sup>

The EU has ratified the Convention, and implements it by, for example, articulating the aim to stop the loss of biodiversity within the EU in 2010.

Two, sometimes contradictory, principles underlie the Convention. First, states have the sovereign right to exploit their natural resources following their own environmental policies. And second, states also have the "responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction".

*How is climate change (adaptation) addressed in the document?*

The Convention does not mention climate change. In September 2008 a decision was made to install a 'technical expert group on biodiversity and climate change' under the CBD (AHTEG). This group of experts will study the impacts of climate change on biodiversity, but also look for opportunities to contribute to mitigation of climate change.

*What conclusions on institutions and governance can be drawn from the document?*

The Convention has initiated an instrument for information transfer: the Clearing House Mechanism (CHM). This instrument aims to bring together actors and networks from all over the world to inform each other on their activities, successes and failures in biodiversity management.<sup>8</sup>

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<sup>7</sup> See Convention text at: <http://www.cbd.int/doc/legal/cbd-un-en.pdf>.

<sup>8</sup> See <http://www.cbd.int/chm/> for more information on the clearing house mechanism.

*What is especially relevant to our content analysis?*

The Convention does not set out specific institutional rules of governance practices, it merely promises a moral duty to sustain biological diversity. Institutionally, this instrument does not seem to be very strong.

## **2.3 Laws and instruments**

### **2.3.1 Emission Registration**

*What kind of document is it: about what, by whom, for whom?*

E-PRTR stands for ‘European Pollutant Release Transfer Register’. This European Regulation obliges companies from January 2007 onwards to register water, air and soil emissions to their national governments. The E-PRTR Regulation is especially important to agricultural farms and in this domain is applicable to intensive cattle farms with a minimum of:

- 40.000 poultry
- 2.000 pigs (>30 kg)
- 750 sows

*How is (adaptation to) climate change addressed in the document?*

Adaptation is not specifically addressed; however, many of these emissions influence the quality of water and soil that is also affected by climate change.

*What conclusions on institutions and governance can be drawn from the document?*

Companies should register their ammonia, particulate matter, methane and nitrous oxide emissions. In the Netherlands this registration takes place at the VROM website. Not reporting could lead to a penalty.

*What is especially relevant to our content analysis?*

Adaptation is not specifically addressed; however, the information reported could be used to learn more about emissions of specific (types of) companies and how these emissions might be reduced. This might be especially important under climatic changes as these changes will put pressure on the quality of ground and surface water and soil.

## 3. Dutch climate institutions

### 3.1 Introduction

This chapter aims to describe the formal policy documents of the Dutch national government (formal institutions) concerning general adaptation strategies and policies. Dutch adaptation policies in the water, nature, agriculture and spatial planning sectors are discussed in the following chapters. Specific adaptation policy in other sectors, like the National Heat Stress Plan for the health sector, is not included in this analysis.

### 3.2 Policy Development

#### 3.2.1 Climate Change Report of the House of Representatives 2004

*What kind of document is it: about what, by whom, for whom?*

The Climate Change Report was published at the request of the Dutch Parliament in 2004 (Rooijers *et al*, 2004). It wanted to have a state of the art report on climate change to follow-up on the 1996 Report by the Middelkoop Commission. The report aspires to help the Dutch government to prepare for the post Kyoto Protocol negotiations.

*How is (adaptation to) climate change addressed in the document?*

The state of the art assessment forms an important part of the report. It stresses that there is increasing evidence that the climate is already changing, and that this will continue into the future. The report suggests increasing the mitigation efforts beyond the Kyoto reduction of 6%, and stresses that adaptation measures are unavoidable and can even create opportunities for the Netherlands.

*What conclusions on institutions and governance can be drawn from the document?*

The document has evaluated national ‘climate policy’, which only refers to mitigation institutions such as a 2 degree maximum average temperature rise goal of the EU, the Dutch implementation of the Kyoto Protocol, energy policy, emissions trade and so on. On adaptation it recommends taking measures against flooding and droughts; and creating an adaptation fund for developing countries.

*What is especially relevant to our content analysis?*

The report tries to draw some attention from mitigation towards adaptation questions, such as how to deal with uncertainties about the future. The relation between adaptation and institutions was not yet relevant in that phase of policy development.

#### 3.2.2 Motion ‘Lemstra’

*What kind of document is it: about what, by whom, for whom?*

On 21 March 2005, during policy negotiations on the spatial economic development of the Netherlands, Lemstra and seven other members of the Dutch Senate<sup>9</sup> submitted a motion arguing that four important spatial policies – Spatial Policy (Nota Ruimte), Peaks in the Delta (Pieken in de Delta), Mobility and the Agenda on Vital Countryside (Mobiliteit en de Agenda Vitaal Platteland) – do not adequately take long-term issues like climate change into account. The motion was adopted unanimously.

*How is (adaptation to) climate change addressed in the document?*

Climate change is seen as one of the long-term developments that needs to be taken into account in spatial planning since spatial planning lays the groundwork for long-term investments in the national infrastructure.

*What conclusions on institutions and governance can be drawn from the document?*

The motion suggests that the government should use the means provided in the Economic Structural Reinforcement Fund (Fonds Economische Structuurversterking: FES) which was traditionally used for infrastructure for strengthening the knowledge infrastructure. It also proposed to develop an evaluation tool for large-scale national investments.

*What is especially relevant to our content analysis?*

The motion has had considerable impact on Dutch national policy. Amongst others, the fact that it was adopted unanimously meant that the national government has to take this seriously. The FES budget is now available for knowledge development. The evaluation tool is developed and is termed Evaluation Framework ('Afwegingskader'), or 'Social Costs and Benefits Analysis' (Maatschappelijke Kosten en Baten Analyse: MKBA, see also spatial planning chapter). It was applied to the National Programme for Spatial Adaptation to Climate Change (Nationaal programma Adaptatie Ruimte en Klimaat: ARK, see below) but can also be applied to evaluate medium to small-scale spatial plans.

### **3.2.3 Dutch National Environmental Policy Plan & Agenda for the Future**

*What kind of document is it: about what, by whom, for whom?*

The National Environmental Policy plans set out the visions of the Dutch governments on environmental management. The latest policy plan dates back to June 2004, which is the fourth National Environmental Policy Plan (Nationaal Milieubeleidsplan 4: NMP4). In 2006, the Balkenende II government added to this an 'Agenda for the Future', which explains how the targets set in the NMP4 will be reached.

*How is (adaptation to) climate change taken into account?*

In NMP4, climate change is not distinguished as a separate policy theme; however, in the event of limited mitigation action, climate change is likely to be a major challenge by 2030. While the theme 'emissions, energy and mobility' is closely linked with the mitigation; adaptation is not dealt with.

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<sup>9</sup> Mw. M.E. Bierman-Beukema toe Water (VVD), J.J.M. van der Lans (GroenLinks), mw. M.C. Meindertsma (PvdA), E. van Middelkoop (ChristenUnie), A.G. Schouw (D66), mw. T.M. Slagter-Roukema (SP), J. Walsma (CDA)

In the Agenda for the Future, climate change plays a more explicit role, although no new policy goals were formulated. Climate change is seen as a factor necessitating the realization of the goals set in NMP4, changing the roles and responsibilities between government, civilian and private actors. The Agenda for the Future refers to the ARK programme for a review of adaptation policy in the Netherlands.

*What conclusions on institutions and governance can be drawn from the document?*

The Agenda for the Future describes changing roles of different actors. Private and civilian actors will be increasingly involved in adaptation policy through market mechanisms and they need to bear greater responsibility in dealing with environmental problems. The environmental costs of products consumers buy will be internalized in the product price. The polluter pays principle is seen as a leading principle for the Dutch government. The private sector is expected to be increasingly involved in environmental management by obliging them to decrease their pressure on the environment. Decentralized government actors will receive more room to manoeuvre.

The national government foresees for itself the role of a leader, steering and (re)directing different actors towards more sustainable patterns. This will enlarge the room for civil and private actors to contribute to the management of environmental problems.

*What is especially relevant to our content analysis?*

While climate change adaptation is high on international and national political agendas, the Dutch government has not yet formulated clear measures on how to deal with the impacts of climate change. The Netherlands is still developing general strategies, searching for means of financing, i.e. looking for direction on the climate change adaptation problem. The strategy laid down in the Agenda for the Future is one of decentralizing responsibilities, which generates room for variation and autonomous change, however, lacks visionary leadership from a national level.

### **3.2.4 WRR report Climate Strategy: Between ambition and reality**

*What kind of document is it: about what, by whom, for whom?*

The Scientific Council for Government Policy (Wetenschappelijke Raad voor het Regeringsbeleid: WRR) advises the Dutch government on issues of public interest. In 2006, the Council published its advice on climate change.

*How is (adaptation to) climate change addressed in the document?*

The report formulates three sub-problems to the problem of climate change, the first being adaptation. The uncertainty about the impacts of climate change, the potential damage the impacts may cause and the fact that the Netherlands should protect itself against flooding no matter what, makes adaptation a 'no-regret' option according to the Council. Adaptation is framed as a regional problem, as climate change will have different positive and negative impacts in different local areas.

The Council furthermore argues that from a policy perspective, only the water sector is relevant. Only in the water sector policy can make a real difference: climate change will have major impacts on the Dutch water sector and preventive policies have clear added value. Therefore the report only focuses on water issues.

Adaptation should be robust in the sense that the risk and its consequences should be evaluated against each other. It argues that the Netherlands is a relatively rich country, with valuable assets that could be damaged by the impacts of climate change, and therefore the Netherlands can and might want to reduce the climate risks to a very minimal level. In this light, the Council questions the path that is chosen by the government – i.e. adaptation through spatial planning – as this strategy might not be able to drastically reduce the risk. Keeping the options open in these times of uncertainty is according to the council the most important adaptation strategy.

*What conclusions on institutions and governance can be drawn from the document?*

Protection against floods is for a large part the responsibility of the national government. Water policy is closely interlinked with spatial policy. At national level, insufficient links are made between the two policy arenas, and at regional level, national interest are not always sufficiently taken into account. According to the Council, the new Spatial Planning Act (Wet op de Ruimtelijke Ordening: WRO, see also spatial planning chapter) offers opportunities to improve the link between water and spatial policy as it provides the national government with more influence in large-scale spatial planning. Also, solutions like the water test (watertoets, see also water chapter) could be helpful to prioritize national interests at all government levels. In this, the Council states while adaptation is a regional problem, national priorities should be defined.

Furthermore, the report criticizes other important Dutch water institutions on their ability to cope with the impacts of climate change. The flood norms for primary dikes are based on statistical calculations, cost-benefit analyses and hydrology, and seem to be deep-rooted in Dutch water policy. Flood norms for secondary dikes are not anchored in law. New scientific information on climate change impacts is not used to alter the norms. This should change, according to the Council, and public support is an essential factor in this change.

Mobilizing stakeholders for adaptation is easier than mobilizing stakeholders for mitigation, because stakeholders directly feel the benefits of adaptation. Mobilizing stakeholders is necessary to generate acceptance and financial means to pay for adaptation measures. Stakeholder support can be generated through explaining the importance of prevention and making sure historical disasters maintain in the memory of citizens.

Internationally, the WFD is an influential policy creating river basin management areas, however, water quantity does not yet receive the attention it should. Measures like an early warning system and well-balanced measures between upstream and downstream areas should be discussed.

*What is especially relevant to our content analysis?*

The Council gives great value to the legitimacy of adaptation policy (public support). It places a lot of responsibility at the national level: identifying national interests, developing norms, steering adaptation at all levels in society and at the same time keeping all the options open.

The report signals some very important weak spots in Dutch water institutions: insufficient norms and a lack of coordinating mechanisms between spatial planning and water.

Its supposition that the water sector is the only relevant sector for adaptation policy, seems premature. The water sector was one of the first sectors incorporating the climate change problem, however, the impacts of and response strategies to climate change in other sectors are increasingly studied.

### **3.2.5 MNP Conference report: Dealing with Uncertainty in environmental policy**

*What kind of document is it: about what, by whom, for whom?*

This document concerns a report of a conference held by the Nature and Environmental Planning Agency (MNP, now the Netherlands Environmental Assessment Agency: PBL) on 'Dealing with uncertainty in environmental policy'. The conference concluded that politicians and policymakers should deal with risks in a sensible manner: not only those risks that are prone to hypes, but also the more latent risks.

This means that scientific and methodological groundwork on risks is necessary; communicating and discussing the risks is important; policy makers should be alert, reflexive and able to learn from past mistakes; times of peace should be used for these kinds of activities

*How is (adaptation to) climate change taken into account?*

Climate change is considered as an uncertain problem; however, as the potential damages are high, preventive actions are justified.

*What conclusions on institutions and governance can be drawn from the document?*

Institutions for dealing with uncertainties mentioned in the report are:

- Dare to make mistakes, combined with strict evaluations and the will to learn;
- Aim for generally fair policies, and less for specific policies for specific sub-problems;
- Discuss the leadership that is needed to deal with uncertainty;
- Planned adaptation: agree on what is the maximum reach of policy; and
- Incorporate alternative viewpoints and deal with the arguments in a systematic way

The IPCC is described as a super-expert organization, that aims to limit uncertainties through consensus. Politicians should decide on which path to follow; if this does not happen, expert organizations will be tempted to cover up existing uncertainties. The report also contains a warning against high expectations from research: there is no way to eliminate risks and therefore choices should be made.

*What is especially relevant to our content analysis?*

The institutionalizing of these kinds of thought principally takes place within planning agencies, noticeable in the way in which they present their results: they are explicitly mentioning uncertainties.

### 3.2.6 National Programme for Spatial Adaptation to Climate Change 2006-2014 (ARK)

*What kind of document is it: about what, by whom, for whom?*

The National Programme for Spatial Adaptation to Climate Change (Nationaal Programma Adaptatie Ruimte en Klimaat: ARK), initiated in 2006 by the Balkenende II government, is a collaborative programme between the ministries of VROM, V&W, LNV, EZ, AZ, the Association of Dutch Municipalities (VNG), the Interdepartmental Provincial Organization (IPO), The Union of Water boards, and some knowledge institutes.

The programme aims to climate proof the Netherlands through an “unambiguous picture” of the impacts of climate change for the Netherlands. This picture should then be specified for different sectors: mobility, nature, agriculture, water, energy, health, industry and tourism and leisure.

Other aims formulated are to develop a vision on the most urgent climate issues, stimulating and fine-tuning different isolated initiatives, developing a framework for evaluating adaptation measures and implementing adaptation measures in practice.

The programme initiated the development of a National Adaptation Strategy and foresees that from 2007 to 2014 a National Adaptation Agenda will be developed. The strategy depicts the vision of all parties on climate change adaptation in the Netherlands, contains priorities for adaptation and offers general guidelines on how to deal with priority issues. The Agenda will contain actual implementation strategies and measures. Different perspectives of action will be offered to different actors and commitment at management level will be sought, before actually implementing the measures.

*How is (adaptation to) climate change addressed in the document?*

The document deals with adaptation; remarkably, spatial planning is not considered to be one of the sectors impacted by climate change, but is brought to the fore as a sector that will have a crucial role in helping other sectors to adapt to climate change as climate change poses spatial challenges to the Netherlands.

*What conclusions on institutions and governance can be drawn from the document?*

An important institution promoted is spatial planning as an encapsulating structuring principle for the rest of the Netherlands. All adaptation will occur through (the perspective of) spatial planning.

Furthermore, the programme stresses that the social acceptability of climate impacts should lead in spatial planning activities that try to climate proof the Netherlands. \

*What is especially relevant to our content analysis?*

The Netherlands is working hard to identify its climate change problem and the ARK programme represents a broad range of different stakeholders over multiple levels. Spatial planning policy and law is considered to be to the best fit instrument to control the climate problem, followed by water safety policies. This is not unexpected, as both the ministry of VROM and the ministry of V&W are leading this programme. While on paper, a diverse group of actors, viewpoints and interests seems to be involved; the extent to which the results of this programme will be relevant for all those actors remains an

open question. Also, the sectoral approach adopted in the programme might overlook problems facing sectors that are not identified as vulnerable, and also does not stimulate intersectoral approaches to adaptation.

### **3.2.7 Towards a Climate-proof Netherlands (Routeplanner).**

*What kind of document is it: about what, by whom, for whom?*

The scientific groundwork underlying the National Programme for Spatial Adaptation to Climate Change (ARK) is undertaken in the so-called “Routeplanner 2010-2050”. During the first years of the programme, three scientific programmes (Climate changes Spatial Planning, Living with Water and Renewable use of space) researched different aspects of the adaptation challenge to the Netherlands. In February 2007 a report was published describing the combined research results of the programmes up to that point, with the title “Towards a Climate-proof Netherlands”.

*How is (adaptation to) climate change addressed in the document?*

The report states that climate change will have major impacts in the Netherlands and that doing nothing will result in social disruption.

Climate proofing (or adaptation), according to the authors of the report, should be understood in terms of resilience and flexibility. Another basic assumption is that risks should be expressed not solely as a function of the change that they will occur, but a risk approach should be used expressing risks in terms of change times consequences.

Uncertainty is incorporated in the analyses of climate proofing by using the climate scenario’s developed by the Royal Dutch Meteorological Institute (KNMI), the levels of uncertainty – from very unlikely to very likely – deployed by the IPCC and socio-economic scenarios.

The authors argue for an innovative combination of social and technical measures to face up to the challenge of climate proofing the Netherlands. Furthermore, the researchers provide a rough overview of the highly uncertain costs and benefits of Dutch adaptation. It is also not always clear which costs result directly from climate change and which costs are the results of, for example, higher norms. From this initial analysis it follows that water storage options are very expensive, and that in some cases the costs outweigh the benefits.

*What conclusions on institutions and governance can be drawn from the document?*

In the Routeplanner, 96 different options for climate proofing the Netherlands are identified. These options are sorted according to: importance, urgency, no-regret, additional effects, mitigation effect and complexity (weighted sum of technological, social and institutional complexity). The authors conclude that first, the number of options is largest for the water issue and smallest for health challenges. Second, the main complexity is institutional complexity; technically, the options are not difficult; however, measures require the involvement of many different actors, which makes the management of these options complex. Third, there is a correlation between ranking and complexity. Many important and urgent options are difficult to implement, and as an example they mention the Room for the River policy (see water chapter). Based on their findings, the authors

recommend developing new, temporary and flexible institutional arrangements that support the implementation of adaptation options.

These institutional arrangements should acknowledge that in some instances adaptation occurs autonomously, however, that in many instances policies are required. The policies should adopt a long-term vision and make sure that the costs, benefits and risks are equitably distributed among and between societies and generations. Adaptation policies should focus on integral developments taking local aspects specific for the area into account.

Moreover, the institutional arrangements should promote participation of stakeholders, for example that of farmers and civilians, to deal with the social complexity. To stimulate autonomous adaptation, the ability of local actors to solve problems should be increased, which is amongst others to be done through education programmes.

*What is especially relevant to our content analysis?*

The report is an important document for our content analysis because it contains the basic Dutch ‘framing’ of the adaptation problem. The strong link between adaptation and spatial planning originated in the Routeplanner research programmes. Spatial planning is framed as a process which is able to continuously incorporate new and innovative insights. This process might provide a structure to tackle the complexity; at least the chaos of actors is spatially structured, and these spatial structures provide arenas to organize discussions. Multi-level, multi-actor learning is an integral part in Routeplanner approaches.

### **3.2.8 VROM - Council, 2007: The Hype Is Over (De Hype Voorbij)**

*What kind of document is it: about what, by whom, for whom?*

This report of the VROM-Council has recommendations for the national government. According to the authors, the recommendations in the report could be included in the development of the National Adaptation Agenda.

*How is (adaptation to) climate change addressed in the document?*

Climate change is considered to be hype. Hypes have advantages; they create room for realizing ideas. However, it can also have disadvantages; hypes pass. And adaptation to climate change demands structural attention.

The report emphasizes uncertainty about the impacts of climate change. This uncertainty, according to the authors, is often neglected by policy-makers who are looking for tangible and substantial, often technological, solutions. However, those solutions often only partially address the climate adaptation problem, which is characterized by complexity and requires a more holistic approach. In doing this, policy-makers tend to deny the many different perspectives on adaptation among various actors.

Also, the authors identify a tendency among policy-makers to use the middle scenario as a guideline when developing and assessing adaptation options. However, the extreme scenarios function to test the robustness of policies, and therefore, these scenarios should be included in an evaluation of policy.

The authors conclude that uncertainty should be an integral element in our adaptation strategies. There is a need for structural, offensive and flexible policies for the long term.

*What conclusions on institutions and governance can be drawn from the document?*

The Council sees a leading role for the national government in adaptation; however, it should involve other actors as well. A start should be made with identifying no regret-options and evaluating whether existing policies can be better geared towards adaptation.

However, the Council identifies some institutional barriers. First, the national government offers no clear direction to guide the governance of adaptation to climate change. Many different people have partial and different responsibilities for adaptation, and especially civilians are not aware of their responsibility and have great faith in the national government to solve this problem for them. The private industry is mainly occupied with mitigation activities; with the exception of the insurance industry who already prepares for the impacts. The national government is the only party that can guide all other parties to make a balanced risk assessment. However, according to the Council, the most critical question is whether the national government is able to live up to this task. The Council thinks the ministry of VROM should lead the national government in its task. But it also advocates the installation of a watch-dog, critically watching security issues.

Second, administrative complexity is often overlooked in the Netherlands. The focus is on technological measures, however, questions of who will take those measures, who will pay for those measures and who will be responsible are seldom asked.

*What is especially relevant to our content analysis?*

The conclusion is that the government appears to be able to consider long-term impacts through scenario's, but still seem unable to translate such a view in actions as the solutions are still only short-term, is interesting. The Council wants the national government to take up a leadership role by initiating flexible and inclusive policies. Also, the institutional lack of rules guiding costs and responsibilities, is an important conclusion.

### **3.2.9 National Adaptation Strategy: Make room for Climate!**

*What kind of document is it: about what, by whom, for whom?*

In November 2007, the authorities behind the ARK programme (i.e. ministries of VROM, V&W, LNV en EZ, VNG, IPO and the Union of Water boards have published the National Adaptation Strategy (NAS) under the title 'Make Room for Climate!' The strategy aims to formulate an innovative and intersectoral approach to climate proof the Netherlands.

The strategy consists of two documents: a policy document (48 pages) and an administrative report (16 pages) in which the most important conclusions are summed up. We will treat the policy document in this analysis.

*How is (adaptation to) climate change addressed in the document?*

In the NAS, adaptation is a spatial issue. The programme only addresses spatial measures to cope with the impacts of climate change. Not that other measures, like vaccinations, are unimportant, however, the authors argue that those measures fall under other policy programmes, which are not specified.

The strategy discusses the uncertainties about how climate change will impact the Netherlands. To deal with this uncertainty, the strategy proposes to assess adaptation measures against all four of the KNMI scenarios on a time span of hundred years, and to make cost-benefit analysis. For large-scale spatial investments, like investments in primary dikes, the strategy proposes a longer time span or assessing against a more extreme scenario.

The strategy sets out general guidelines for adaptation in the Netherlands. First, adaptation should focus on risk management: preventing and limiting damage. To do this, adaptation measures should contribute to resilience, which is both the ability to continue to perform critical system functions under changing external circumstances, like climate change impacts, and the ability to recover from system failures caused by shocks. As an example, the measure of compartmentalising (different circles of risk which keep risks in specific areas under control) is proposed.

Second, the strategy advocates the utilization of ecological process as adaptation measures. Ecological processes can be used to create water retention and manage temperatures in cities.

Third, the strategy stresses that adaptation is locally context-dependent: for every locality, a suitable combination of a variety solutions will need to be developed.

Fourth, mainstreaming is important, because through mainstreaming social actors can be made aware and involved in adaptation activities (multi-actor and multi-sector). This requires a transition in thinking about adaptation. It should stimulate the awareness of civilians (autonomous adaptation) and enhance social learning. Learning will also be stimulated by monitoring the adaptation process to show successes and failures.

MNP was commissioned by the Dutch parliament to compare the NAS with the EU Green Paper on Adaptation (Van Minnen et al. 2007). MNP concludes in this study that both visionary policy documents are not contradictory, however, they are different. They are similar in their approach to adaptation as a regional issue, belonging to the domain of local and regional governments who are best able to develop adaptation measures that are suitable in the specific local context. They are different in their priorities and the type of measures they propose. The NAS prioritizes water issues, agriculture and climate proof cities, while the Green paper is more concerned with droughts, salinization and effects on health. The NAS focuses on spatial planning and on 'hard measures' like building dykes, while the Green paper focuses more on soft measures like restoring natural processes.

*What conclusions on institutions and governance can be drawn from the document?*

The report distinguishes system responsibility and result orientation. System responsibility means the responsibility to transform the current system into a more adaptive one, through a transition in thinking about natural circumstances and mainstreaming adaptation in other policy domains. This requires visionary leadership and a collaborative approach involving government bodies at all levels of society, but also involving actor from other sectors. This leadership should advocate context-specific policies. According to the authors of the strategy, the national government has the main system responsibility. However, the government should work on trust, as this is one of the main drivers behind collaboration.

Governments at all levels also have the responsibility to achieve results. In this context the strategy emphasizes opportunities that climate change impacts can bring: for the agricultural sectors, the leisure sector and the water sector. Governments should communicate those opportunities and stimulate actions to seize the benefits (entrepreneurial leadership).

The strategy assesses the current state of adaptation policy in the Netherlands to make recommendations on how to improve adaptation policy. At national level, a reasonable number of adaptation policies are present, however, at regional and local level these policies are lacking. It stresses that especially civilians should be more involved in adaptation solutions. Overall, adaptation in the Netherlands is well developed in the field of national security, in other policy fields there is still a lot that needs to be done. Especially the economic sectors lag behind in this respect. And while there is some policy on climate change adaptation, those policies are not yet backed by laws. Furthermore, the strategy emphasizes the need for large-scale investments. It does not specify where those resources are to be found, instead, it proposes to develop new financial instruments to fund adaptation measures. Also, it proposes to develop an assessment tool to weigh the costs and benefits of different adaptation measures against each other.

*What is especially relevant to our content analysis?*

The report focuses solely on spatial planning. While it admits that this focus cannot solve all adaptation problems, other approaches are not elaborated. Resilience is an important characteristic in our adaptive capacity framework, however, this strategy does not provide details on how to assess or manage resilience. Multi-actor and multi-level and multi-sector governance is thought to be important, and this strategy signals that the economic sector is insufficiently involved. The general view resulting from this strategy is that the process of institutionalizing adaptation is still in the initial phase, however, different parties are trying to move this process into the next phase.

### **3.2.10 Explorative study for an Assessment Tool**

*What kind of document is it: about what, by whom, for whom?*

In March 2008, through a joint collaboration of the knowledge institutes Deltaris, Novio Consult, MNP, Habiforum and Loasys, a first initiative was undertaken to develop an assessment tool for adaptation options.

This assessment tool can be used at different government levels: The national level, the provincial level, the water board level and the municipal level. The tool distinguishes between four themes: Security, biodiversity, quality of the living environment and economy & infrastructure. The tool aims to assist governments at different levels in assessing the opportunities and risks of different adaptation options.

The tool offers a step-wise method to incorporate climate adaptation choices in spatial planning policies. It distinguishes between three categories of spatial planning: location choice, location design and location management. The tool focuses mainly on the first two categories, however, the authors stress the also in the last category there are important challenges. Within this last category, climate policies need to be integrated in existing spatial structures, which will be a difficult process. In the first two categories, all the options are open.

*How is (adaptation to) climate change addressed in the document?*

Adaptation is interpreted as it is interpreted in the NAS. Climate proofing consists of resilience, flexibility and adaptive capacity.

*What conclusions on institutions and governance can be drawn from the document?*

The step-wise method includes three steps to assess and, where necessary, change the institutional structure.

In step 1 the indicators of ‘climate proofing’ are selected for a specific theme.

Step 2 involves an analysis of existing laws and policies within the theme on these indicators. Laws and policies are tested against the KNMI scenario’s or when necessary more extreme scenarios. This analysis exposes the risks, seriousness and scale of impacts of the risks, and the resilience of the system. Based on this assessment a choice should be made on whether or not to change the current system.

Step 3 explores the possibilities for changing the system of laws and policies within the theme. Costs and benefits of different options should be compared to increase the attainability and efficiency of adaptation options.

The authors stress that it is inevitable that decisions on adaptation should be made in a context of uncertainty. When certain risk is socially accepted, a top down approach – for example through installing norms – might be sufficient. When a risk is too high or too uncertain to reach social consensus on its management, a bottom-up might be more suitable.

The authors use their tool to make a quick-scan of the possibilities to include adaptation considerations in spatial planning decisions in the Netherlands. They conclude that in principle there are sufficient opportunities. National governments can and should provide the general structure on adaptation by adopting essential norms and future aims into their structural plans (structuurvisies). By adopting only the essential norms and aims, they provide the regional and local level with adequate room to find their own context-specific solutions while at the same time staying within the limits posed at national level.

The authors suggest integrating their adaptation assessment tool with the Environmental Impact Assessment (Milieueffectenrapportage: MER, see chapter on spatial planning) and the water test (see water chapter) into one integral assessment tool.

The authors furthermore stress that it is important to think about the distribution of the costs and benefits of adaptation measures. For example, the principle of responsibility could be used, in which the costs are borne by the party responsible for causing the impacts (e.g. property owners, exploiters, governments).

*What is especially relevant to our content analysis?*

The tool can be used at multiple levels of governance, however, it seems to be aimed only at the government sector and not at other sectors. It follows the spatial planning approach to adaptation, and within this, focuses on location choice and location design. It aims at finding cost-effective adaptation solutions, within a framework of national priorities. A new institution of an integrated assessment test is proposed, and a lack of institutions on distributions of costs and benefits is signalled.

### **3.2.11 Policy Statement Working Together, Living Together (Samen Werken, Samen Leven)**

*What kind of document is it: about what, by whom, for whom?*

In June 2007 the newly installed Balkenende IV government presented its policy statement - Working Together, Living Together, depicting the **vision** of the government on the Netherlands and on the way they want to govern the Netherlands.

*How is (adaptation to) climate change addressed in the document?*

Climate proofing the Netherlands is one of the main aims of the Balkenende IV government under the theme 'a sustainable living environment'. The priorities are: a Spatial Framework (Ruimtelijke Hoofstructuur), an assessment tool for location choices and combating droughts.

Under the theme 'Security, stability and respect', attention is paid to the 'National Security Programme' with which the government strives for more coherence in security issues. Six important risks are identified, and one of these risks concerns climate change.

*What conclusions on institutions and governance can be drawn from the document?*

The Spatial Framework and the assessment tool for location choices are mentioned as institutions for climate change adaptation. More generally, it is stated that this government wants to improve collaboration between different government levels and administrations, as well as collaboration between government and non-government actors. The public sector is seen as a sector that should be submissive to civilians: civilians should be provided with room to find their own solutions to problems.

*What is especially relevant to our content analysis?*

Climate change is quite high in the political agenda of the government. A Spatial Framework and assessment tool for location choices are institutions proposed to deal with the impacts of climate change.

### **3.2.12 National Risk Strategy and National Risk Assessment**

*What kind of document is it: about what, by whom, for whom?*

In April 2007 the Balkenende IV government adopted the National Risk Strategy. The strategy aims to enhance security and safety in the Netherlands. The strategy involves making National Risk Assessments, that will be used to further advance the National Risk Strategy.

In first instance, three high-level risks will be assessed: climate change, polarization of societal groups and energy security. In 2008, the results of this assessment were submitted in a report.

*How is (adaptation to) climate change addressed in the document?*

The strategy acknowledges uncertainties surrounding risks, and therefore, the assessment uses scenarios (discuss doubts). For every risk, different future scenarios are compared on two dimensions: the chance that the scenario will occur and the seriousness of the implications of a scenario once it occurs.

In the First National Risk Assessment, under the theme of climate change, three scenarios are identified: floods, heat-droughts periods and a flu pandemic. From this assessment the authors conclude that a flu pandemic is most likely to occur and is also most catastrophic in its consequences. Floods have severe consequences, however, the risk of occurrence is low. The consequences of heat-drought periods are not very serious, however, the likelihood that this scenario will occur is high.

*What conclusions on institutions and governance can be drawn from the document?*

One of the rationales behind the safety strategy is the conviction of the government that good safety management requires collaboration between multiple actors at multiple levels of governance. The implementation plan suggests the establishment of think tanks, bringing together experts from science, businesses, governments, at the domestic as well as international level, to stimulate knowledge development and a critical view on risk management (learning, multiple problem frames).

To increase the national safety, the strategy foresees a number of risks assessments that follow three steps:

1. Analysing which challenges pose risks to the Netherlands and analyse those risks on the chance that they will occur and their impacts;
2. Assess whether there is sufficient capacity (human, financial, technological) to cope with the risk;
3. Develop an integral recommendation on how to enhance national safety.

Based on the risk assessments, existing policies or policy instruments will be altered or new policies or instruments will be developed. Risk assessments will be annually conducted (learning) and every two years a strategic exploration will be undertaken to make sure that the most relevant risks are under elaboration (double loop learning).

In the National Risks Assessment, a capacity analysis is made for dealing with climate change risks: which actors have a responsibility in dealing with the risks and what are their capabilities? The assessment studies both capabilities to prevent risks or impacts, and capabilities to deal with the impacts that could not have been prevented.

A great deal of preventive responsibility is placed with government bodies; they have the capability to act on their responsibility by directly taking actions or by adopting norms (hence, there is not a lot of room for autonomous preventive adaptation). Only in the heat-drought scenario, a preventive responsibility is assigned to business actors whose businesses are dependent on water, for example, for cooling.

The responsibility of being prepared for a risk also belongs largely to the government domain; however, civilians and businesses can make a difference. The national government should communicate the risks, and ways to prepare for the risk, to the public, for example, by using risk maps and public campaigns (autonomous actions aimed at increasing the preparedness for risks).

To deal with the impacts of a risk, information exchange is very important. Government bodies bear a huge responsibility in this respect. They should inform residents what to do and where to go in times of crisis. Residents have a responsibility to be aware of their options in times of crisis and to act on them. Another part of dealing with the impacts is

compensating for damage done, providing after care, and rebuilding. Here, the national government also has the main responsibility.

*What is especially relevant to our content analysis?*

This policy is directed at managing crises, amongst other crises resulting out of climate change impacts. The national government and other government bodies are attributed with the main responsibility in all phases of crisis management; however, the role of civil and business actors and the importance of autonomous ability to adapt are emphasized.

### 3.3 Laws and Instruments

#### 3.3.1 Climate Agreement Municipalities and National Government

*What kind of document is it: about what, by whom, for whom?*

A Climate Agreement between the municipalities and national government was signed on 12 November 2007, and applies for the period 2007 and 2012. It aims to increase collaboration between the signatories in the area of climate change.

*How is (adaptation to) climate change addressed in the document?*

The Climate Agreements treats six climate related themes, five on mitigation and one on adaptation. With regard to adaptation, spatial planning, water management and health care are considered to be important sectors. The agreement holds that the central government and municipalities should map adaptation measures, their implementation method, their costs, and their financing mechanisms. Also, pilot projects are stimulated.

*What conclusions on institutions and governance can be drawn from the document?*

Because adaptation is seen as a regional challenge, municipalities are crucial partners for the national government. Through this agreement, the national government shows municipalities that it values their role in adaptation and that it is prepared to support municipalities in their adaptation strategies.

*What is especially relevant to our content analysis?*

The national government and municipalities are increasing their collaboration on adaptation issues.

#### 3.3.2 Dutch Environmental Management Act (Wm)

*What kind of document is it: about what, by whom, for whom?*

The Environmental Management Act (Wet Milieubeheer: Wm<sup>10</sup>) regulates the protection of the environment.<sup>11</sup> The law entered into force in 1993 and falls under the authority of VROM. The act is a framework for environmental management; it provides general

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<sup>10</sup> text of the law can be found at: [http://www.st-ab.nl/wetten/0613\\_Wet\\_milieubeheer\\_Wm.htm](http://www.st-ab.nl/wetten/0613_Wet_milieubeheer_Wm.htm)

<sup>11</sup> Text of the law can be found at: <http://www.infomil.nl/aspx/get.aspx?xdl=/views/infomil/xdl/page&ItmIdt=28094&SitIdt=111&VarIdt=82>

regulations, further specified in ‘Orders in Council’ (Algemene Maatregel van Bestuur: AmvB) and other ministerial rules.

The rules capture a broad range of environmental issues, including waste treatment, environmental enforcement, and public access to environmental data. The law prescribes which activities require what kind of permissions and procedures and how responsibilities are regulated.

*How is (adaptation to) climate change addressed in the document?*

According to the first article of the Wm, the environment consists of the physical environment, considered for its importance to the protection of people, animals, plants, goods, water, ground and air and of scenic, natural science and cultural-historical values and of the regulation of climate. Originally, the law was not designed to deal with the problem of climate change; it regulated environmental damages originated in close vicinity to businesses, housing and other human activities.

Principally, the law implicitly obliges the state to take measures to combat climate change, following the ‘duty of care’ laid down in the act, holding that “every person that knows or reasonably can be expected to know that his or her actions or inactions cause negative effects on the environment, is obligated to omit such actions to the extent that this is a reasonable request, or take measures to prevent the negative effect to the extent that this is a reasonable request, or, when negative effects cannot be prevented, to minimize or resolve the effects”. This duty of care is particularly relevant with respect to the mitigation aspect of climate change, and less to the adaptation aspect.

*What conclusions on institutions and governance can be drawn from the document?*

The law contains includes many instruments. Moreover, the law is continuously developing, it still contains empty chapters and existing chapters are constantly updates, for example to incorporate new international or European policies.

Instruments are, for example, environmental plans, environmental impact assessments, environmental quality standards, environmental permissions, reporting obligations and enforcement rules. Also, the law contains several financial instruments, including financial assistance, environmental taxes and damage compensation regulations. For example, the Wm dictates that certain businesses should acquire an environmental permission before going into business, and that this permission should include prescriptions on how to protect the environment.

An important instrument for climate change adaptation embedded in the Wm might be the Environmental Impact Assessment (EIA, see also spatial planning chapter). Through EIA’s, initiators of spatial development plans should show the positive and negative environmental impacts of their plans. When impacts on climate proofing are considered in those assessment, this instrument might be used to stimulate climate proof spatial planning

*What is especially relevant to our content analysis?*

This law is not designed for regulating climate change. However, some elements in this law might be extended to cover the issue of climate change. The duty of care might offer opportunities for mitigation whereas the EIA might offer opportunities for adaptation management.

### 3.3.3 Environmental Balances and Environmental Explorations

*What kind of document is it: about what, by whom, for whom?*

The Wm contains the obligation to report on the progress of environmental policy in an environmental balance. This duty falls on the shoulders of the National Institute for Public Health and the Environment (Rijksinstituut voor Volksgezondheid & Milieu: RIVM), who has contracted MNP/PBL for this task since the year 2000.

An environmental balance evaluates the past year: what has been done on environmental issues, what environmental goals are reached and which are not, what are expected problem areas? These balances are input to environmental policy development.

The Wm furthermore arranges that once every four years an environmental exploration is performed by MNP/PBL. Environmental explorations look ahead; what future environmental developments are expected and how does this affect the Netherlands? Environmental explorations are used as input for National Environmental Policy Plans. In 2006 the most recent environmental exploration was published.

*How is (adaptation to) climate change addressed in the document?*

On the internet, all the environmental balances are available from 1999 onwards. Since then, climate change is well represented in environmental balances. However, the emphasis is on mitigation. Until 2006, adaptation is not directly mentioned at all.

An important part of the 2007 environmental balance focuses on climate change. This balance only mentions the impacts that climate change will have on the Netherlands, however, and still focuses almost solely on emission reduction. However, adaptation is indirectly included under other environmental issues. For example, drought is considered to be a problematic policy domain. MNP concludes that especially financial resources are lacking to adequately deal with the problem. The problem is connected to the impacts of climate change in the balance, however, possibilities for dealing with policy problems are not treated in the climate change paragraph. The 2008 and 2009 environmental balances also mention the impacts of climate change on the Netherlands. However, when Dutch policy is revised and policy options for the Netherlands are considered, the focus is on climate change mitigation and not on adaptation.

The environmental exploration 2006 - 2040 treats climate change as a separate policy problem. Although it lists several impacts of climate change for the Netherlands, as in the environmental balances, the main focus is on mitigation when it comes down to recommendations for solutions.

*What conclusions on institutions and governance can be drawn from the document?*

MNP/PBL also studies the social support for environmental policy in its 2007 environmental balance. The authors signal increasing concerns among social actors about environmental problems. Civilians are willing to pay for solving environmental problems, but only as long as others invest the same. They expect a strong leadership role from the national government.

*What is especially relevant to our content analysis?*

Environmental balances and explorations do not address the climate change adaptation problem in great detail, and are therefore not very relevant for our analysis. The reason

for the lack of interest in adaptation in environmental balances is probably that those assessments only study existing policy fields, and adaptation forms a new policy field.

### 3.3.4 Research programmes CcSP (KvR), KfC (KvK), LwW (LmW) and Habiforum

*What kind of document is it: about what, by whom, for whom?*

At this moment, multiple climate related research programmes are sponsored by the Dutch government: Climate changes Spatial Planning (CcSP<sup>12</sup>), Living with Water (LwW<sup>13</sup>) and Renewable Use of Space (Habiforum 2<sup>14</sup>). These programmes are an important contribution to the knowledge infrastructure behind government policy on climate change (adaptation). Climate changes Spatial Planning and its successor Knowledge for Climate (KfC) are studying the spatial impacts of climate change for the Netherlands. Living with Water aims to contribute to a transition towards sustainable water management: from averting water towards accommodating water. Renewable Use of Space stimulates the transition from planning that only took roads and tracks into account towards development planning which includes development objectives and is more flexible and adaptable to changing external circumstances like climate change.

*How is (adaptation to) climate change addressed in the document?*

All three main research programmes are designed to research characteristics of the climate change problem. Living with Water and Renewable Use of Space pay a lot of attention to adaptation, while Climate changes Spatial Planning/Knowledge for Climate also focuses on mitigation.

*What conclusions on institutions and governance can be drawn from the document?*

The research programmes stimulate collaboration between government and science, and between science and social actors.

*What is especially relevant to our content analysis?*

The research programmes mainly aim to understand the problems that climate change pose to different sectors, and to develop sector-specific solutions to those problems. Most research does not focus on institutional aspects, with the exception of a project looking at new insurance constructions and the project that this report is part of. At the same time, all the newly proposed approaches to adaptation (spatial planning, assessment tools, hotspots, collaborations, etc.) have implications for the institutional structure of the Netherlands.

### 3.3.5 Proposal for a Law on safety regions

*What kind of document is it: about what, by whom, for whom?*

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<sup>12</sup> More information on this research project can be found at: [www.klimaatonderzoeknederland.nl](http://www.klimaatonderzoeknederland.nl)

<sup>13</sup> More information on this research project can be found at: [www.levenmetwater.nl](http://www.levenmetwater.nl)

<sup>14</sup> More information on this research project can be found at: [www.habiforum.nl](http://www.habiforum.nl)

The proposed law aims to increase regional collaboration between different crisis services, clustered in ‘safety regions’.<sup>15</sup> The law stipulates roles, responsibilities, and financing mechanisms.

*How is (adaptation to) climate change addressed in the document?*

Floods and drinking water incidents are mentioned as calamities that crisis service in the regions should be well prepared for.

*What conclusions on institutions and governance can be drawn from the document?*

Many crisis services have a regional scope, however, different services are often not working together. Municipalities are first and foremost responsible to manage local safety issues. The law uses the motto ‘local management if possible, regional management if necessary’.

*What is especially relevant to our content analysis?*

The motto appears to look for a balance between local autonomy and regional leadership in case of (climate) calamities.

### **3.3.6 Law for a contribution to damage in case of disasters and accidents.**

*What kind of document is it: about what, by whom, for whom?*

In 1998, the Law for a financial contribution to environmental damages in case of disasters and accidents (Wet Tegemoetkoming Schade bij Rampen en Ongevallen: WTS) entered into force.<sup>16</sup> The Law is activated when the Netherlands is hit by an event with major consequences, for which criteria are laid down in the law. The first criterion is that the event has caused social disruption, demanding coordinated action of multiple emergency services. A second criterion is that the event threatens the life of many individuals or threatens large economic interests. Also, more specific criteria are adopted for specific circumstances. For example, to be activated in the case of water nuisance, this nuisance should meet some specific standards guaranteeing that only in the case of large-scale water nuisance the law is enacted. Eventually, the Ministry of Internal Affairs decides on a case-by-case basis in which situations the law is to be activated and in which situations not.

The WTS arranges a, often financial, contribution to victims of large-scale disasters and accidents. Part of their damage is compensated by the Dutch national government. How much of the damage is actually compensated, is decided on a case-by-case by Internal Affairs.

*How is (adaptation to) climate change addressed in the document?*

Under specific circumstances, a flood or water nuisance is considered to be a disaster, and the law can be activated.

*What conclusions on institutions and governance can be drawn from the document?*

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<sup>15</sup> For more information on safety regions, see:

<http://www.minbzk.nl/onderwerpen/veiligheid/veiligheidsregio's/publicaties?ActItemIdt=82397>

<sup>16</sup> The text of the law is online available at: <http://www.st->

[ab.nl/wetten/0818\\_Wet\\_tegemoetkoming\\_schade\\_bij\\_rampen\\_en\\_zware\\_ongevallen.htm](http://www.st-ab.nl/wetten/0818_Wet_tegemoetkoming_schade_bij_rampen_en_zware_ongevallen.htm)

The WTS provides a contribution in damage compensation to victims of large-scale disasters and accidents. However, it is specified that in situations where it could reasonably have been expected from individuals to insure themselves against damage or where individuals have already received damage compensation from other means, WTS compensation is not provided.

Since the WTS emphasizes social disruptive events, small-scale floods and other small-scale climate related events fall outside of the scope of the WTS. Structural small scale water problems are seen as the responsibility of the citizen himself; they either take the risk or relevant measures.

*What is especially relevant to our content analysis?*

The WTS is an institution that provides a safety net for large-scale events. It is generally accepted that the impacts of climate change will not occur only on incidental and large-scale basis, but that climate change will also exacerbate minor structural problems, like small-scale water nuisance. For these kinds of events, it is expected from residents that they take the necessary protection measures themselves.

### **3.3.7 Think Ahead Campaign**

*What kind of document is it: about what, by whom, for whom?*

In 2006, the Balkenende III government launched the ‘Think Ahead Campaign’ (Campagne Denk Vooruit).<sup>17</sup> The campaign aims to increase the coping capacity of individuals. Several themes are distinguished and for every theme the expectations from the government and from individuals is specified.

*How is (adaptation to) climate change addressed in the document?*

Two possible impacts of climate change are distinguished as a theme within the campaign: Extreme weather conditions and floods. Extreme weather conditions fall outside the scope of this analysis. In case of floods, the campaign addresses what residents should do before a flood strikes – i.e. turn on the national radio and think of a place to evacuate to – during a flood – i.e. turn off gas and electricity and when evacuation is no option, go the highest place in the vicinity.

*What conclusions on institutions and governance can be drawn from the document?*

The campaign stresses the individual responsibility of citizens to prevent and minimize damage caused by disasters.

*What is especially relevant to our content analysis?*

The campaign aims to enlarge the autonomous capacity to act and improvise in times of crisis, although this is done through a top-down approach using mass-media.

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<sup>17</sup> More information on this campaign can be found at: [www.denkvooruit.nl](http://www.denkvooruit.nl).

## 4. The agricultural sector

### 4.1 Introduction

Many policy documents of the Ministry of Agriculture, Nature and Food Security (Ministerie van Landbouw, Natuur en Voedselveiligheid: LNV) are about the countryside. The countryside comprises the non-urbanized part of the Netherlands; it includes agricultural areas and natural areas, but also small villages. This chapter addresses agricultural policies or policies that partially concern agriculture, although this distinction is not always easy to make.

In general, Dutch institutions regarding agriculture include:

- The market:
  - o General (formal and informal) market regulations, amongst other WTO/GATT agreements and (partly collective) agreements with suppliers.
  - o EU regulations on trade in agricultural products, causing the rise of a new market with a minimum price for milk, butter, beef, grains and sugar.
- Government regulations on support and damage compensation, including for agrarian environmental management, the protection of rare species, innovations and damage due to frost. These regulations financially support the agricultural sector in the Netherlands. Some of these regulations also exist for protection in other sectors. For example, damage compensations – that are generally regulated through the government Regulations Service (Dienst Regelingen) – can be offered to compensate for damage caused to protected animals or plants, by a flood or by a hailstorm. The agricultural sector is one of the victims and can opt for compensation. Other financial support measures are directly aimed at the agricultural sector, for example, to stimulate sustainable services for nature and water, or because the continued existence of the agricultural sector is seen as an important goal for the Netherlands (company premiums).
- The regulations of the Dutch government in the areas of environment and health, including:
  - o Fertilizer laws;
  - o Animal protection and health;
  - o Protection of crops; and
  - o Hygiene.
- Local and regional agreements, including:
  - o Agreements between farmers and water boards concerning water level management and the maintenance of water ways; and

- Discussions with provinces and municipalities and farmers concerning regional developments.

Dutch agricultural regulations follow the above order of importance. Market regulations are most important. The EU is a very important source of influence for Dutch agriculture. National economic instruments that support the sector are more important than national instruments that try to put limits on agricultural practices, and least influential are measures for spatial planning.

## 4.2 Policy Development

### 4.2.1 Agenda for a Living Countryside

*What kind of document is it: about what, by whom, for whom?*

This policy document describes the government's vision on countryside developments. Precise goals and implementing means are submitted in the Multi-year Programme for a Living Countryside (see below).

*How is (adaptation to) climate change addressed in the document?*

The policy document focuses, inter alia, on climate change impacts in the agricultural sector. The most important challenges relating to water on the countryside specifically addressed are:

- Sufficient protection against high water levels and minimizing water nuisance;
- Improving the quality of water, counteracting salinization of water;
- Combating dryness in natural areas;
- Ensuring sufficient water supply in dry periods; and
- Repairing transition areas between fresh and salt water and wet and dry areas.

While the policy document recognizes these challenges, for a solutions to these challenges the document refers to non-agricultural policies. For example, water nuisance and combating dryness should be realized through the National Ecological Network (see nature chapter). Furthermore, the Water Management in the 21<sup>st</sup> Century policy and the WFD are referred to as means to deal with the challenges. The only area in which the government sees a role for the agricultural is water retention. Water retention will claim space from agricultural grounds. No concrete plans follow from this notion, however, a visionary document will be prepared to assess the opportunities to combine water, agricultural and national policy goals.

*What conclusions on institutions and governance can be drawn from the document?*

This document encapsulates the general management vision of the Balkenende governments - 'decentralize where possible, centralize where needed'. National policy will set only general goals, leaving the local level with a great deal of autonomy regarding how to achieve the goals. Farmers are expected to have high adaptive capacity and an innovative attitude; they are the ones that should broaden and diversify the countryside economy. To achieve this, the multi-year programme contracts are mentioned. The government aims to stimulate a regional approach.

The document furthermore stipulates that Dutch agriculture is for a large part influenced by European developments and policies. In this context, the framework regulation (1257/1999) on support for rural development from the European Agricultural Guidance and Guarantee Fund 2007-2013, the Third Cohesion report (mainly financial) and the CAP are mentioned.

*What is especially relevant to our content analysis?*

The impacts of climate change on the agricultural sector are acknowledged and inventoried:

1. Agreements between farmers and water boards on droughts;
2. Crop damage caused by extreme weather conditions;
3. New diseases and plaques or a reinforcements of those because of disappearing frost periods;
4. Agrarian nature management under increasing and accelerating migration of species;
5. Investments in energy savings (positive effect); and
6. Use of fertilizers under changing precipitation patterns.

Climate change thus has an impact on agricultural production and thus agricultural production (1-3) on the one hand and more peripheral institutions on the other hand(4-6).

Furthermore, spatial planning seems to play a minor role in adapting the agriculture sector to the impacts of climate change. While the water sector is closely interconnected with spatial planning for adaptation goals, the agricultural is not (yet). Close links are being made between the agricultural and nature sector and generally, the agricultural sectors has close links with the water sector where climate change adaptation is a hot issue. Though all these linkages, spatial planning might become more integrated in the agricultural and nature sectors as a means for adaptation, however, at the moment of writing this analysis, the role of spatial planning remains subordinate to that of market and European instruments.

The Dutch institutions in the agricultural sector do not require much of farmers (providing room for autonomous change, however, not necessarily in favor of adaptation). Water and nature institutions should bring solutions for adaptation, and where there is a role for the agricultural sector, market mechanisms and regional approaches should do the trick.

#### **4.2.2 Agenda for a Living Countryside 2007-2013 - Multi-year programme**

*What kind of document is it: about what, by whom, for whom?*

This agenda is an update of the first multi-year programme for the countryside 2004-2007. Multi-year programmes contain the aims of the national government concerning agriculture and nature. The programmes only specify which norms should be achieved within a period of seven years, so respectively in 2007 and 2013. Achieving these aims is a responsibility decentralized to the provinces.

The update of the multi-year programme incorporates new policy developments, mainly the Rural Area Development Act (Wet Inrichting Landelijk Gebied: WILG). In this updated programme, aims are better defined and financially backed by an investment

budget (that demonstrates learning). Furthermore, it contains a first proposal for a division of responsibilities and norms over different provinces.

*How is (adaptation to) climate change addressed in the document?*

The description of the context within which the programme is placed briefly mentions climate change (section 3.7). The expected impact of climate changes on nature (loss of biodiversity) is worrying.

In some instances, water management is linked with agriculture. In these cases, climate change impacts on agriculture receive more attention. Water nuisance and droughts are seen as the most serious consequences.

Remarkably, impacts on agriculture itself, like salinization, are not treated.

*What conclusions on institutions and governance can be drawn from the document?*

The multi-year programme is again an example of the Balkenende slogan ‘decentralize where possible, centralize where necessary’. The national government formulates national aims, but in doing this, the national government consults provinces, water boards and municipalities, thereby allowing for multiple problem frames. The provinces decide how to achieve these aims within seven years. To this end, the national government negotiated in 2006 separately with every provincial administration to discuss which (part) of the national aims could be taken on by that province, allowing for the development of multiple solutions. These negotiations resulted in multiple provincial multi-year programmes, specifying agreed objectives and necessary (national, provincial and other) budgets. All provinces have drafted such a management plan and they are all implemented.<sup>18</sup> Provinces in their turn, designate tasks to other actors, for example, water boards and municipalities (multi-level institution). However, once provincial contracts are signed and plans are approved, the room for multiple problem frames and solutions is drastically reduced.

The approach selected for the implementation and realization of this programme, is one that stimulates local context specific solutions. This means that responsiveness is stimulated, there is room for multiple problem frames and local autonomy is given.

Goals can be distinguished into requiring quantitative and qualitative effects. Quantitative goals might hinder learning (because it might be experienced as a lack of trust) or enhance learning (when they make possible better monitoring). Ensuring trust between national and provincial management layers is mentioned as an important norm (page 10). However, it is clearly stipulated that provincial management should move within the limits posed by existing national and international legislation, which could be interpreted as a sign of distrust against provinces.

One chapter of the policy document is dedicated to monitoring and evaluation. This chapter is well structured. It contains the rule that once every year the national and provincial governments will debate about the progress of the programme and its aims. Effect-indicators for the achievement of objectives are being continuously adjusted, taking into account new insights, for example, resulting from the ARK programme. All these

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<sup>18</sup> The provincial management plans can be found at:  
<http://www.vitaalplatteland.nu/bibliotheek.html?from=P&to=P>

are characteristics of single loop enhance learning: Redirecting goals and aims when internal or external circumstances ask.

While the multi-year programme states that public private partnerships should be stimulated, it also specifies that these kinds of partnerships are difficult to realize. Entrepreneurial leadership is therefore not well developed.

The policy document extensively deals with the resources that are made available to support this programme. The Government Service for Land and Water Management (Dienst Landelijk Gebied: DLG) is an important actor in this respect; it has dedicated a large workforce to the programme (5.590.000 hours) and this service also distributes government funds that are made available through the ILG-budget for this programme (see below). Also, a coordination team at national level has been appointed to promote bi-party contracts. On resources, this institutions seems to score reasonably well.

In 2010 a midterm review is planned, and in 2014 provinces will be assessed on their end results. When goals are not met, (part of) the budget made available to provinces to achieve the goals might be withdrawn as a penalty. This assures accountability.

*What is especially relevant to our content analysis?*

It should be noted that the Agenda for a Living Countryside focuses more on climate change than on this implementation programme. It appears that in the Netherlands, we still have difficulties with specifying how to deal with adaptation to climate change in the agricultural sector. Institutions, therefore, tend to place responsibilities at the lowest possible level.

For the nature sector, adaptation solutions are almost exclusively sought in the realization of the NEN; for adapting the nature and agricultural sector to water stresses, water policy is referred to.

The development of (non-climate related) national goals, and the way these goals are to be met (through provincial, municipal, water boards and other local actors' actions) allow for diversity in problem frames and solutions and multi-level governance, as well as for learning and autonomous actions, while at the same time guarantee some kind of national vision or plan for guidance. Also accountability in the sense that there might be a financial penalty for not achieving the results laid down in national-provincial contracts and plans is assured.

However, once contracts are signed and plans are approved, the room for diversity, learning and adjustment is reduced. Also, double loop learning (for example taking into account new goals like climate change adaptation instead of redirecting existing goals), and entrepreneurial leadership are problematic aspects in this institution.

### **4.2.3 The Choice for Agriculture**

*What kind of document is it: about what, by whom, for whom?*

This policy note entitled "The Choice for Agriculture" was issued in 2005. It contains the future vision of the Dutch government on the agricultural sector. The **vision** describes expected developments for the Dutch agricultural sector, and to inform entrepre-

neers and enhance their capacity to make long-term decisions. LNV wishes to facilitate and support these decisions.

*How is (adaptation to) climate change taken into account?*

Under the heading of future ‘uncertainties’, climate change is covered. Four scenarios are developed and the likelihood of a scenario depends on the choices made by civilians, entrepreneurs and politicians.

The document also focuses on greenhouse gas mitigation in the agricultural sector through energy saving and energy creation from biomass.

*What conclusions on institutions and governance can be drawn from the document?*

Entrepreneurs in the agrarian sector are entrusted with a major role in future agricultural developments. In this vision, they are the key in successful adaptation to new developments (not specifically connected with climate change). LNV aims to support entrepreneurs to take their own decisions and develop their own solutions while setting the pre-conditions in national policies.

The vision also treats European policy developments, like the CAP through which product support transfers to income support, as important developments influencing the future of Dutch agricultural.

*What is especially relevant to our content analysis?*

This document contains the philosophy of responsibility at the lowest possible level. Farmers maintain their freedoms, however, are also left on their own in finding solutions.

#### **4.2.4 Dutch Strategy for Rural Development 2007-2013**

*What kind of document is it: about what, by whom, for whom?*

This strategic document is a follow-up to the European Rural Development Policy (see section 2.6), which requires every member state to develop its own rural development policy.

The strategy contains a vision on the six EU strategic priorities and should guide national and regional development programmes that opt for European funding. This second version issued in November 2007 describes how financial means from the European Agricultural Fund for Rural Development (EAFRD) will be used from 2007-2013. This policy follows the strategy ‘Agenda for a Living Countryside’.

*How is (adaptation to) climate change addressed in the document?*

Bringing a halt to the deterioration of biodiversity is posed as the main goal for Dutch nature policy, however, this is not linked to climate change.

Agriculture is also not explicitly linked to climate change impacts, however, the contribution of the agricultural sector in reducing CO<sub>2</sub> emissions is mentioned.

*What conclusions on institutions and governance can be drawn from the document?*

National rural policy will provide room for local actors to take their own initiatives. The national government will set in the direction, and within this direction, it will stimulate local actors take realize their plans.

EAFRD-funding will be used to stimulate local actions. In this, the government aims to tackle several problems simultaneously in these local projects, like reducing biodiversity loss, combating climate change and maintaining water quality and quantity.

*What is especially relevant to our content analysis?*

Little direct relationships are being made between nature and climate change adaptation and agriculture and climate change adaptation.

Farmers are attributed with a great deal of responsibility in future agricultural management. This increases variety and room for autonomous change; it, however, shows little learning (no monitoring or organized discussion) and provides little visionary leadership.

#### **4.2.5 Dutch Rural Development Policy 2007-2013 (RDP2/POP2)**

*What kind of document is it: about what, by whom, for whom?*

This policy forms the basis for European funding for rural developments. This document should be and is approved by the European Commission.

The Policy specifies national rural policy on the four central goals formulated in the European Rural Development Policy (i.e. improving the competitiveness of the agricultural and forestry sector; improving the environment and the countryside; improving the quality of life in rural areas and encouraging diversification of the rural economy; and building local capacity for employment and diversification through a LEADER-approach, and a bottom-up approach stimulating the involvement of local actors).

This policy often refers to the policy note by LNV 'The choice for agriculture (see above).

*How is (adaptation to) climate change taken into account?*

Emphasis is placed on the contribution of the agricultural sector in reducing greenhouse gas emissions. In addition, the different impacts of climate change for the agricultural sector are mentioned: high water levels, water nuisance, salinization, dry summer, and temporary high groundwater levels. While these impacts are primarily seen as threats for pastures, they are also addressed because they might have consequences for cultivation. These consequences are, however, not specified any further. It is stated that a sustainable agricultural sector can contribute to lower vulnerabilities to the impacts of climate change.

The RDP2 includes goals that the Netherlands wants to achieve before 2014. Those relating to climate change are:

- Sustainable management of Natura2000 areas and strengthening of biodiversity, mainly by agrarian companies.
- Restoring the water system in a economic and ecological sustainable manner, improving the quality of ground and surface waters and combating dryness in natural and agricultural areas.

*What conclusions on institutions and governance can be drawn from the document?*

The loss of biodiversity is being tackled through financing agro-environmental commitments and agrarian environmental management activities (fauna edges on agricultural grounds for example).

To combat dryness, non-productive investments in natural areas will be subsidized. Furthermore, there will be money available for natural areas with a 'handicap', like pastures and areas where the water levels are high but very suitable for agricultural production.

Other water conditions will be dealt with through Natura2000; farmers do not own a large part of the designated Dutch Natura2000 areas.

Farmers are important actors in Dutch agricultural policy. RDP2 aims to support farmers in their decisions, instead of making decisions for farmers. This approach should lead to sustainable entrepreneurship.

*What is especially relevant to our content analysis?*

For the first time, more 'hard' institutions appear, mainly in the form of financial support. Although they are not linked to climate change adaptation, farmers are stimulated financially to contribute to water and nature aims, and these contributions might have a positive indirect effect on the adaptive capacity of the agricultural sector.

The approach in this policy is decentralised and integral, making different kinds of connections between agriculture, nature and water goals.

#### **4.2.6 SER report on Opportunities for Rural Areas in the Netherlands**

*What kind of document is it: about what, by whom, for whom?*

The Social and Economic Council of the Netherlands (Sociaal Economische Raad: SER), commissioned by the Dutch government, performed a study on the developments for a vital rural economy in 2005.

This report addresses the issue of whether the Dutch government can support a development towards a vital rural economy. The report concludes that this can be done by synchronizing domestic policies with influential European policies, and by acknowledging the role that local actors can play in diversifying and vitalizing the Dutch rural economy.

*How is (adaptation to) climate change taken into account?*

Climate change is mentioned only in an appendix that covers the European rural policies for the period between 2007 and 2013. For Europe, climate change mitigation is part of the central aim to improve nature and environment. Adaptation to climate change receives no attention at all.

*What conclusions on institutions and governance can be drawn from the document?*

This SER report uses the Balkenende vision 'decentralize where possible, centralize where needed'. It emphasizes the role of the individual and entrepreneur and advises to decrease government restrictions limiting the room for action of the individual. Instead, the government should increase autonomous action at the local level by supporting committed entrepreneurship and citizenship.

*What is especially relevant to our content analysis?*

There appear to be few institutions guiding (adaptive) action in the agricultural sector, and yet the SER advises to further decrease institutions in this sector. This advice did not take climate change into account.

## 4.3 Laws and other instruments

### 4.3.1 Rural Areas Development Act (WILG)

*What kind of document is it: about what, by whom, for whom?*

The Rural Areas Development Act (Wet Inrichting Landelijk Gebied: WILG<sup>19</sup>) entered into force in 2007. It sets rules to divide responsibilities between national and provincial governments to increase the effectiveness of the regional rural development approach.

The law consists of two parts: the Investment Budget Rural Areas (Investeringsbudget Landelijk Gebied: ILG, see below) and the instrument of land consolidation, formerly part of the Land Consolidation Act and the Reconstruction Act which are now part of the WILG. In short, the WILG arranges that provincial governments are responsible for achieving goals for rural areas set by the national government in its multi-year programmes (see 4.2.2).

The Land Consolidation Act from 1985 allowed for rearranging a local area. At first, this instrument was mainly used to reconstruct agricultural areas. However, during the years it was also increasingly applied to natural areas (Westerhof et al. 2003). This Act introduced several instruments for land consolidation, and the possibility for using these instruments was divided among different government layers.

The WILG bundles all these instruments into one single instrument for the provincial government: the instrument of Land Consolidation. When a provincial government wants to rearrange an area, it should adopt a 'land consolidation plan' specifying what sub-areas should have which functions. The instrument of land consolidation in the WILG, then, allows for the exchange or swap of grounds to commit to new functions laid down in the provincial plan. The only requirement is that this should be done in combination with improving or constructing new roads, water ways and other public services. Through a reallocation of grounds, new owners and leaseholders are established.

Re-allotment or reallocation takes place following this process:

1. Existing rights of owners and leaseholders are listed and registered;
2. A redistribution plan is made based on consulting involved actors;
3. The list and plan are adopted by the provincial government (as a land consolidation plan);
4. The court and, if necessary, the High Court judge possible appeals; and
5. The new spatial arrangement is established in a consolidation document.

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<sup>19</sup> text of the law can be found at: [http://www.st-ab.nl/wetten/1072\\_Wet\\_inrichting\\_landelijk\\_gebied\\_Wilg.htm](http://www.st-ab.nl/wetten/1072_Wet_inrichting_landelijk_gebied_Wilg.htm)

The Reconstruction Act, or the Law for the reconstruction of specific areas, was adopted in 2002 after experiencing severe negative impacts of intensive cattle-breeding mainly in the eastern parts of the Netherlands. The law aims to reduce those negative impacts integrally by opening the way for a reconstruction of a whole area. For a large part, the law focuses on reducing fertilization, acidification and stench. However, parts of the specific areas included in this law are also designated as NEN areas, because the areas suffer from droughts. All goals for these areas are adopted in the multi-year programs and thus are regulated through the WILG and the end responsibility belongs to provincial authorities. Because this is a new instrument, in the period between 2000 and 2002 six pilot projects were initiated. The reconstruction plans were developed by reconstruction commissions consisting of actors with different backgrounds, and the process was guided by provincial authorities. At this moment, all plans are approved and the implementation has started. Reconstruction should be completed within 12 years. From 2007 onwards, the financing of reconstruction will come from the ILG (see ).

*How is adaptation to climate change taken into account?*

The law does not mention climate change, but it can easily be extended to include climate change. However, as our analysis of existing agricultural policy developments shows, not many adaptation goals for the agricultural sector have been formulated (yet).

*What conclusions on institutions and governance can be drawn from the document?*

The law gives provincial authorities control over land arrangements. The role of the national government is limited to formulating national goals, that are to be met by the provincial level, which delegates responsibilities further down to municipal and water boards levels.

The law has clear financial resources (see ILG below). Also, because the law regulates the division of land ownership, which is an important authority resource for the agricultural as well as the nature sector, this instrument performs well on authority.

Furthermore, this instrument links spatial planning to agricultural and nature purposes. Land consolidation plans are spatial plans and land consolidations are measures to change the spatial structure of an area. Spatial planning is thus used to reach agricultural and nature policy goals.

Like the development of goals and solutions in the multi-year programmes, the instrument of land consolidation provides room for diversity in problem frames and solutions through the involvement of multiple actors at the start of the process. When plans and contracts are approved, little room is left for learning and adjusting problem frames and solutions.

Since the land consolidation instrument is no new instrument to the Netherlands, and the existing knowledge and experience with this instrument is taken into account by structurally involving DLG, institutional memory is good. Because this instrument relies on the voluntary cooperation of stakeholders (Eindrapport Projectteam 'Werkwijze wettelijke herverkaveling RWC/WILG' 5 October 2006), legitimacy is guaranteed.

Land consolidations are based on the principle that no-one will be worse-off because of the exchange. Otherwise, voluntary cooperation would not be possible. Therefore, this instrument performs well on equity. Only in situations where voluntary solutions are in-

adequate and enforced land acquisition is necessary, the (provincial) government might have to deal with negative financial consequences.

*What is especially relevant to our content analysis?*

The law does not mention climate change but can be adapted to do so. However, as our analysis of existing agricultural policy developments shows, not much adaptation goals for the agricultural sector are formulated (yet).

The law uses spatial planning as an instrument to reach agricultural and nature goals. Even though no specific adaptation goals are formulated for the agricultural sector, this instrument might fit the spatial planning approach to adaptation that is dominant in the Netherlands.

The Land Consolidation Act and the Reconstruction Act were developed primarily to solve problems in the agricultural domain. However, over the years, the instrument of land consolidation is applied in a much broader way, for example, also to solve issues in the nature and water sector. Because it relies on voluntary cooperation of stakeholders, it is a multilevel, multi actor and multi sector instrument.

As a process instrument, it could be easily connected to the new WRO (see spatial planning chapter), and by doing this, agricultural goals are subsumed into the influence of spatial planning. When adaptation goals are formulated for the agricultural sector, this instrument could be important in Dutch adaptation to climate change.

#### **4.3.2 Investment budget Rural Areas (ILG)**

*What kind of document is it: about what, by whom, for whom?*

The Investment budget Rural Areas (Investeringsbudget Landelijk Gebied: ILG) is a new financing system, introduced in 2007 together with the WILG (see 4.3.1). Through this financial system, the seven-year agreements between provinces and national governments that are the result of the multi-year program are financed. The budget is made available to provincial governments to support their contracted objectives in relation to the national goals established in the multi-year program. The budget is given for a time-span of seven years, without specifying how much money is to be used for what objectives. Provinces should use the budget according to their own strategy. When, after seven years, provinces have not been able to live up to their agreements, the province can be penalized, amongst others, through withdrawal of ILG funds.

*How is adaptation to climate change taken into account?*

Climate change is not directly targeted by the ILG. The budgets are mainly directed towards nature and agricultural improvements. Therefore, it can be expected that this budget will support adaptation to climate change only when it is connected to nature or agricultural goals. These goals are formulated in the multi-year programs and contracts between national and provincial governments. To this date, climate change does not receive much attention in those programs and contracts. However, this might change in the future.

*What conclusions on institutions and governance can be drawn from the document?*

Provinces receive the budget, and they are responsible for living up to the agreed objectives in the contracts. Provincial governments are thus held accountable for meeting their objectives and also have room to look for and implement their own solutions.

*What is especially relevant to our content analysis?*

This instrument financially backs up the WILG. By connecting management failures to a possible withdrawal of this budget, the instrument also provides for accountability.

However, as with the WILG, as long as there are no clear adaptation goals formulated for the nature and agricultural sector, the strength of both instruments will probably not be used for adaptation aims.

### **4.3.3 Subsidy system for Nature and Landscape Management**

*What kind of document is it: about what, by whom, for whom?*

This subsidy system (Subsidiestelsel Natuur en Landschapsbeheer: SNL) is a new financial system adopted in 2010 to encourage nature management on agricultural grounds. Managers of agricultural grounds (public as well as private) can opt for financial support when they contribute to improving nature or landscape aspects.

This financial scheme is the successor of the national Program Management ('Programma Beheer'). This program consisted of three different arrangements, two provincial (one for nature management: PSN; and one for agricultural nature management: PSAN) subsidies and one subsidy specifically for private management of natural and agricultural grounds. These separate arrangements were experienced as very difficult and bureaucratic, and therefore, the program was revised.

Moreover, with the introduction of the WILG, responsibilities for achieving agricultural and nature (i.e. rural) goals is decentralized to provincial authorities. The old financial arrangements are subsumed into the ILG budget and the new subsidy scheme is accordingly managed through the ILG structure.

Part of the 'old' PSAN subsidy includes co-financing by the European Union. Therefore, the EU puts extra requirements to the goals of SNL.

*How is adaptation to climate change taken into account?*

In a visionary document on the revision of the Programma Beheer, the new scheme is expected to take into account long-term developments, including climate change.

*What conclusions on institutions and governance can be drawn from the document?*

In the visionary document reasons for restructuring the Programma Beheer are that financial measures should be targeted more to stimulate an integrated area approach where multiple goals are achieved at the same time and where there is less steering on details. Actually, this is in accordance with the vision lying behind the WILG and ILG: the national government sets the limits by formulating end goals, and the provinces should decide on how to achieve those end goals.

The basis for financial support from SNL is the provincial multi-year programs, specifying the provincial goals for nature and agriculture. Based on these programs, provincial governments draw a 'nature management plan' (natuurbeheerplan) specifying different

natural management zones, and also specifying which management zones may receive financial support under what conditions.

*What is especially relevant to our content analysis?*

Agricultural nature management as an institution has quite a long history in the Netherlands. In most Natural Balances the institution is criticized for allowing farmers to only select a minimum package of nature management, hardly benefiting nature goals. The institution is now calibrated with the WILG, exposing it to influences of spatial planning. On the one hand this might not encourage farmers to do more, however, it might provide provincial governments with more opportunities for integral nature management. However, up to this point, climate change seems to play no part in agricultural and nature management.

Furthermore, compared to other nature instruments, this institution allows for a flexible, integral and local area approach. While this is positive for increasing the adaptive capacity of the nature sector on most aspects, it might run into difficulties in implementing the more rigid national, European and international policies on nature.

#### **4.3.4 Company premium**

*What kind of document is it: about what, by whom, for whom?*

Since 2006, income support for farmers is disconnected from production. Agrarian entrepreneurs now receive a company premium<sup>20</sup>. This is the result of changes in EU Common Agricultural Policy (CAP, see Chapter 2).

*How is (adaptation to) climate change addressed in the document?*

To be able to receive a company premium, farmers are required to meet certain conditions. These conditions fall into four categories: environment; human, animal and plant health; animal well-being; and good agricultural and environmental conditions. Within every category, specific requirements are identified<sup>21</sup> and all these requirements are linked to existing European regulations.

Almost all environmental requirements are related to securing the quality of the environment, for example, related to nitrate, fertilization, silt, or waste waters. There are also some conditions directed at maintaining habitats, and this is translated into requirements against tree felling.

While some of these requirements could be related to climate change, climate change is explicitly addressed through these regulations.

*What conclusions on institutions and governance can be drawn from the document?*

As the company premium is paid from EU budgets, the EU has identified the minimum conditions and requirements in their CAP. The Dutch ministry of LNV is responsible for

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<sup>20</sup> more information on company premiums can be found at:

[http://www.hetInvloket.nl/portal/page?\\_pageid=122,1780581&\\_dad=portal&\\_schema=PORTAL](http://www.hetInvloket.nl/portal/page?_pageid=122,1780581&_dad=portal&_schema=PORTAL)

<sup>21</sup> All conditions for 2010 can be found at:

[http://www.hetInvloket.nl/portal/page?\\_pageid=122,1780509&\\_dad=portal&\\_schema=PORTAL&p\\_file\\_id=47784](http://www.hetInvloket.nl/portal/page?_pageid=122,1780509&_dad=portal&_schema=PORTAL&p_file_id=47784)

making sure those conditions are met by farmers ‘on the ground’, and they do this by carrying out random checks. In some instances, the Netherlands has decided to formulate more strict conditions for farmers to receive company premium to deal with specific domestic problems.

*What is especially relevant to our content analysis?*

This is a financial instrument. Again, this instrument does not address climate change. This is a result of a lack of actual climate change regulations at EU level, as the requirements for farmers activities directly stem from EU policies. Because Dutch agriculture is heavily influenced by EU regulations, taking climate change into account in the Dutch agricultural sector is also dependent on EU actions in this field.

#### 4.3.5 Other relevant Dutch agricultural subsidy schemes

Institutions for agriculture in the Netherlands include many different agricultural funds to support farmers. Most are not addressed to climate change. In the table below we have listed a selection of agricultural subsidy schemes and explained how they could be relevant under climate change.

Table 4.1: Selection of Dutch agricultural subsidy scheme

<i>Title of subsidy scheme</i>	<i>Content of subsidy scheme</i>	<i>Relevance for addressing climate change</i>
Subsidy for nuts	<p>This fund is made available to managers of almond, hazelnut or walnut orchards and is part of the EU CAP. This means that specific rules are developed at EU level and CAP conditions apply.</p> <p>The Netherlands has established a ‘national domain’ (nationaal areaal) of 100 hectares for nut production, meaning that funds will be provided for a maximum of 100 hectares, i.e. there is a subsidy ceiling. When all applications add up to an area larger than 100 hectares, the money is equally divided among the applicants.</p>	Climate change could increase the suitability of Dutch agricultural grounds for nut production, and this might call for a raise of the subsidy ceiling.
Investments in integral sustainable cattle farms	Cattle breeders that want to reform their ranches to increase the well-being of their animals can apply for a subsidy when they go beyond official government requirements for animal well-being. They should furthermore take account of social preconditions in the areas of environment, animal health, labour conditions and economic feasibility.	Is might be necessary to specifically address increasing the adaptive capacity to climate change in the preconditions.

Innovation projects	Dairy, pig, rabbit and poultry cattle breeders can qualify for subsidy when they undertake innovation projects that improve their competitive position.	Improving a breeder's competitive position will increasingly involve the ability to cope with changing weather patterns
Effect related measures in forest and nature areas.	Owners, or long lease holders with a minimum of 25 years, of forest and nature land can be subsidized for measures that counteract acidification, eutrophication or droughts.	This subsidy scheme might be important to promote or increase to cope with climate change in the agricultural sector
Compensation for problem areas	<p>This is a compensation for managers of agricultural grounds who experience negative consequences of physical conditions, for example, because of alleviation/relief or high groundwater levels. These conditions impact their competitive position, however, these conditions are often important from a nature and landscape point of view.</p> <p>This subsidy is available to managers in areas that are established at the provincial level and approved by the EU.</p> <p>Examples are the western peat meadow areas because of the high groundwater levels, and the complex pattern of land allotments in the '<i>Nationaal Landschap Zuid-Limburg</i>'.</p>	High water levels are expected to occur more often because of climate change, and hence, this subsidy opportunity might be sought more often by managers.
Compensation for the shelter of geese and widgeons	<p>For agricultural grounds that shelter geese and widgeons, a subsidy can be requested for agrarian nature management as part of the old PSAN which is now integrated into the ILG budget. This compensation is given for offering peace, room and food to geese and widgeons.</p> <p>Budgets are made available by provinces and should be approved by the EU.</p>	???

### 4.3.6 Dutch Agricultural damage compensation schemes

Dutch institutions on agriculture also include damage compensation schemes for agriculture. Chapter 3 covers the Law for a contribution to damage in case of disasters and accidents (see 3.3.5); this damage compensation scheme is, amongst others, available to farmers. The table below lists Dutch damage compensation schemes specifically addressed to farmers.

Table 4.2 Dutch damage compensation schemes for farmers

<i>Title of damage compensation scheme</i>	<i>Content</i>	<i>Climate relevance</i>
Contribution to damage from fauna	Protected indigenous animal species can cause damage to agricultural crops, forests and fish farms in several ways. Often this damage can be prevented or counteracted. If all reasonable preventive and counteracting measures have been taken, but one still suffers from damage, a user of land can submit a request for a contribution to damage compensation from this scheme.	The list of endangered indigenous animal species is not flexible and with changing climate conditions, species that are now listed as indigenous might occur more frequently, and it might be necessary to put new protected species on this list to ensure their protection.
Public Crop damage schemes	Crop damage schemes are linked to specific, often climate related, events like heavy rainfall or extreme frost. After such an event, the ministry of BZ can decide to start a procedure for crop damage compensation.  To qualify for damage compensation, a farmer has to meet several conditions, for example, he/she should have suffered 30% damage or more, or be insured against damage as a result of heavy rainfall. Damage is not compensated 100%, but for example, for 70 or 75% and payment may take years.	Crop damage as well as damaging events will probably rise as a result of climate change. This instrument might be more often asked for in this context.
New Agrarian Damage Insurance Regulation	The regulation 'New Agrarian Damage Insurance' is directed at those insurers that want to offer insurance against crop damage – caused by extreme rainfall or ex-	This regulation is a reaction to increasing crop damages as a re-

	<p>treme frost – in or outside the Netherlands. With this regulation, the Dutch governments wants to shift these kinds of insurances into the domain of the market.</p> <p>The regulation allows insurers to apply for a ‘guarantee’ subsidy, meaning that the government will guarantee insurance payments to the insured when the total damage rises above a certain amount.</p>	<p>sult of climate change. The Dutch government is looking for market opportunities to cope with rising claims for crop damage compensation.</p>
<p>Regulation for a contribution to premium for rain damage compensation</p>	<p>This regulation is initiated privately, by a collection of agricultural companies, and managed through the government agency <i>Dienst Regelingen</i> and paid for by the Dutch government.</p> <p>The regulation aims to support farmers who have taken out a rain damage insurance in 2007. In 2007, insurers had to pay an exceptionally high amount to damage compensation as a result of extreme rainfall. To recover from this financial shock, insurers found themselves forced to retroactively issue an additional levy on 2007 insurance premiums.</p> <p>This regulation aims to reduce the financial burden on farmers, and compensates a part of the additional levy costs.</p>	<p>Up to now, this regulation was applied only in this one instance. However, as climate change may exacerbate rain damage, these kind of regulations may be needed on a more frequent basis.</p>

#### 4.3.7 Fertilizer law

*What kind of document is it: about what, by whom, for whom?*

On 1 January 2006 the new fertilizer law entered into force. This new law was necessary because the European Court was of the opinion that the old fertilizing policies in the Netherlands were inadequate in the way that they incorporated the goals in the European Nitrate Directive. Also domestically there was a need to change fertilizer laws to work on national and European nature aims. This law is applicable to manure of all animals that are kept for economic purposes.

This law puts limits to the total amount of manure, nitrogen and phosphate that a company may emit on average per hectare. To this end, several norms for using manure

and/or artificial fertilizer have been developed.<sup>22</sup> Those norms may differ for per crops and type of soil.

Also, the law creates rules for the use of fertilizers. For example, for manure use, different periods are selected, depending on the type of measure, the soil and whether the ground is used for cultivation or as grassland. And there are additional conditions

Furthermore, the law establishes rules to prevent the movement of fertilizers. These, for example, concern the storage capacity for fertilizers, the transport of fertilizers when storage capacity is inadequate, and the monitoring and reporting of these transports.

*How is adaptation to climate change taken into account?*

Climate change is not addressed in this law. However, it could be relevant for the extension of the growing season. Furthermore, the chemical conditions in soils and the quality of water might change because of high summer temperatures. This might call for an adjustment of some of the norms.

*What conclusions on institutions and governance can be drawn from the document?*

Generally, the law is very strict and inflexible: all norms relate to numeric prescriptions and all emissions, usages and transportations should be reported.

The numeric prescriptions themselves are a bit more flexible as they allow in some instances for a liberalization of a norm, however, this brings with it a lot of extra paper work. Also, the government is allowed to adjust the norms when circumstances ask. This law has been evaluated in 2002, 2004 and 2007.

*What is especially relevant to our content analysis?*

This law puts a lot of restrictions on farmers' use of fertilizers. It does not take climate change into account, however, some norms might also be relevant under changing climatic conditions. The instrument should be open to an adjustment of norms when climate conditions necessitate this.

#### **4.3.8 Agricultural Land (Transactions) Act (WAG)**

*What kind of document is it: about what, by whom, for whom?*

The Agricultural Land (Transactions) Act (Wet Agrarisch Grondverkeer: WAG<sup>23</sup>) is an instrument of the ministry of LNV to regulate agricultural land prices. It aims to ensure that agricultural land is acquired on a voluntary basis without distorting the market in agricultural or other grounds.

*How is (adaptation to) climate change addressed in the document?*

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<sup>22</sup> Those norms are submitted in tables that can be found in the Dienst Regelingen (2008) Brochure Mestbeleid 2008-2009, accessible at:

[http://www.hetInVloket.nl/portal/page?\\_pageid=122,1780509&\\_dad=portal&\\_schema=PORTAL&p\\_file\\_id=30906](http://www.hetInVloket.nl/portal/page?_pageid=122,1780509&_dad=portal&_schema=PORTAL&p_file_id=30906)

<sup>23</sup> The text of the law can be found at: [http://www.st-ab.nl/wetten/0387\\_Wet\\_agrarisch\\_grondverkeer\\_Wag.htm](http://www.st-ab.nl/wetten/0387_Wet_agrarisch_grondverkeer_Wag.htm)

Land acquisition is important for the achievement of a large number of national goals that belong to the domain of LNV, for example, those laid down in the multi-year program. More specifically, grounds need to be bought for the realization of the NEN, to keep up with the scaling up of agricultural production, and to provide room for recreational activities.

Prices of agricultural grounds might be affected by climate change; some places might become more attractive for cultivation whereas others might lose their attraction as agricultural grounds. However, in the WAG, no explicit account is taken of this.

*What conclusions on institutions and governance can be drawn from the document?*

With the WILG and the ILG, many responsibilities for acquiring new land is decentralized to provinces, as they are the main bodies responsible for achieving the national goals. Responsibility for living up to the WAG has therefore also partly shifted to provinces.

*What is especially relevant to our content analysis?*

Prices of agricultural lands might change. Policies or national goals that require land acquisition should take this into account.

## 5. The Nature Sector

### 5.1 Introduction

Many Dutch policies in the nature and agricultural sector are interlinked in 'rural area policies'. The most important policy documents on rural areas have been dealt with in the previous chapter. These are: Agenda for a Living Countryside, Multi-year program for a Living Countryside, Dutch Rural Development Policy 2007-2013, Rural Areas Development Act (WILG), Investment Budget for Rural Areas (ILG), and Subsidy scheme for Rural Area Management. This chapter will not focus on these documents but only on the remaining nature related documents.

### 5.2 Policy Development

#### 5.2.1 Nature for People, People for Nature

*What kind of document is it: about what, by whom, for whom?*

This document was adopted by Dutch parliament in July 2000. It is the policy framework for nature, forests, landscapes and biodiversity management in the Netherlands from 2000 to 2010. The policy incorporates existing policies like the NEN, but it also highlights two new aspects: Trying to increase public support for nature management and emphasizing people's experiences with nature; and increased attention for the international importance and uniqueness of Dutch nature.

The policy consists of two parts; one strategic note and a policy program. The strategic note sets out the main structure of Dutch nature policy. The policy program elaborates on this structure and identifies five specific areas for which it develops more concrete objectives, measures and means.

*How is climate change adaptation taken into account?*

Climate change is mentioned for the first time on page 10. The policy 'uses' climate change above all as an opportunity to connect the nature sector to development in the water sector, where the general line of thought is to create more space for water – which is of course also beneficial to nature. Nature is seen as contributing to water management objectives for adapting to climate change, through, for example, natural purification that will improve water quality.

Where climate change is directly related to Dutch nature, the consequences of climate change are seen as worrying, and money for research into the exact consequences will be made available through this policy.

*What conclusions on institutions and governance can be drawn from the document?*

This policy builds a framework around existing institutions:

- Spatial protection of the NEN;
- Acquisition, planning and management of NEN areas;

- Protection of flora and fauna following international, European and national regulations;
- Financial incentives for private nature management, including agrarian nature management; and
- Education on nature.

A new institution established through this policy is the ‘National Landscape’; an attempt to better integrate rural functions in people’s positive experiences. Also new, is a greening of the Dutch tax system.

The policy sets out a clear division of responsibilities for nature management. To this end, it lists different tasks of different public but also private parties. The policy maintains that the national government is responsible for setting the preconditions for use of natural assets, but it also calls on private parties to live up to their social responsibility. It proposes to close agreements with different private sectors on the implementation of nature policy.

*What is especially relevant to our content analysis?*

Climate change is specifically addressed in this comparatively older policy note. The consequences of climate change on nature in that time were largely unknown, and therefore, they rely heavily on the water sector for offering adaptation strategies.

### **5.2.2 Spatial Plan for the Rural Area and its Key Planning Decision**

*What kind of document is it: about what, by whom, for whom?*

The 1995 Spatial Plan for the Rural Area (Structuurschema Groene Ruimte: SGR) and its Key Planning Decision outline Dutch policy for the development of nature. In this plan, the National Ecological Network (NEN) is given shape.

Currently, this plan is being revised into a Second Spatial Plan for the Rural Area (SGR2), that will describe the basics for nature policy until 2015. In 2001 the Spatial Plan was adopted by parliament, making way for recreational facilities in close vicinity to (urban) living environments, agriculture as managers of rural areas, an integrated area approach for nature management connecting nature to water and agriculture. The Key Planning Decision associated with the SGR2 is integrated into the Fifth Nota Ruimte.

*How is (adaptation to) climate change taken into account?*

Climate change is only mentioned twice in the document. In the SGR2, water is seen as a structuring principle and it refers to WB21 policy to cope with the impacts of climate change, also in the nature sector. However, this is related to actions of the agricultural sector. For example, agriculture can contribute to water retention to prevent water nuisance. As this might cause agricultural grounds to become too wet for competitive agricultural production, extensive land use or crop changes might be necessary.

*What conclusions on institutions and governance can be drawn from the document?*

In case of a Key Planning Decision, the national government ‘expects’ lower administrative levels (provinces, water boards, municipalities) to integrate the content of the deci-

sion into their policies. However, a Key Planning Decision is in principle not obligatory – although parts of such a decision can be made binding, like the NEN from the SGR1).

SGR2 is closely connected to spatial planning policy (*Nota Ruimte*) and water policy (WB21).

SGR2 aims to stimulate the involvement of the agricultural sector in nature management, and it tries to increase the participation of farmers in nature management.

*What is especially relevant to our content analysis?*

The SGR1 and SGR2 have major spatial consequences. This is acknowledged, as the last plan and decision are subsumed into the spatial planning policy *Nota Ruimte*. The SGR1 has had major spatial impacts through its NEN.

Relevance to climate change is little however, not many notions on climate change adaptation are incorporated in this policy; instead solutions are sought in the spatial planning and water sector. As SGR's are influential policy documents, there is the opportunity to include more adaptation strategies for nature in succeeding documents.

## 5.3 Laws and instruments

### 5.3.1 National Ecological Network (NEN)

*What kind of document is it: about what, by whom, for whom?*

The concept of 'National Ecological Network' or NEN<sup>24</sup> (Ecologische Hoofdstructuur: EHS) was introduced in the 1990 Nature Policy Plan, a policy document of the Ministry of LNV. In preceding years, the Netherlands was increasingly built-up, 'cutting up' Dutch natural areas into little pieces as a result of the building of new settlements, roads and other infrastructure. In these years, awareness of the problems this cut-up nature poses to animal and plant species grew. Species were confined to small natural areas for their existence and reproduction and biodiversity was challenged.

The NEN aims to connect the cut-up natural areas through ecological zones linking one natural area with another. In those zones, nature will be developed and the idea is that species (both animal and plant) could 'hop over' from one natural area to another through these ecological zones. This way, species are preserved and biodiversity is maintained. To this end, the NEN contains a map that demarcates natural areas and ecological zones for the Netherlands as a whole. The deadline for realization of the NEN is 2018.

Since the 1990's, the concept of NEN has been reaffirmed, expanded, made more concrete and extended with new aspects at different times, for example in the SGR1 (1995, see...), the policy note Nature for People, People for Nature (2000, see...), The National Spatial Strategy (2004, see...) and the Agenda for a Living Countryside (2004, see).

*How is (adaptation to) climate change addressed in the document?*

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<sup>24</sup> for more information on the NEN, see

[http://www.minlnv.nl/portal/page?\\_pageid=116.1640949&\\_dad=portal&\\_schema=PORTAL&p\\_document\\_id=110237&p\\_node\\_id=5622621&p\\_mode=](http://www.minlnv.nl/portal/page?_pageid=116.1640949&_dad=portal&_schema=PORTAL&p_document_id=110237&p_node_id=5622621&p_mode=)

The main aim of the NEN is to increase its coping capacity in the event of crises. Dutch nature should be able to restore itself from negative environmental pressures and maintain its balance. In the 1990s, this idea was not yet connected to the pressures of climate change, although problems like droughts are already mentioned.

During the years, there have been several studies on how the NEN could contribute to coping with the impacts of climate change on Dutch nature. The Routeplanner deals with the NEN in relation to climate change. Also, the Alterra projects 'Adaptation of the NEN' and 'Coping with the impacts of climate change: Adaptation of the integrated area approach. In one study, Vos et al. (2007) conclude that existing policy instruments, like the NEN, take insufficient account of climate changes, hindering the achievement of policy objective for nature in the Netherlands.

Climate change is specifically addressed in the policy concept of 'Robust Ecological Corridors' which is linked to the NEN, and is dealt with separately in the next section.

*What conclusions on institutions and governance can be drawn from the document?*

For the realization of the NEN, the Dutch government initiated two main strategies: government acquisition of land and nature management by private owners or long-leasers of agricultural land (variety in solutions).

The realization of the NEN is a Dutch national goal specified in the multi-year program. As a result of the WILG, the responsibility for achieving this goal in practice, is decentralized to the provincial level.

NEN is funded from public resources, mostly through the ILG. The provinces can directly buy up the needed land, but they also decide on the level of financing to agrarian nature management (resources). When NEN areas are bought up, or selected as nature area on farmland, the area should be planned and managed to guarantee its continued existence. Management is for a large part delegated to environmental organizations; non-government organizations receive funding from ILG, farmers receive money from a separate arrangement within ILG and public management bodies receive no financing.

NEN areas are managed using the 'no-unless' principle; new spatial developments are not allowed unless there are no alternatives and the development is in the national interest. In these cases, the impacts the developments have on nature should be compensated. To prevent multiple interpretations of this principle, the ministry of LNV published a document in 2007 containing 'rules of the NEN'. In this document, the concepts of 'no-unless', 'compensation rule', 'redemarcating the NEN' and 'the NEN balance approach' were elaborated upon. Those rules were collaboratively developed by several government and non-governmental managing agencies (collaborative leadership).

- No-unless; new spatial developments are not allowed unless there are no alternatives and the development is of national interest.
- Compensation rule; if spatial developments are allowed, negative impacts on nature should be mitigated and remaining damage should be compensated
- Redemarcating the NEN; allows changing the borders of NEN areas on a small scale when this has a positive effect on quality or quantity. When it happens for other reasons, the no-unless principle applies.

- NEN balance approach; a development approach allowing an integrated approach to NEN areas combining different qualitative or quantitative aims.

There is good monitoring of results (accountability, responsiveness): the total amount of hectares needed for realization is exactly known, and every acquired or managed piece of land is reported so that at any time, it can be shown where and how much land still needs to be transformed into nature. Also, the implementation process is at times evaluated. For example, an evaluation of the progress of the NEN at the end of 2007 (Directie Natuur, 2008) showed that government land acquisition in 2008 is in line with planning, however, that agrarian nature management suffers from difficulties; nature on agricultural lands is not developing as rapidly as it should. An important government advisory council (Raad voor het Landelijk Gebied 2008) evaluated NEN, and advised using the instrument of enforced land acquisition to realize the NEN – which they think is crucial to increasing the adaptive capacity for climate change of Dutch nature - because this way farmers can be compensated for their loss of productivity.

About 45% of the land needed for NEN is also assigned as a Natura2000 area (see...). Goals overlap, and with the realization of the NEN, the Netherlands is also complying with its Natura2000 obligations. The ministry of LNV designates the Natura2000 areas officially, and the management plans are then formulated in collaboration with different (also local) stakeholders (multi-level).

Next to quantitative aims, the NEN also comes with qualitative aims. These are translated into provincial nature goal maps (natuurdoeltypenkaarten), which are currently under revision. This process shows little collaborative leadership)

*What is especially relevant to our content analysis?*

The NEN is valued for its contribution to adapting the Dutch nature sector to climate change, because it increases the coping capacity of nature. Climate change is used as an argument to accelerate the implementation of the NEN. Furthermore, climate buffers are added to the NEN as a policy instrument to increase these positive characteristics.

The instrument itself is top-down and inflexible, because the borders of designated areas are fixed on paper and much is decided on by national or provincial governments. At the same time, this does generate substantial authority and funds, good monitoring processes, and provides a clear and visible plan for people to act on. In the management of the areas, the instrument allows for more flexibility through multi-level drafted management plans and the no-unless principle, allowing for more variety. Maybe the combinations of a well-known instrument with public involvement in the management created the room for the extensions and additions like the Robust Ecological Corridors and the National Climate Buffers.

### **5.3.2 Robust Ecological Corridors and Natural Climate Buffers**

*What kind of document is it: about what, by whom, for whom?*

Both Robust Ecological Corridors and Natural Climate Buffers are additions to the NEN and they are developed to deal with the impacts of climate change on Dutch nature.

The concept of Robust Ecological Corridors (*Robuuste Verbindingen*) was introduced in the policy plan Nature for People, People for Nature'. Robust Ecological Corridors aim

to connect large-scale sand and marsh areas in the Netherlands. While the ecological zones in the NEN aim to make connections within natural areas, Robust Ecological Corridors aim to make connections between natural areas. In total, there are 13 corridors added to the NEN<sup>25</sup>.

The concept of Natural Climate Buffers (*Klimaatbuffers*) was introduced by a collaboration of seven nature conservation organizations who actively support and use the concept<sup>26</sup> and it is being researched in several government funded research programmes. It is not (yet) officially laid down in policy, however, the ministry of VROM has reserved funds for the development of climate buffers. Climate buffers are zones where nature is developed specifically to absorb climate shocks.

*How is (adaptation to) climate change addressed in the document?*

The reasons for introducing the corridors is to increase the coping capacity of Dutch nature with large-scale risks, like climate change. Through the corridors, species (animal and plant) should be provided with opportunities to ‘migrate alongside’ climate changes.

Climate buffers should make the Netherlands more resilient to the impacts of climate change, by absorbing climate shocks, like extreme droughts or rainfall. Therefore, climate buffers are thought to contribute not only to prepare Dutch nature to climate change, but also Dutch infrastructure, society etc.

*What conclusions on institutions and governance can be drawn from the document?*

The Robust Ecological Corridors are flexible to the extent that they allow other types of activities next to nature conservation, like leisure activities and water retention, however, their primary function is nature (variety). This is contrary to NEN designated areas whose sole purpose is the establishment and conservation of nature. The concept is incorporated in the National Spatial Strategy, that envisions the development of 12 corridors<sup>27</sup> in specified areas, although the exact boundaries are set at the provincial level (plan, no variety in where the corridors will be placed). Robust Ecological Corridors follow the same institutional approach as the NEN.

Climate buffers have not found a way into an official policy document (authority/legitimacy), however the concept is increasingly supported by social and political actors. They are flexible in usage, as the starting point is that they should combine as many functions as possible, for example water retention, nature management and leisure and nature conservation is not the primary aim. Because they are not laid down in policy, their borders are not fixed and there are no official preconditions for usage. Several pilot projects have been initiated by nature conservation organizations (no plan allows for variety and provides room for autonomous actions).

*What is especially relevant to our content analysis?*

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<sup>25</sup> a map depicting those corridors can be downloaded at:

[http://www.minlnv.nl/portal/page?\\_pageid=116,1640321&\\_dad=portal&\\_schema=PORTAL&p\\_file\\_id=15494](http://www.minlnv.nl/portal/page?_pageid=116,1640321&_dad=portal&_schema=PORTAL&p_file_id=15494)

<sup>26</sup> More information on climate buffers can be found at: <http://www.klimaatbuffers.nl/eng/>

<sup>27</sup> See Nota Ruimte at: <http://www2.minvrom.nl/notaruimte/0206060500.html>

While at first, the NEN was an instrument for nature and biodiversity management, now the instrument is increasingly used (or rephrased) as a means to adapt nature to climate change. Extensions like Robust Ecological Corridors and Climate Buffers are newly developed aspects that in different ways could increase the adaptive capacity of Dutch nature management.

### 5.3.3 Nature Conservation Law

*What kind of document is it: about what, by whom, for whom?*

In 1967, the first Nature Conservation Law was introduced in the Netherlands. This law enabled the protection of natural areas and species. With the rise of international and European regulations on environment, the law became outdated. Therefore, in 1998, a new Nature Conservation Law was initiated, only focusing on area protection. Protection of species is regulated through the Flora and Fauna Act.

The law aims to conserve Dutch nature areas. This includes Natura 2000 areas, protected National Nature Monuments, and Wetlands.

*How is (adaptation to) climate change addressed in the document?*

Climate change is no explicit part of the law.

*What conclusions on institutions and governance can be drawn from the document?*

The Nature Conservation Law of 1998 provides the legal basis for the Nature Policy Plan 2000; the protection of areas and landscapes, permissions and compensation rules, supervision and appeal. Furthermore, the law specifies that with an interval of maximum eight years, nature policy plans should be developed (legitimacy/authority).

The focus on protection and conservation of existing areas and species could hamper double loop learning and leaves little room for flexible nature management. The law includes obligations on evaluation and reporting and allows for a revision of environmental policy plans based on evaluations (learning and accountability).

The term 'values' is important in the law; it refers to elements of nature that humans value enough to conserve. Apart from the ministries of the LNV, VROM and V&W, different social organizations and actors are involved in the decision making process of which natural elements are 'valuable enough', based on their stake in the element of nature under discussion (collaborative leadership, responsiveness).

Important instruments in the law are:

- Visionary plan Nature and Landscape (*Structuurvisie Natuur en Landschap*): This should guarantee the translation of the nature policy plan into spatial planning.
- Designation decisions (*Aanwijzingsbesluiten*): These decisions are very important for Natura 2000 areas because it provides the basis for developing a management plan, the assessment of projects and activities within those areas and issuing permits. The designation decisions are given shape through a map, specifying demarcations of the area and its functions (top-down approach). As the bor-

ders are fixed, this limits autonomous adaptation of those species to climate change and offers no room for species to move beyond the borders of an area.

- Preservation goals (*Instandhoudingsdoelstellingen*): Preservation goals describe the species and habitats that should be preserved, i.e. which should be equal or growing in number. Once decisions on these goals are made, they can only be changed by the ministry of VROM (authority, top-down).
- Management plans (*Beheerplannen*): Natura2000 prescribes that for every Natura 2000 area, a management plan should be formulated (see...). This management plan is drafted in cooperation with different actors, including government actors from the local to the national level, land owners, land users and other stakeholders. This is a collaborative, multilevel and multiactor approach to solutions.
- Permits (*vergunningverlening*): Permits for actions that could have a distorting effect on species or habitats are needed. The consequences of such actions should be assessed and it should be demonstrated that there are no detrimental effects on nature, before a permit may be issued. In some cases, damaging projects are allowed when activities serve the public good and when damage is compensated, providing central authorities with much control and leaving a little room for flexibility.

The law incorporates international and European regulations, including the Natura2000 and the treaty of Ramsar on Wetlands (legitimacy). For example, in the 2005 *Natura 2000 Contourennotitie*, the Ministry of LNV explains how it incorporates Natura2000 obligations into Dutch policies. The Nature Conservation Law provides the basis for issuing permits for human activities in Natura2000 areas.

The council of ministers decided in favor of a new Nature Conservation Law, integrating the law of 1998, the Flora and Fauna Act and the Forestry Act (see below). Further steps on this issue will be undertaken in the future.

*What is especially relevant to our content analysis?*

Even in this relatively old legal instrument, spatial planning is seen – at least partly – as a means to realize nature management policies.

On the one hand, the law provides a lot of top-down authority to government bodies, they select areas and decide through permits on the activities that are allowed in those areas, restricting room for autonomous adaptation and change and flexibility. On the other hand, the choice for protected areas is partly based on a collaborative search for important Dutch nature values, and also the management plans for protected areas are the result of collaborative quests.

#### 5.3.4 Flora and Fauna Act

The Flora and Fauna Act<sup>28</sup> entered into force on 1 April 2002. This law further develops and implements the EU regulations (Birds and Habitat Directive) and international

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<sup>28</sup> text of the law can be found at: [http://www.st-ab.nl/wetten/0087\\_Flora-en\\_faunawet.htm](http://www.st-ab.nl/wetten/0087_Flora-en_faunawet.htm)

(CITES agreement) for the protection of plant and animal species. The law aims to protect and preserve wild plant and animal species, and for this purpose lists several species that should be protected. It specifies rules for nature management, damage control, hunting, trade, ownership and other human activities that could potentially do harm to protected species.

*How is (adaptation to) climate change addressed in the document?*

Climate changes is not mentioned in the law.

*What conclusions on institutions and governance can be drawn from the document?*

The basic principle used in the law is ‘no-unless’; damaging activities are principally forbidden, unless there is no alternative and the activities serve the public interest.

The Act contains several prohibitions ensuring the protection of wild species, for example concerning the harvesting of plants, the hunting or capturing of animals, and the trade in protected species or species-products. As the Act also protects the direct living environments of protected species (holes, nesting places, etc.), it allows provinces to designate a certain place as protected, and to prohibit any human activities there (authority).

The list of protected species is decided on by the Minister of LNV. No routine is developed for this. Until 2010, updating of this list has been a reaction to new international regulations. Climate change may provide new incentives to update the list, however, no mechanism is in place to evaluate this (no double loop learning).

Not many individuals and organizations seem to influence the decision on protected species of the Minister of LNV. Designating protected environments involve at least the owner of that environment, and there is a public consultation procedure (no multiactor/level/sector, no multiple problem frames, no collaborative leadership).

The law creates a Fauna fund, used to combat damage to wild species and for compensation of damage that results anyway. The management of the Fauna fund advises the Ministry of LNV, stimulates scientific research and education on nature protection and informs the public (learning, resources).

Last, the law prescribes a duty of care for all animals, not only the protected animals, meaning that those animals may not be killed, and in the cases that this is inevitable, that suffering should be limited as much as possible.

*What is especially relevant to our content analysis?*

The list of protected species is based on normative assumptions of a few specialists. There is not much room for public involvement, and the whole institution does not show much flexibility. However, the law does provide government bodies with a lot of authority; decisions taken backed by this law are very powerful.

The law is not yet considered in the context of climate change. The law could contribute to adaptation of Dutch nature as climatic changes might create favorable conditions for some species but also reduce the living space of other species. Up to now, the institution shows that it can adapt to international governance decisions on protected species. To incorporate climate change considerations in this law, however, asks for double loop learning, which might be difficult as the institution is quite top-down and unilaterally man-

aged by LNV. When climate change is taken seriously at this ministry, or in international regulations, it might spill-over to this law.

### 5.3.5 Forestry Act 1959

The Forestry Act<sup>29</sup> has the primary goal to protect forests in the Netherlands. In short, the Forestry Act prescribes that existing forestry should continue to be forestry. Where forests are felled, they should be replanted. If it is not possible to do this, then it should be done at another location (compensation). Only where the public good is significantly served, the Forestry Act diverges from these rules.

The law only applies to forest areas larger than 10 acres or, where it concerns an accumulation – only when there are 20 or more trees. Some tree-species do not fall under the law’s jurisdiction as well as trees planted in a row, for example, alongside a road.

*How is (adaptation to) climate change addressed in the document?*

Climate change is not specifically addressed in the law.

*What conclusions on institutions and governance can be drawn from the document?*

The Forestry Act has three important built-in instruments:

1. Reporting obligation (*Meldingsplicht*): Before a forest plot is felled, people should report on their planned cutting activity, specifying how many acres and trees will be felled (monitoring, reporting), mainly to see to replanting obligations.
2. Replanting obligation (*Herplantplicht*): Within three years of felling, the forests should be replanted. This timeframe is also applicable to situations where forest is lost because of fire or diseases. Provincial authorities keep a sharp eye on replanting obligations, and when replanting obligations are neglected, high fines are used (accountability). When a forest site shifts from owner, the replanting obligation also shifts.
3. Felling prohibition (*Kapverbod*): In exceptional circumstances, the Minister of LNV can issue a felling prohibition when nature and/or landscape are severely threatened by the planned felling.
4. Compensation (*compensatie*): Compensation of felled trees at one location may in some instances be done in other locations; this other site should at least have the same amount of acres. Exact rules for compensation are specified at the provincial level. Often, the provincial government uses a rule known as ‘overcompensation’, meaning that the replanted area should be bigger.

The reporting obligation is not equal to a permit for felling. In some municipalities, an additional permit is required issued by the municipal government.

*What is especially relevant to our content analysis?*

The Forestry Act has a high degree of accountability and is managed strictly, hence, also has authority. Climate change is not addressed by the law, however, this does not have to

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<sup>29</sup> text of the law can be found at: [http://www.st-ab.nl/wetten/0051\\_Boswet.htm](http://www.st-ab.nl/wetten/0051_Boswet.htm)

be a problem since ‘forests’ are defined very broadly (variety) and many tree species are subject to its control. Changing conditions favoring or disfavoring certain tree-species do not have an effect on the applicability of the law. Only the species that are now excluded from protection through this law may be reconsidered in the light of climate change, as well as additional municipal requirements on forest felling.

### **5.3.6 Nature explorations and Nature Balances**

*What kind of document is it: about what, by whom, for whom?*

Nature Explorations and Nature Balances follow the same structure as Environmental Explorations and Balances. Both are performed by PBL. Nature Balances are performed annually and evaluate national nature, forest and landscape management. Nature Explorations are published once every four years and assess expected future development that might influence nature policy.

*How is (adaptation to) climate change addressed in the document?*

The 2006 Nature Balance describes the impacts of climate change on nature. How to adapt this sector to the impacts is not discussed.

The 2002 Nature Exploration places the policy document People for Nature, Nature for People at the center and investigates the impact of different future scenarios on the realization of policy objectives. No strategies are offered to adapt nature policy to climate change.

*What conclusions on institutions and governance can be drawn from the document?*

The 2006 Nature Balance signals a trend towards placing more responsibilities for nature policy at the provincial level, especially when a connection needs to be made with spatial planning. The authors of the Nature Balances think that the Spatial Planning Act and the WILG could strengthen the position of provincial governments, providing this level with adequate authority to manage their responsibilities.

Another trend that is acknowledged is the increasing effort the national government is putting into realizing the NEN through agricultural nature management (and less through land acquisition).

Currently, PBL is drafting its third Nature Exploration, in which the growing responsibility of individuals and farmers in the realization of the NEN will be discussed.

*What is especially relevant to our content analysis?*

Nature Balances and Nature Explorations provide an overview of Dutch nature management. In recent document, NEN is positioned as the dominant nature institution. Furthermore, a decentralization trend is recognized: More responsibility for provinces and more responsibilities for individuals and farmers.

### **5.3.7 Evaluation of nature policies**

The Ministry of LNV leaves the evaluation of its nature policies to knowledge organizations; Wageningen Universiteit Research Centre is a major actor in these evaluations. To this end, the Ministry has set up a structural financing stream (WOT N&M – *Wettelijke*

*Onderzoekstaken Natuur & Milieu*) for research, mainly to study how LNV can meet international policy obligations on nature and environment. Within this context, a database was set up to report on Dutch achievements on international obligations. In 2007 the database was used for the first time; the results of the assessment of Dutch environmental policy in relation to international obligations formed the first part of this database, and therefore, this assessment is also referred to as the base line calculations for Natura 2000 (*Nulmeting Natura 2000*).

*What is especially relevant to our content analysis?*

This instrument generates resources, stimulates learning, establishes institutional memory and makes information accessible, also increases the accountability of the Netherlands on international policy objectives.

## 6. Sector Water

### 6.1 Introduction

Policies for surface water can be divided in policy for water quantity and policy for water quality. Water quantity policy firstly aims for safety against flooding and prevention of flooding. Other aims are sufficient water for shipping, water supply for agriculture and drinking water supply.

Water quality policy is mainly based on the Law on Pollution of Surface Water (Wet Verontreiniging Oppervlaktewater Wvo) which uses a permit system to limit discharges to surface water. The European Framework Directive is becoming more and more important for water quality: it prescribes a 'good ecological status' in 2015, as was described in Chapter 2.

The implementation of water policy is taken care of by water management organizations such as the Directorate-general of Public Works and Water Management (Rijkswaterstaat) and 26 water boards. The State level manages large water bodies such as the rivers Rhine, Meuse and Scheldt, Lake IJssel and the North Sea coast. The water boards manage the regional water system in their territory. The water management organizations fulfill both water quantity and water quality tasks, sometimes in separate departments, and sometimes as 'integrated water management'.

Next to surface water policy, there is groundwater policy. This is regulated through the Groundwater Law, which is implemented by the provincial governments. They give out groundwater extraction permits and they implement measures to protect groundwater quality.

Municipalities also have water tasks, especially in the area of spatial planning and construction and maintenance of the sewerage system.

### 6.2 Policy Development

#### 6.2.1 Advice of the Commission Water Management for the 21st Century

*What kind of document is it: about what, by whom, for whom?*

In 1998, the Commission Water Management for the 21st Century (Commissie Waterbeheer 21e Eeuw, WB21) was installed after several problematic events with extremely high water levels in the large rivers and flooding of rural areas in 1995 and 1998. Its mission was an integrated national study what adaptations would be necessary in the Dutch water management system as a consequence of the expected soil subsidence and climate change impacts in the 21st century. Both technical and legal-institutional measures and instruments in the national and regional water infrastructure were part of the Commission's study.

Next to assessing the amount of incoming water (through sea level rise, rainfall, river discharge and soil subsidence) the Commission assessed water demand for agriculture,

nature, urban areas, shipping, recreation and drinking water supply. Some main conclusions from the report:

- Water is not only a threat but also an opportunity.
- Reliable water management offers protection against flooding and water nuisance, and is robust and flexible.
- To prevent unwanted transfer of problems with water supply and discharge to other parties the Commission sees two possibilities: the river basin approach and the room for water principle.
- The river basin approach offers the best opportunities to improve the natural functioning of the water system.
- Unwanted downstream transfer of problems is prevented when water is retained upstream under normal circumstances to use during a period of drought; and when water is retained under extremely wet conditions to reduce pressure on downstream areas.
- Sustainable water management is when society is aware of the significance of water and is willing to pay the price for it.
- When people use land they should deal with water economically, because water can become scarce in a dry period, and extra policy for combating drought, after spilling it first, will be expensive.
- Polluters and consumers have to pay more for water.
- A better organization of knowledge is needed for water management.

Furthermore, the Commission presents a hierarchy of three strategies for water managers:

1. Retaining surplus water upstream in the soil and in surface water as much as possible;
2. If necessary, retain water temporarily in retention areas along the river system. For this purpose space has to be reserved;
3. Discharging water elsewhere, of, if this is impossible, retaining water in emergency basins which can be flooded in a controlled way when there is extreme high water.

*How is (adaptation to) climate change addressed in the document?*

The document uses regional climate models, related to IPCC scenarios, to predict maximum river discharges with a time horizon of 100 years.

*What conclusions on institutions and governance can be drawn from the document?*

According to the Commission report of 1999 the biggest problems are not to be found within the water sector itself, but in the interactions with spatial development and the most important users of water. The Commission concludes that technical knowledge is not a problem, but steering from a societal context is the difficulty.

- Enough space has to be assigned to water retention to be able to cope with extremely wet circumstances. This space for water has to be shared with other functions. (Multifunctional use of space).
- The government should not strive for absolute guarantees for safety, it should also anticipate on a failing water system. Extra national and regional policies are needed to cope with a calamity of a failing water system.
- Because of the uncertainties on the long term, measures should be ‘no regret’ measures. They should create sustainable solutions for the long term.
- To make governance work there needs to be public support for adapting policies, for higher costs and for the necessary changes in cost distribution.
- There is no new organization needed for water management. What is needed is a better division of responsibilities, more implementation power and more cooperation.
- Interactive preparation and interactive decision making with citizens, interest groups and other governments is essential.
- Because of the uncertain future, measures always have to be flexible.
- Provincial governments must have a bigger role in the horizontal integration of water policy. A better vertical integration of policy between state, provincial governments, municipalities and water boards is also needed.

*What is especially relevant to our content analysis?*

This was a truly visionary document which was one of the first to take climate scenarios into account. It had a great impact on all water policies that were formulated after this report. The call for cooperation and interaction with society is also important.

### **6.2.2 National Agreement on Water**

In 2003, the National Agreement on Water (Nationaal Bestuursakkoord Water, NBW) was signed by the Dutch State, the provincial governments, the Inter Provincial Platform (IPO), the Association of Dutch Municipalities (VNG) and the Union of Water boards. In this NBW the governments wrote down how they would deal with the water management in the 21st Century. The NBW aims to have the water system under control in 2015 and to keep it that way by anticipating future climate change, sea level rise, soil subsidence and increase of the built environment.

The State promised to develop two policy documents before the end of 2003:

- The policy guideline on developments outside of dikes, to provide clarity on the protection level of areas outside of the dikes along the IJsselmeer, the rivers and the coast.
- The policy guideline on the coast which describes how the State and provincial governments will develop plans together to strengthen weak links in flood protection along the Dutch coast.

Between 2003 and 2007 all short term measures were implemented. In 2006, the NBW was evaluated (which would happen every four years since then). The conclusions of the first evaluation are presented in the table below.

Table 6.1: Conclusions of the first evaluation of the NBW in 2006

<i>What has been achieved?</i>	<i>What has not been achieved yet?</i>
<i>Insight in the water goals</i>	<i>Insight in the water goals</i>
<ul style="list-style-type: none"> <li>- Much better insight in the development of water quantity and accompanying bottlenecks</li> <li>- Better insight in the relation between the main water system and smaller regional water systems (by assigning blue junctions – blauwe knooppunten)</li> </ul>	<ul style="list-style-type: none"> <li>- Unclear what the urban water goals are</li> <li>- Detailed planning of water measures in terms of locations, timing and specific measures demands investment in local land use processes</li> <li>- Unclear if need of space for water will be safeguarded in 2007</li> </ul>
<i>Integrated decision making on water goals</i>	<i>Integrated decision making on water goals</i>
<ul style="list-style-type: none"> <li>- Water aspects are considered earlier and more often in spatial planning processes</li> <li>- The design of new housing areas and industrial zones is adapted to water circumstances more often</li> <li>- Measures for Room for the River and Weak Links are in preparation</li> </ul>	<ul style="list-style-type: none"> <li>- Water circumstances have very little influence on the choice of new building locations</li> <li>- Spatial reservations for water are rare in regional and local land use plans</li> <li>- No agreement on groundwater plans</li> <li>- Decisions on coastal policy, areas outside dikes and disaster control are delayed</li> </ul>
<i>Implementation of measures</i>	<i>Implementation of measures</i>
<ul style="list-style-type: none"> <li>- Some measures have been taken and some water problems have been solved</li> <li>- The hierarchy of strategies ‘retaining upstream, retaining along the River, discharge or emergency basis’ seems to be used</li> <li>- There is a shift from large scale to small scale solutions</li> </ul>	<ul style="list-style-type: none"> <li>- Some delay in implementing the program of measures</li> <li>- Unclear what large scale measures will be necessary in the future</li> </ul>
<i>Financing of measures</i>	<i>Financing of measures</i>
<ul style="list-style-type: none"> <li>- 100 million regulation has speeded up implementation through co-financing</li> <li>- First preparations made for financing long term measures</li> </ul>	<ul style="list-style-type: none"> <li>- Municipalities and provincial governments lack information on availability of financial means</li> </ul>
<i>Cooperation and public support</i>	<i>Cooperation and public support</i>
<ul style="list-style-type: none"> <li>- Cooperation between parties has improved substantially and is insitutionalized</li> <li>- Public awareness of the water goals has increased substantially</li> <li>- Several initiatives were launched aiming at knowledge development and exchange.</li> </ul>	<ul style="list-style-type: none"> <li>- High complexity and difficult to realize larger scale solutions such as emergency water retention locations</li> <li>- Indirect representation of individual organizations by their associations</li> </ul>

In 2008, the National Agreement on Water was updated. This became necessary because of implementation of the EU Framework Directive on Water and the availability of new climate scenarios. In June 2008, the new Agreement (NBW-Actueel) was signed by the Dutch State, the provincial governments, IPO, VNG and the Union of Water boards. The NBW-parties will continue together with the implementation of the agreed measures. The measures concern dealing with climate change, urban water, developments in construction and infrastructure, and implementation of the EU Framework Directive.

*How is (adaptation to) climate change addressed in the document?*

The development of new KNMI climate scenarios in 2006 is one of the reasons to update the agreement. The scenarios are used to create a bandwidth in the measures so that they can cope with several extreme situations such as droughts and flooding. So learning is taking place.

Measures are taken in a robust way because of climate uncertainties: redundancy.

The water system will be evaluated regularly against new climate knowledge: learning.

*What conclusions on institutions and governance can be drawn from the document?*

Water users will be informed in cases of drought.

Provincial governments, water boards and municipalities take on the affordable measures for the EU Framework directive. Other actors can comment on these plans (multilevel but not responsive).

The NBW contains concrete and quantified targets concerning water safety and water nuisance. So there is accountability.

Policy for water safety has to be integrated with reconstruction of rural areas, land use and regional development projects, the National Ecological Network, mining, cultural history, Construction of living areas and industrial areas, and infrastructure. This is multi-sector.

The agreements describes a division of responsibilities for water shortages, droughts in nature, salinization and so on between the governmental levels. (collaborative leadership and multi-level).

There also are agreements on sharing knowledge and innovation programs (learning).

Communication is limited to the public advertisement campaign 'The Netherlands are living with water': not responsive.

The state level offers some extra funds for creating synergy; other efforts have to be paid from regular budgets. Some financial resources.

Monitoring and evaluation has been agreed upon. The NBW will be evaluated every 4 years: learning and accountability.

*What is especially relevant to our content analysis?*

Old and new agreements are signed – partly by organizations that formally are not allowed to represent their members (VNG and Water Board Association). Goal of the document is to institutionalize cooperation between governments.

### 6.2.3 Third Coastal Strategy: Tradition, Trends and Future

*What kind of document is it: about what, by whom, for whom?*

At the end of the year 2000, the Ministry of Transport, Public Works and Water management published the Third Coastal Strategy: Tradition, Trends and Future (Derde Kustnota: Traditie, trends en toekomst). A dynamic approach of managing the coastline is proposed for the coming decades. Sand supply is efficient, also under water, and offers a structural solution for coastal erosion.

The Strategy also proposes to make spatial reservations for broader dikes on the land side. The Strategy generally describes where these areas are and policy will be developed in more detail later.

In 2007, the Third Coastal Strategy was evaluated. In November 2008 the Secretary of State, Mrs. J.C. Huizinga-Heringa of the Ministry of Transport, Public Works and Water Management wrote to Parliament:

“The evaluation shows that the Third Coastal Strategy was a success on most parts. The first main goal, to provide sustainable protection of the lower parts of the Netherlands, has been achieved. The method used was dynamic maintenance of the coastline. (...) However, land use along the coast (...) [was] insufficiently defined (...) and lacks policy instruments (...) for adequate implementation of coastal policy. (...) The evaluation shows (...) that inconsistencies exist in the present policy at State level and that the division of tasks and roles among the different governmental organizations is unclear. (...) The Cabinet has announced that an integrated long term vision will be produced for a climate proof development of the coastal zone. On September, 7, 2007 the Cabinet has agreed to install a Delta commission which will advise me in 2008 on the future of the coast on the long term with respect to climate change. The outcome of this process will become part of the first National Water Plan.”

Remaining issues are, according to this letter:

- Sand suppletion should also have a function for other domains such as recreation, with additional financing by provincial governments.
- Coastal towns and weak links.

*How is (adaptation to) climate change addressed in the document?*

The Strategy states that the pressure on the coast increases both from the sea and from the land. Sea level rise and climate change are expected to happen. This means that stronger coastal defence will be necessary, especially in places that have been identified as weak links.

*What conclusions on institutions and governance can be drawn from the document?*

Land use along the coast lacks policy instruments for adequate implementation of coastal policy. Inconsistencies exist in the present policy at State level and the division of tasks and roles among the different governmental organizations is unclear. Other points for improvement are:

- The rules for year round beach restaurants and bars have to be adapted
- Regulation of building outside of dikes

*What is especially relevant to our content analysis?*

The expected consequences of climate change are taken up fully in this policy. The measure chosen has a flexible character. The complicated part is the interaction with land use policy. The Ministry seems to lack power to influence land use along the coast adequately for long term safety against flooding.

#### **6.2.4 Rapport Deltacommissie 2008**

*What kind of document is it: about what, by whom, for whom?*

The second Delta commission (formally "Commission on Sustainable Development of the Coast", also nicknamed "Commission Veerman" after its chair) was installed by the Secretary of State, Mrs. J.C. Huizinga-Heringa of the Ministry of Transport, Public Works and Water Management and by the Minister of Internal Affairs Guusje ter Horst in September 2007. The goal of this State Commission was to advise the government on the consequences of sea level rise for the Dutch coast, on the effects of higher dischargers from the large Dutch rivers, and other developments in the climate and society until the 22nd century. The advice had to propose possible strategies for a sustainable development of the Dutch coast and on the benefits of these strategies for the mainland and society. The Commission published the advice on September,3, 2008.

The Commission has divided its advice in concrete recommendations until 2050, a clear vision for the period until 2100 and some general comments on the period after 2100. For the period until 2050 there are 12 main recommendations:

1. Increasing the safety level of all dike rings with a factor 10.
2. Plans for new developments on locations which are technically less preferred should be based on a cost-benefit analysis, without transferring the costs to other parties or to the future.
3. In areas outside of dikes the discharge capacity of rivers should not be compromised.
4. Along the coast of Zeeland, Holland and the Wadden islands, the coastal defence system can rely on sand suppletion, if necessary ditches can be moved to other locations.
5. It needs to be monitored and analyzed how sand suppletion along the North Sea coastline influences and supports sedimentation in the Wadden Sea while the sea level is rising.
6. The lifetime of the Oosterscheldt flood defence needs to be prolonged to make it reliable until the year 2075. Sand suppletion will reduce the loss of mud flats. After 2075, safety can be combined with restoring tidal dynamics as much as possible.
7. The Westerscheldt has to remain open water because of the valuable estuary and the shipping route to Antwerp. Safety has to be controlled with Delta dikes.
8. The Krammer-Volkerak-Zoommeer, the Grevelingen and possibly also the Oosterscheldt basin need to function as a temporary discharge basin for water from the rivers Rhine and Meuse.

9. The programs Room for the River and Meuse operations (Maaswerken) need to be implemented as soon as possible. Where ever this is cost effective, measures to accommodate a discharge of 18.000 m<sup>3</sup>/s for the Rhine and 4.600 m<sup>3</sup> /s for the Meuse should be implemented now.
10. A 'closable open' Mouth of the Rhine combines safety with fresh water supply, urban water management and nature. Extreme water discharges of Rhine and Meuse have to be led to the South-western Delta.
11. The strategic function of the IJsselmeer as a freshwater reservoir for the northern and western parts of the Netherlands needs to be strengthened. The water level should rise gradually with a maximum of 1.5 metres. For a long time this will also enable discharge of water to the Wadden sea without pumping. The level of the Markermeer should stay as it is now.
12. The political and public administration around water safety should be better organized and financial resources should be reserved. A Delta Law can realize these new arrangements and institutionalize the funding.

*How is (adaptation to) climate change addressed in the document?*

Climate change is one of the main reasons for installing the Delta Commission, and this is expressed in the long term vision (even until after 2100). The report tries to define measures that will solve the long term problems.

*What conclusions on institutions and governance can be drawn from the document?*

Ten of the main recommendations have a more technical nature, two comment on governmental institutions:

2. Plans for new developments on locations which are technically less preferred should be based on a cost-benefit analysis, without transferring the costs to other parties or to the future.
12. The political and public administration around water safety should be better organized and financial resources should be reserved. A Delta Law can realize these new arrangements and institutionalize the funding.

*What is especially relevant to our content analysis?*

The consequences of climate change are taken seriously to the full extent and are translated as good as possible in long term measures. From a technical viewpoint we can have faith that recommendations will be implemented (although there is much opposition against the IJsselmeer recommendation). The interactions between governments and the land use claims will be the most difficult to realize.

### **6.2.5 National Water Plan 2009**

*What kind of document is it: about what, by whom, for whom?*

The National Water Plan describes measures to keep the Netherlands safe and inhabitable for future generations and to make use of the opportunities that water offers. The National Water Plan was preceded by a Water Vision in 2007 and by the report of the Delta Commission. Both of these documents express the ambition to develop a sustain-

able long term policy for water, including anticipation on climate change. The Dutch cabinet has embraced the conclusions of the Delta Commission and they became an important part of the National Water Plan. The National Water Plan also builds on:

- The Flood Protection Program for the coast;
- Room for the River and Meuse Operations, both programs creating more space for water;
- the National Agreement on Water about water nuisance and droughts;
- River basin plans for water quality management (EU Framework directive water) for the rivers Ems, Meuse, Rhine and Scheldt.

A final draft of the National Water Plan for the period 2009-2015 was published for a round of public comments on December, 12, 2008. According to the plan water will have a more prominent role in spatial planning in the Netherlands. General goals are good protection against flooding, prevention of water nuisance as much as possible, and achieving good water quality.

*How is (adaptation to) climate change addressed in the document?*

According to the National Water Plan, Climate change is one of the main drivers that necessitate adaptation of the water system. Other main drivers are demography and the economy. It is uncertain how climate change will develop, but this does not mean that policy making is paralyzed. Ways to deal with uncertainty (discuss doubts) are:

- To check new climate knowledge on a regular basis, for example with climate scenarios (learning)
- Robust measures, such as building with nature / strengthening natural processes;
- Design infrastructure for long term functioning (redundancy).

*What conclusions on institutions and governance can be drawn from the document?*

The National Water Plan is also a structural vision on land use based on the Water Act and the Spatial Planning Act (authority).

Important aspects of the National Water Plan:

- In 2009, the Cabinet will produce a draft Delta Law. This law will contain a legitimate basis for the Delta program, the tasks and competences of the Delta Director and a proper financial arrangement.
- Cooperation between governments will be intensified. Examples are the processes with which Room for the River and the EU Water Framework Directive were realized. (multi level)
- Generation of new knowledge and innovation are essential (learning).

The plan proposes a multi layer safety arrangement with the following three layers (diversity):

1. Prevention of flooding through infrastructure such as dikes.
2. Sustainable spatial planning, for example by making spatial reservations for water for the long term.

3. Better organizational preparation when a flood occurs. Disaster plans will be made and plans to protect vital infrastructure such as telecom, ICT, energy networks and evacuation routes.

The cabinet wants everyone to participate. A region-specific approach will become the standard procedure for developing local measures. This means that decisions are not only based on analysis of the water system but also on opportunities for all other actors to improve spatial quality, recreation, nature, the landscape, agriculture, production of sustainable energy and urban development. Region specific also means that citizens and the private sector are involved in an early stage of policy making (responsive, multi-actor, more problem frames).

According to the National Water Plan the financial resources made available by the State are sufficient for implementation of the measures for which the state is responsible. It is not clear if this is also true for lower governments. The region-specific approach has to be implemented as efficiently as possible (no redundancy).

Monitoring and evaluation are planned: the National Agreement on Water in 2010 and the EU Water Framework Directive in 2012. Yearly status reports on the Dutch water system made by PBL are also planned for. (learning and institutional memory).

*What is especially relevant to our content analysis?*

The National Water Plan is a thorough and long term plan, made by experienced planners. Financial resources are amply available. Climate change is taken into account as much as possible. Being open to other problem frames (and sharing resources for other purposes than water safety) may be points for concern.

### **6.2.6 Program Weak Links of the Coastal Defence**

In order to check if the Dutch coastal defence is sufficient, an interim evaluation was organized in 2003. In the evaluation report it was concluded that the dikes and dunes need to be improved in ten locations along the coast before the year 2020. After that year they would not comply with the Dutch norms for water safety. The ten locations are called Weak Links. In some of these places temporary emergency measures were taken in 2003/2004. For all of the Weak Links structural solutions must be developed before 2020.

For two of the Weak Links there is hardly a connection with spatial planning and they have been improved purely from the viewpoint of the water sector:

- At Den Helder improvements were implemented in 2004/2005;
- The 'Kop van Voorne' (South Holland) is improved in 2008.

Seven of the other Weak Links involved other interests besides water safety such as nature, the landscape, economic functions or recreation. Together with regional actors, the following solutions were chosen and implemented between 2006 and 2008:

- The 'Kop van Noord-Holland': a seaward solution with sand suppletion, including increased space for nature, landscape and recreation;
- Noordwijk: a seaward 'dike-in-dune'-solution which creates space for a future enhancement of the quality of the sea boulevard;

- Scheveningen: a hard construction towards the sea and extra sand suppletion combined with a new architectural plan for the boulevard;
- Delfland coast: a seaward solution with, including increased space for nature, landscape and recreation;
- Flaauwe Werk: landward heightening and strengthening of the present sea dike, including some recreational services;
- Southwest Walcheren: landward solution for the Westduin-Nolle area combined with a quality impulse for the land, and extra seaward sand suppletion (including improvement of the dike) at the Westkapelse sea dike;
- West Zeeuwsch-Vlaanderen: landward dune enlargement, combined with large scale development of new nature and recreation opportunities, and seaward improvements at Cadzand and Breskens.

For the tenth Weak Link, the Hondsbossche and Pettemer Sea Dike, the solution is still under discussion with the regional actors. It is expected that all of the Weak Links will be strengthened before 2015.

### **6.2.7 Flood Protection Program**

The primary dikes are the most important protection of the Netherlands against flooding from the NorthSea, the large rivers, the IJsselmeer and the Markermeer. Since 1996, the quality of the primary dikes is assessed every five years. This legally binding assessment is prescribed in the Water Act. The first assessment was done in 2001, the second in 2006 and the third is expected in 2011.

The Flood Protection Program consists of measures for dikes which have been criticized in the first and the second dike assessment. In the second assessment, 24% of the dikes still does not comply with the legal safety norm. The measures for the Weak Links are integrated in an updated version of the Flood Protection Program. In a table which forms the heart of the Flood Protection Program, 93 measures are announced.

The Flood Protection Program has become a large subsidy program. It now includes 100 projects, with total costs of 2,3 billion euro. In 2007, a special Program Office was installed to facilitate water organizations to develop plans for improvement measures and to monitor progress. The water boards will develop and implement most of the measures. It is expected that most of the work will be ready by 2015. Then all primary dikes will comply with the legal norm.

### **6.2.8 Structural Planning Decision Space for the Rivier**

*What kind of document is it: about what, by whom, for whom?*

In January 2007, the Structural Planning Decision (PKB) Space for the River was approved by the Dutch Parliament. With this the strategic phase ended and the phase of developing specific measures started. For some of the measures, the so-called head starters, the detailed development had already started earlier.

The PKB describes a policy to realize the required safety level along the branches of the river Rhine and the lower part of the river Meuse in 2015 at the latest. It has to be combined with an improvement of spatial quality. Some 40 measures include:

- Spatial reservations for the short and the long term;
- A transition from fighting water to creating space for water;
- Lowering of the flood plain;
- Moving dikes landinward;
- Financial arrangements.

There also are some suggestions for measures after 2015.

Table 6.2: PKB Space for the River measures until 2015

Waal	Removal of obstacles such as jetties Lowering of flood plain in Millingerwaard Moving dikes landinward at Lent and Munnikenland
Nederrijn-Lek	Lowering of flood plain along Panterdens Kanaal and Nederrijn Strengthening of dikes Removal of obstacles near Elst
IJssel	Lowering of flood plain in three locations Moving dikes landinward at Cortenoever, Voorst and Westenholte. Creating a high water gully near Veessen-Wapenveld Downstream of the IJssel lowering of main gully
Downstream part of the Rhine	Removing dikes in the Noordwaard and the Overdiepsche Polder Increasing space by lowering a quay in the Biesbosch Lowering of flood plain near Avelingen Research into possibilities to retain high water in lake Volkerak

*How is (adaptation to) climate change addressed in the document?*

The program focuses on measures until the year 2015. It takes a high maximum discharge into account, inspired by climate scenario outcomes.

*What conclusions on institutions and governance can be drawn from the document?*

The Cabinet made 2.1 billion euro available for implementation of all basic measures. In some places, additional or alternative measures are possible. Other governments and private actors can make alternative plans under the condition that the goals of the PKB are still achieved and these parties offer sufficient financial resources.

*What is especially relevant to our content analysis?*

The program demarcates an important transition from fighting water to accommodating water through spatial design. The program pioneered in the necessary cooperation with other societal actors outside the water sector which has become an example to other wa-

ter policies. Deciding on hard targets of total river discharge capacity and a maximum budget, and flexibility on measures and process was the institutional design that fitted with this transition.

### **6.2.9 PKB Strategy Wadden Sea (2006)**

*What kind of document is it: about what, by whom, for whom?*

The Third Strategy for the Wadden Sea (PKB Wadden Sea) is a spatial plan for management of the Wadden Sea. The strategy was approved by the Cabinet and the Dutch Parliament in 2006. The strategy describes what is and is not allowed in the Wadden Sea.

The main objective of the strategy is sustainable protection and development of the Wadden Sea as a nature area and the preservation of the open landscape. Of the Wadden Sea, 90% is designated as State Monument of Nature. The State Monument of Nature Waddenzee was brought under the EU habitats guideline by the Ministry of Agriculture, Nature and Food Security in 1996. Human activities have to fit with the nature protection policies and are only allowed if they do not interfere with nature goals. Plans outside the Wadden Sea that can have negative effects should also be judged against the strategy.

Most strictly protected areas are State Nature Parks under Article 17 of the Law for the Protection of Nature. These areas are not freely accessible. Secondly there are areas under article 16 where everyone is allowed, only activities that disturb nature are prohibited. Thirdly there are areas which are not subject to nature regulation such as shipping routes.

Other measures in the PKB Wadden Sea:

- No new emissions of waste water on the Wadden Sea or neighbouring harbours.
- Investing in cooperation with Germany and Denmark.
- New policy on gas extraction and fisheries in the Wadden Sea.

*How is (adaptation to) climate change addressed in the document?*

Climate change is mentioned twice in the PKB. Research is planned to investigate how the effects of climate change and sea level rise can be acted upon. The idea is to use natural processes as much as possible.

*What conclusions on institutions and governance can be drawn from the document?*

The Strategy only formulates the most important principles for managing the Wadden Sea. Monitoring, knowledge development and intergovernmental cooperation are mentioned. More concrete measures will be developed in a follow-up plan.

*What is especially relevant to our content analysis?*

Knowledge on the impact of climate change on the Wadden is lacking, which makes it impossible to formulate adaptive policies. Possibly there is a contradiction in managing change and conservation of nature.

### **6.2.10 Policy Guideline Large Rivers**

*What kind of document is it: about what, by whom, for whom?*

In 1997, the Policy Guideline Room for the River restricted building activities in flood plains as much as possible. Later on, this was experienced as too restrictive for regional development and it seemed to hamper negotiations for Room for the River projects. In 2006, it was replaced by the Policy Guideline Large Rivers. The new guideline reflects trust of the Ministry of Transport, Public Works and Water Management that in some cases opportunities can be utilized without compromising the discharge capacity of rivers and flood plains (trust).

The Policy Guideline Large Rivers is written by the Ministry of Transport, Public Works and Water Management after consultation of other ministries, provincial governments, the Association of Dutch River Municipalities and the Union of Water Boards (collaborative leadership). Interest groups and the private sector have also been involved in the process (multilevel, multi-actor).

The Policy Guideline consists of the following parts:

1. The policy brief: the main concepts of the The Policy Guideline Large Rivers.
2. The policy rules: an extension of the Law on the management of state water infrastructure (Wbr) that describes how permits can be issued for activities in the river bed.
3. Directions for use: comments on how to interpret the rules.
4. Maps: these indicate which judgement frameworks are for which areas in the river bed.

The Policy Guideline Large Rivers makes it possible to give existing buildings in the flood plane a new function to prevent degradation. Other parts of the river bed will remain accessible for river-specific functions such as cargo handling, ship wharfs and marinas.

*How is (adaptation to) climate change addressed in the document?*

As a consequence of climate change, continuous investment will be necessary in the safety of river areas. The PKB Space for the River anticipates on this by making spatial reservations for enlarging the river bed which may become necessary after 2015. Therefore, the Policy Guideline inhibits developments that would block the possibility of enlarging space for the river through broadening and deepening strategies.

*What conclusions on institutions and governance can be drawn from the document?*

The Policy Guideline allows for new developments for housing, recreation and industry in the river bed under strict conditions. These conditions are that new developments do not reduce discharge capacity of the river and that they do not limit future possibilities of enlarging the river bed. When space is reduced, more space has to be created on another location. There are two decision regimes in the Policy Guideline:

- The streaming regime: parts of the river where only river-specific activities are allowed.
- The retention regime: parts of the river bed where all activities are allowed as long as they comply with the conditions mentioned above.

If citizens and companies decide to settle in the river bed, damage caused by flooding is on their own expense. Actors taking initiative in the riverbed have to take measures to protect themselves against potential damage (capacity to improvise). Local governments have to add prescriptions for the areas outside dikes in their development plans and building regulations to prevent dangerous situations. Also, local governments need to have an evacuation plan.

An experiment has started with 15 pilot locations for adapted building in the river bed (EMAB). The experiments are intended to develop more knowledge on water neutral building and adapted forms of building such as floating houses or building on poles (learning). A working group watches the implementation of the policy guideline. Monitoring and evaluation will be important instruments (learning and institutional memory).

*What is especially relevant to our content analysis?*

The Policy Guideline Large Rivers does not contain all policies concerning the rivers, it only solves some difficulties between the Room for the River program and the Spatial Planning Act. There are so many conditions that it remains a question if this guideline really creates much room for experiments. Maybe it is only written to solve some difficulties in the Room for the River process.

### **6.2.11 Coastal Policy**

*What kind of document is it: about what, by whom, for whom?*

The Coastal Policy was approved by the Cabinet in 2007. The main principle of the policy is to ensure water safety. The policy offers space for living, working and recreation along the coast, as long as this principle remains intact. The Coastal Strategy makes the policies in the National Spatial Strategy and the Third Coastal Strategy more clear and explains the division of responsibilities between different governments. The policy is developed by the Ministry of Transport, Public Works and Water Management and the Ministry of Housing, Spatial Planning and the Environment in cooperation with provincial governments, municipalities and water boards.

*How is (adaptation to) climate change addressed in the document?*

Climate change is only mentioned once in the document, in relation to innovation of architecture and building technology to limit damage in the case of a flood.

*What conclusions on institutions and governance can be drawn from the document?*

It provides provincial governments, municipalities and water boards with a decision framework for judging plans, for example, for creating parking space, beach houses and so on.

*What is especially relevant to our content analysis?*

It is not so interesting, just another document in this line to improve cooperation between governments

### **6.2.12 Municipal waterplans**

*What kind of document is it: about what, by whom, for whom?*

A municipal water plan is a plan in which a municipality explains its policy on water. Generally, it is written in cooperation with a water board and a drinking water company. Formally a municipality is only responsible for the sewerage system. Indirectly, however, a municipality has much more responsibilities:

- Together with the water board it is decided who takes care of the water ways: who does the dredging, who maintains the shores in what way and who pays for it?
- The water level within the built area is maintained in cooperation with the water board.
- The water test has to be applied to all new spatial plans.
- Provincial governments have more and more demands on spatial plans concerning water management. South Holland, for example, requires that of all new building locations 10% is surface water.
- The water goals of the future will also require an effort from the municipalities. They will have to prevent water nuisance, improve water quality and solve drought problems.

A municipal water plan is not only about surface water, but also about groundwater, waste water, rainwater and drinking water. For the execution of these tasks a plan is necessary in which a future vision and goals are explained. A plan also contains an overview of measures and responsibilities and a financial plan that has been approved by the municipal government. Furthermore, a water plan contains an analysis of the present water situation, comments on water policy at higher governmental levels such as the National Agreement on Water and the EU directives.

*How is (adaptation to) climate change addressed in the document?*

There are many municipal water plans, we did not look into all of them and it is unknown if climate change plays an important role in many of these plans. However, of the 450 municipalities around 70 are members of a municipal climate association.

*What conclusions on institutions and governance can be drawn from the document?*

The documents have a function to integrate the range of water tasks of a municipality and to make it more coherent. It also forms a basis for negotiation with the water boards. Finally, it connects municipal implementation explicitly with higher governmental levels.

*What is especially relevant to our content analysis?*

Municipal water plans contain information on local water conditions in a municipality and on future plans to change these conditions. Consequently, it is an important source of information – mainly within the municipality itself, but also for water boards, industries and potentially also other (local) stakeholders.

## 6.3 Laws and instruments

### 6.3.1 Water Act

*What kind of document is it: about what, by whom, for whom?*

The legal framework was streamlined and modernized by creating a new Water Act based on a range of existing water laws<sup>30</sup>. The goals of the new law are prevention and limitation of flooding, water nuisance and water shortages; protection and improvement of chemical and ecological quality of water systems; and fulfilling societal functions by water systems. The Water Act regulates the management of surface water and groundwater. It also improves the relationship between water policy and spatial policy (multi-sector).

A first proposal on integration of water regulations was offered to the Dutch Parliament by the Secretary of State in 2004. It was approved and the draft of the Water Act was ready for discussion in Parliament in September 2006. A discussion followed with NGO's and the private sector in 2007 (multi-actor). By the end of 2007, a second draft was sent to Parliament, containing three important changes:

- The draft Act has been adapted to developments in regulation at the national and European level: modernization of water board law, the law on municipal water management, the new Spatial Planning Act and the EU Flood Risks Directive.
- Integration at legal level to create one office for the water permit and the environmental permit, the so-called Environmental Office Online.
- Technical improvements based on the reactions in the discussion rounds with other governments and social organizations (responsivity).

The adapted Act was accepted by Parliament in 2009. Since July, 1, 2009, the Water Act replaces the following list of Dutch laws on water management:

- Law on Water Management
- Law on Flood Protection
- Groundwater law
- Law against Pollution of Surface Water
- Law against Pollution of Sea Water
- Law on Polders and Dikes
- Law on Management of Water Infrastructure
- Law on Public Works and Water Management
- Law on Shipwrecks

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<sup>30</sup> more information on the new water act can be found at:  
<http://www.helpdeskwater.nl/wetgeving-beleid/waterwet>; text of the law can be found at:  
[http://wetten.overheid.nl/BWBR0025458/geldigheidsdatum\\_01-06-2010](http://wetten.overheid.nl/BWBR0025458/geldigheidsdatum_01-06-2010)

- Regulation on cleaning water floors (previously part of the Law on Soil protection)

Next to the Water Act, the Water Board Law will remain as a separate law. The above-mentioned old laws will be discussed in the next paragraphs (with the exception of the Shipwreck law because it is irrelevant to climate change), to show more of the content of Dutch water legislation.

*How is (adaptation to) climate change addressed in the document?*

In the law itself, the words ‘climate change’ are not used. In the brochure ‘Water Act summary’, however, Climate Change appears as its first heading; there it is claimed that climate change is the reason for integrating and updating the old laws into the new one. The Water Act is ready for ‘the future demands of water management in our country’.

*What conclusions on institutions and governance can be drawn from the document?*

The Act provides safety norms with which primary dikes must comply, ways to decide on norms for water quality, and how water managers should deal with water scarcity. The act prescribes a six-yearly test of the primary dikes (single loop learning) as well as a twelve-yearly update of the safety norms (double loop learning). The public will be informed on high water levels and alarming situations (continuous access to information). Furthermore, the Act prescribes that every six years national and regional water plans have to be made. (act according to plan).

An important result of the Water Act is that the present permit system will be integrated: six previous permits from the old water laws will now become only one permit for all activities in the water system. Permits are also replaced with an obligation to announce activities, based on general rules on how to behave.

Cooperation is the main principle for achieving the goals of the Water Act (collaborative leadership). State and provincial governments take care of strategic policy and norms on the national and regional level. Safety norms for primary dikes remain the responsibility of the national government. Safety norms for secondary dikes become the responsibility of provincial governments.

The water boards are responsible for operational water management at the regional level. Municipalities mainly have water tasks in the built environment, such as groundwater and rainwater management duties.

The Water Act improves the connections with other policy domains, especially with spatial planning. State and provincial governments become responsible for providing clear conditions for integrating water requirements in local spatial plans. State and provincial governments can also take action and change local planning decisions whenever this is considered necessary from the viewpoint of national interests (Warner et al 2007).

The Water Act contains articles on levies, subsidies, compensations and reclaiming of costs. Previous financial rules from the old laws have been combined and integrated (resources).

*What is especially relevant to our content analysis?*

The new Water Act is mainly an integrative and modernizing exercise. There is no new paradigm active, although the creation of the law shows more collaborative leadership and responsibility.

### 6.3.2 Law on Water Management

*What kind of document is it: about what, by whom, for whom?*

The goal of the old Law on Water Management (1989) was to provide a coherent and efficient framework for policy and management of the Dutch water system in its entirety, with some emphasis on the management of surface water quantity<sup>31</sup>. The definition of "water management": governmental management of water on and in the soil, including the human interests in water.

*How is (adaptation to) climate change addressed in the document?*

Climate change is not addressed.

*What conclusions on institutions and governance can be drawn from the document?*

The Law on Water Management demands that national water management plans must be made every six years. These plans must describe the desirable developments in water management. They also propose general means and measures to achieve the goals, and the financial, economic and spatial consequences of the announced policy.

An operational plan is also made, as well as provincial water management plans. Other instruments are the water agreement, the decision on water levels in low-lying areas of the Netherlands, and a permit system for extracting surface water and discharges to surface water.

Water agreements can be made by all involved governments. Agreements can involve measures, responsibilities and financial deals. They are legally binding.

*What is especially relevant to our content analysis?*

The structural elements in this law aim for operationalization and realization of the intended policy: agreements, responsibilities and financial rules are made explicit. Otherwise not so relevant because the law is integrated in the new Water Act.

### 6.3.3 Law on Flood Protection

*What kind of document is it: about what, by whom, for whom?*

From 1996 until 2009, the Law on Flood Protection<sup>32</sup> was effective. This law was the most important instrument to keep the primary dikes in safe condition. Primary dikes guarantee the safety of the people living behind the dikes.

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<sup>31</sup> The text of the law can be found at: [http://www.st-ab.nl/wetten/0708\\_Wet\\_op\\_de\\_waterhuishouding\\_Wwh.htm](http://www.st-ab.nl/wetten/0708_Wet_op_de_waterhuishouding_Wwh.htm)

<sup>32</sup> The text of the law can be found at: [http://www.st-ab.nl/wetten/0709\\_Wet\\_op\\_de\\_waterkering.htm](http://www.st-ab.nl/wetten/0709_Wet_op_de_waterkering.htm)

*How is (adaptation to) climate change addressed in the document?*

The climate changes, there will be more rain, sea level will rise with 20 to 60 centimeters and because of melting ice in the Alps, the rivers have to drain off more water. This makes regular updating of the norms necessary.

*What conclusions on institutions and governance can be drawn from the document?*

The Law on Flood Protection prescribes the norms with which primary dikes must comply and how dikes must be built. To decide what their design should be like, it has to be known what water levels can be expected and what the strength of waves can be. These water levels and waves are called the hydraulic conditions. The conditions are listed by the Directorate-General of Public Works and Water Management, and they are renewed every five years (double loop learning). The law also prescribes that water managers test every five years if their dikes still comply with the safety requirements (single loop learning).

The law divides the responsibilities over the different governments in the following way:

- Water boards take care of building and maintaining primary dikes on a daily basis.
- the Directorate-General of Public Works and Water Management takes care of water infrastructure that is not connected to land such as the Afsluitdijk and some of the dikes along rivers and the coast.
- Provincial governments are responsible for supervision.

*What is especially relevant to our content analysis?*

Climate change is translated in rising sea level and higher river discharges, and this is then translated into higher norms for water infrastructure (without changing the paradigm of defence systems against water).

#### **6.3.4 Groundwater law**

*What kind of document is it: about what, by whom, for whom?*

Phreatic groundwater is the water just below the surface of the soil. It can be taken up by plants and trees, together with nutrients. Nature and agriculture would suffer from droughts if groundwater was unavailable. Deeper groundwater aquifers are used by industries and drinking water companies. It is important to protect the quality of groundwater resources. To regulate these interests, the Groundwater law<sup>33</sup> makes arrangements for groundwater management since 1981.

*How is (adaptation to) climate change addressed in the document?*

Climate change is not addressed in the Groundwater Law.

*What conclusions on institutions and governance can be drawn from the document?*

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<sup>33</sup> The text of the law can be found at: [http://www.st-ab.nl/wetten/0098\\_Grondwaterwet\\_Gww.htm](http://www.st-ab.nl/wetten/0098_Grondwaterwet_Gww.htm)

Groundwater law regulates the management of the amount of groundwater. Groundwater extractions by companies and citizens have to be reported, registered or permitted, depending on the amount of water. The provincial government is responsible for deciding on and giving out groundwater extraction permits. Because the groundwater situation is different in every province, each provincial government writes down its own policy in a groundwater plan. Some provincial governments delegated some of the groundwater tasks to the water boards.

*What is especially relevant to our content analysis?*

The fact that climate is not addressed, even though droughts may lead to reduced groundwater levels. Groundwater permits are now given out without a time limit (i.e. a certain amount of groundwater can be extracted every year until eternity).

### **6.3.5 Law against Pollution of Surface Water**

*What kind of document is it: about what, by whom, for whom?*

The Law against Pollution of Surface Water<sup>34</sup> was adopted in 1969 and became effective in 1970. Its goal is to combat and prevent pollution of surface water. The law describes a general framework and provides possibilities for further regulation.

The law was changed several times, for example because of the EU Framework Directive on water and other EU regulations. The law is now integrated in the general Water Act.

*How is (adaptation to) climate change addressed in the document?*

Climate change is not addressed.

*What conclusions on institutions and governance can be drawn from the document?*

The most important parts of the law are:

- A permit system
- Enforcement
- A structure of norms
- Levies

*What is especially relevant to our content analysis?*

The law could be a relevant instrument to control and prevent increasing surface water pollution as a result of increasing temperatures, however, is not used for this purpose as to yet.

### **6.3.6 Law against Pollution of Sea Water**

*What kind of document is it: about what, by whom, for whom?*

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<sup>34</sup> The text of the law can be found at: [http://www.st-ab.nl/wetten/0945\\_Wet\\_verontreiniging\\_oppervlaktewateren\\_WVOW.htm](http://www.st-ab.nl/wetten/0945_Wet_verontreiniging_oppervlaktewateren_WVOW.htm)

The Law against Pollution of Sea Water<sup>35</sup> of 1975 contains rules to prevent pollution of the sea with emission and dumping of waste and pollutants into the sea. The Law was meant to operationalize the OSPAR-Convention and the London Convention.

The law applies to all ships and airplanes in Dutch territorial seas, as well as installations on the Dutch Continental Shelf (NCP). The law prohibits dumping of a specific list of wastes and pollutants.

The Law has been integrated into the new Water Act.

*How is (adaptation to) climate change addressed in the document?*

Not addressed

*What conclusions on institutions and governance can be drawn from the document?*

The responsibility for implementing the law lies mainly with The Minister of Transport, Public Works and Water Management. Together with the Minister of Housing, Spatial Planning and the Environment, he/she is responsible of making the list of substances for which the prohibition is effective.

The law has been changed later to comply with the Protocol of 1996 with the Convention of London. This means that all dumping and emissions are prohibited, unless dispensation has been given.

*What is especially relevant to our content analysis?*

Not so relevant.

### **6.3.7 Law on Polders and Dikes**

*What kind of document is it: about what, by whom, for whom?*

The Law on Polders and dikes<sup>36</sup> of 1904 provides rules about creating polders. According to this law, a permit is needed to change a water area into land. It is not allowed to create a polder just like that. The law has become a part of the new Water Act.

*How is (adaptation to) climate change addressed in the document?*

Not addressed.

*What conclusions on institutions and governance can be drawn from the document?*

Mainly a permit system on creating new polders (which is hardly ever done nowadays).

*What is especially relevant to our content analysis?*

Not so relevant

### **6.3.8 Law on Management of Water Infrastructure**

*What kind of document is it: about what, by whom, for whom?*

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<sup>35</sup> The text of the law can be found at: [http://www.st-ab.nl/wetten/0946\\_Wet\\_verontreiniging\\_zeewater.htm](http://www.st-ab.nl/wetten/0946_Wet_verontreiniging_zeewater.htm)

<sup>36</sup> The text of the law can be found at: [http://www.st-ab.nl/wetten/0464\\_Wet\\_droogmakerijen\\_en\\_indijkingen.htm](http://www.st-ab.nl/wetten/0464_Wet_droogmakerijen_en_indijkingen.htm)

The Law on Management of Water Infrastructure<sup>37</sup> provides the Directorate-General of Public Works and Water Management with the means to maintain the Dutch water infrastructure. State roads, water ways, bridges, viaducts, pumping stations, sluices and dams which are under maintenance of the State, must be kept in good condition, and must be used safely and efficiently.

*How is (adaptation to) climate change addressed in the document?*

Not addressed.

*What conclusions on institutions and governance can be drawn from the document?*

In the application of this law, not only the interests of the Directorate-General of Public Works and Water Management are considered, but also other interests (multi-sector).

Construction of buildings in or on water infrastructure (in dikes) is not allowed to bring risks of dike failure. Because of this, no activities are allowed in or on dikes, without a permit of the Ministry of Transport, Public Works and Water Management (authority).

*What is especially relevant to our content analysis?*

Laws on water safety are quite strict: safety first (authority)

### **6.3.9 Law on Public Works and Water Management**

*What kind of document is it: about what, by whom, for whom?*

The Law on Public Works and Water Management of 1900<sup>38</sup> provides general rules on governance of water issues. For example, the existence and organization of the Directorate-General of Public Works and Water Management is based on this law (human resources).

Large parts of the law have become obsolete since the Water Board Law (1992) and the Law on Flood Protection (1995). The law has now become a part of the new Water Act.

*How is (adaptation to) climate change addressed in the document?*

Not addressed.

*What conclusions on institutions and governance can be drawn from the document?*

In an attachment to the law the organizational structure and the tasks of Directorate-General of Public Works and Water Management are described. Article 5a forms the legal basis for an independent Advisory Committee on Water Infrastructure Legislation (CAW), which has the task of advising on the content and structure of water infrastructure legislation (double loop learning).

*What is especially relevant to our content analysis?*

Not so relevant.

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<sup>37</sup> The text of the law can be found at: [http://www.st-ab.nl/wetten/0399\\_Wet\\_beheer\\_rijkswaterstaatswerken.htm](http://www.st-ab.nl/wetten/0399_Wet_beheer_rijkswaterstaatswerken.htm)

<sup>38</sup> The text of the law can be found at: text of the law can be found at: [http://www.st-ab.nl/wetten/0350\\_Waterstaatswet\\_1900.htm](http://www.st-ab.nl/wetten/0350_Waterstaatswet_1900.htm)

### 6.3.10 Water Board Law

*What kind of document is it: about what, by whom, for whom?*

The Water Board Law<sup>39</sup> regulates the status of water boards as public organizations. The new Water Board Law of 2007 has as main changes a new composition of the water board administration, a different procedure for elections, and changes in the system of levies.

The new water board administration can have no more than 30 members, with 7 to 9 seats for persons from specific categories such as companies, farmers and nature organizations (equity?). For these seats, candidates are nominated by interest groups. For the remaining seats inhabitants of the water board area can vote.

The different levies are integrated into one water system levy.

The Dutch Senate was critical about the specific seats and advised a more democratic procedure for the elections of 2012. The Secretary of State promised to evaluate the water board elections of 2008 and to decide on changing the law after that evaluation.

*How is (adaptation to) climate change addressed in the document?*

Not addressed.

*What conclusions on institutions and governance can be drawn from the document?*

Decisions on creating and dismissing a water board are made by provincial governments and have to be approved by the Ministry of Transport, Public Works and Water Management (authority). The law also allows water boards to demand levies from citizens and companies.

*What is especially relevant to our content analysis?*

The existence of water boards is very specific for the Netherlands and probably influential on how water is managed. Especially the fact that they have their own tax income gives them a lot of operational power.

### 6.3.11 Legal instruments of water boards

*What kind of document is it: about what, by whom, for whom?*

Water boards are using the following instruments to implement water policy: a water management plan, the water board ordinance, the ordinance-dispensation, the water board register (legger), and formal rules of appeal.

A water management plan is an integral policy plan at the more strategic level.

In a water board ordinance a water board can formulate rules for special safety zones. In these zones near water infrastructure it is not allowed to influence water ways, to develop construction activities or earthworks. Examples are digging of ditches, creating pipelines, discharging or extraction of water, or building of houses near dikes or sluices. The ordinance does not apply to maintenance or renovation of existing constructions.

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<sup>39</sup> The text of the law can be found at: [http://www.st-ab.nl/wetten/0349\\_Waterschapswet.htm](http://www.st-ab.nl/wetten/0349_Waterschapswet.htm)

To bypass the water board ordinance, a dispensation from the water board is necessary (next to the normal building permit from the municipality). The dispensation is not always used, especially with large projects (Warner et al 2007).

The water board register is a detailed set of tables and maps with norms and descriptions of water infrastructure and water management objectives. It lists the function of water works, their shape, direction, size and constructive characteristics, and the maintenance needed.

According to the formal rules of appeal, a water board can object against municipal plans. The rules are not used very often, because usually the water boards are involved by the municipalities in an early stage of the planning process (Warner et al 2007).

*How is (adaptation to) climate change addressed in the document?*

Like with the municipal water plans, each of the 26 water boards has its own water management plan, ordinance, and register and we did not look into all of those. It is likely that climate change will be a subject at the strategic level, especially for water boards who are also responsible for primary dikes. This is the case, for example, for Water Board Stichtse Rijnlanden, Water Board Amstel, Gooi and Vecht, and Water Board Zeeuws Vlaanderen. Measures needed because of climate change are creation of extra retention basins along rivers, reducing water nuisance in urban areas, and a new approach to dikes along the sea coast.

The other instruments are very detailed and oriented at the short term (day to day management, yearly plan) and climate change most likely is not a subject there.

*What conclusions on institutions and governance can be drawn from the document?*

The institutions of the water boards are detailed and operational. Mainly oriented on realizing water management goals and preventing that other actors break the infrastructure down again. There isn't much communication with citizens going on.

*What is especially relevant to our content analysis?*

Water board institutions seem detailed, technical and short term oriented. Not much responsibility. Climate change is taken into account in changing water patterns and higher flood defence.

### **6.3.12 Law on Municipal Water Tasks**

*What kind of document is it: about what, by whom, for whom?*

In 2008 the Law on Municipal Water Tasks became effective<sup>40</sup>. The law changes two existing laws: the municipal sewerage duties in the Law on Environmental Management, and the collection and transport of rainwater of the Law on Water Management. The law also introduces a new rule: the Municipal duty to take care of groundwater problems. In 2009 the Law on Municipal Water Tasks became a part of the new Water act.

*How is (adaptation to) climate change addressed in the document?*

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<sup>40</sup> The text of the law can be found at:  
<http://www.infomil.nl/contents/pages/142413/kst982611.pdf>

The law was a consequence of an advice of the Committee on Integrated Water Management of 2004. This Committee expressed the opinion that climate change and increased urbanization in the Netherlands made clear division of tasks more and more urgent. The law itself does not mention climate change, but the formal explanation letter does.

*What conclusions on institutions and governance can be drawn from the document?*

The goal of the law is to define the responsibilities for discharge and processing of water within municipalities more clearly. The Dutch Association of Municipalities wrote a brochure that explains the implications of the new law. The law emphasizes the responsibility of land owners to take care of drainage of their own land. Municipalities can, if necessary, demand the waste water to comply with more strict norms in quantity and quality. Communicative and financial means can be used to stimulate compliance. They can also publish specific ordinances for individuals and for whole areas.

Municipalities have to make a judgement if land owners are reasonably able to take care of the water on their land. If this is not the case, the municipal duty of care becomes effective. The municipality then had to provide the means (generally a sewer) to which the water can be drained off. The judgement has to be based on a cost-benefit analysis and has to be formulated in the municipal sewerage plan. The law also arranges for a municipal sewerage tax. The duty of care is mainly meant for urban areas. In rural areas, water boards and provincial governments have more means to solve problems.

The municipality can be approached in cases of structural groundwater nuisance, but the municipality is not liable. Research will then have to make clear if the municipality has fulfilled its duty of care.

Waterboards are responsible for the management of the surface water drained by the municipalities. Water boards can also prescribe criteria for drained water.

*What is especially relevant to our content analysis?*

The law makes explicit that land owners are responsible for the water on their own land. If climate change causes water problems more often, the citizens can not transfer the extra costs to the municipality. It seems hard to judge where the water that causes problems came from and who should have solved it.

### **6.3.13 Water test**

*What kind of document is it: about what, by whom, for whom?*

In the fifth National Spatial Strategy the Water test<sup>41</sup> is described as a new instrument to connect water policy and spatial policy. In 2001, in the Kick off agreement Water Policy for the 21<sup>st</sup> Century it was agreed to start with applying the Water test. In 2003, the Water test became a legal obligation for all spatial plans under the Spatial Planning Act.

Spatial plans can lead to water nuisance, reduction of water quality and increasing drought in nature areas. The goal of the Water test is to prevent such negative effects of

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<sup>41</sup> For more information on the water test see:

[http://www.verkeerenwaterstaat.nl/onderwerpen/water/050\\_water\\_en\\_ruimte/watertoets/](http://www.verkeerenwaterstaat.nl/onderwerpen/water/050_water_en_ruimte/watertoets/)

spatial plans and to try to fit water into new spatial plans in a positive way. The Water test integrates water into spatial plans and decisions in an early phase. Water boards are involved in an early stage, and water boards can give municipalities, provincial governments and the State advice on their spatial plans.

*How is (adaptation to) climate change addressed in the document?*

Climate change was one of the arguments to create the water test: “Because of climate change, there will be more extremely wet and extremely dry periods, with all kinds of consequences. Sea level rise, increased river discharge and soil subsidence. Spatial plans have to deal with these developments. The Water test is one of the instruments to achieve this.” (Explanation letter of the Water test)

*What conclusions on institutions and governance can be drawn from the document?*

The Water test encompasses the whole process of informing early, advice, assessing options and finally judging water management aspects in spatial plans. The process should lead to three products:

- Minutes of the preliminary meeting with the content and procedures that were discussed between the planner and the water manager;
- A water advice in which the water manager presents his vision on water in the area in which the plan is made. In the advice it is explained if a plan deals with water in an appropriate way.
- A water paragraph in the explanation letter of the plan or decision, in which the planner explains how the water interests have been dealt with in the plan.

It is a legal obligation for planners to go through the water test process and to produce the minutes of the preliminary meeting and the water paragraph (legitimacy).

Planners can be municipalities, provincial governments or state departments. The water manager can be a water board, but also the Directorate-General of Public Works and Water Management (State level) or a groundwater manager (i.e. a provincial government).

The provincial government has to judge if the Water test is implemented properly by municipalities. The new Spatial Planning Act has reduced this role of the provincial government somewhat.

Sometimes the water manager becomes involved in the implementation of the plan and most often also in the maintenance. In that case it is important to develop a maintenance plan and to agree on financial contributions to realize measures (resources).

*What is especially relevant to our content analysis?*

The Water test was evaluated at the national scale in 2007. It was concluded that the Water test was a good way to change the design of building sites to the hydrological circumstances. As a way of choosing locations, it does not work well. Water knowledge still does not feed into the municipal spatial plan nor in financial arrangements. The Water test is used for each individual plan, but it is equally important to judge hydrologic consequences of higher level plans and spatial strategies. All governments should cooperate more to integrate each others ambitions in the plans (collaborative leadership).

The Water test creates an arrangement for water managers and planners to cooperate during the creation of a new plan. The actual use of the water advice, however, is uncertain / is based on mutual trust.

### 6.3.14 Hierarchy of interests during droughts

*What kind of document is it: about what, by whom, for whom?*

The national Hierarchy of interests during droughts<sup>42</sup> defines how freshwater resources will be divided in times of drought (see table below). The Hierarchy of interests during droughts was created to decide on priorities towards different water users. The Cabinet and the Dutch Parliament approved of the Hierarchy in 2004. Since then the Hierarchy became effective. The Hierarchy is part of the Management Plan State Water (Beheersplan Rijkswateren).

Table 6.3: categories of the Hierarchy

Category 1: Safety and prevention of irreversible damage	Prevention of flooding and prevention of irreversible damage (in nature) has the highest priority when scarce water resources have to be allocated.
Category 2: Utilities	Sufficient drinking water and the functioning of energy production are very important for society.
Category 3: Small scale high quality use	When just a little water can prevent high damages, this falls into category 3. Examples are temporary irrigation of capital-intensive crops and process water for industry.
Category 4: Other interests	For the other interests, an economic judgement will be made between sectors, but nature is also assessed.

*How is (adaptation to) climate change addressed in the document?*

The drought of 2003 doubtlessly has influenced the creation of this list. Climate change may lead to more droughts, which calls for anticipatory rules.

*What conclusions on institutions and governance can be drawn from the document?*

The Hierarchy has to assist water managers to take decisions in difficult times.

*What is especially relevant to our content analysis?*

With these rules, the Dutch state is anticipating more droughts. The decisions will still be hard to make, but at least the liability will be less when this is already decided.

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<sup>42</sup> For more information on this instrument, see:

[http://www.verkeerenwaterstaat.nl/onderwerpen/water/droogte/\\_verdringingsreeks/](http://www.verkeerenwaterstaat.nl/onderwerpen/water/droogte/_verdringingsreeks/)

## 7. Sector Spatial Planning

### 7.1 Introduction

The state, provincial and municipal governments all have a role in spatial planning. The Ministry of Housing, Spatial Planning, and the Environment describes the main goals in spatial strategy plans, of which the fifth strategic plan is the most recent one. It states where in the Netherlands the urbanized area is allowed to grow fastly (for example, in Almere), where it can grow in a limited way (most of the other municipalities) and where it is not allowed to grow at all (for example, the Green Heart, an area around Gouda and Woerden).

Provincial governments make Structure schemes, Regional Plans or Environmental Plans. In these plans, space is allocated to functions like housing, industry, agriculture and nature.

Municipalities make land allocation plans for their own territory. They are the most important actors for the implementation of spatial strategies, because eventually they decide through building permits where new developments take place.

Municipalities are exercising some control over their municipal territory and can sometimes demand from citizens or companies to remove a building if permits are lacking. Provincial governments and the Ministry, however, rarely enforce any measures when municipalities do not follow the higher level rules.

The old spatial planning law was based on permits. A new spatial planning law has been adopted in 2008 which focuses more on spatial development. In the new law the responsibility is transferred more to the municipalities.

As was already became clear in Chapter 3 (Institutional Framework in The Netherlands) climate change adaptation and spatial planning are closely related in the Netherlands. Many of the documents mentioned in Chapter 3 are also relevant here.

### 7.2 Policy Development

#### 7.2.1 National Spatial Strategy

*What kind of document is it: about what, by whom, for whom?*

During the Cabinet Kok-II two Main Spatial Decision Procedures were started: the Fifth Spatial Planning Strategy and the Second Structural Plan Rural Areas. The Cabinet Balkenende –II (CDA, VVD, D66) decided to combine these two procedures in one Spatial Planning Strategy. This new National Spatial Strategy (Nota Ruimte: Ruimte voor Ontwikkeling) was adopted by the Senate of the Dutch Parliament in January, 2006. The strategy lays down the Dutch spatial policy until 2020, and provides a perspective for the period between 2020 and 2030.

The National Spatial Strategy describes the main guidelines for spatial developments in the Netherlands. The character of spatial policy shifts from creating order to allowing

development, and from central planning to decentralized planning. The goal is to involve many actors from society in the process (multi-actor, multi-level). At the same time, the vision of the Ministry is meant to be very clear to everyone (authority). The four main goals are:

- Strengthening the international competitive position of the Netherlands: for example, by improving public infrastructure such as transport facilities (entrepreneurial leadership);
- Creating strong cities and vital rural areas, in order to prevent social inequity within cities and between urban and rural areas (equity);
- Safeguarding and development of nationally and internationally important landscapes;
- Securing water safety where this is possible through spatial measures: mainly water safety.

The policy in the National Spatial Strategy is implemented through programs of different ministries. One example is the Multiyear Program Vital Rural Areas of the Ministry of Agriculture, Nature and Food Security.

*How is (adaptation to) climate change taken into account?*

Climate change is described as a problem spatial planning has to deal with: “Insight in the spatial consequences of climate change for the Netherlands (...) has grown over the last few years. Sealevel rise and the larger extremes in precipitation and drought which are expected, combined with soil subsidence in the low-lying western part of the Netherlands, and urbanization, make substantial adaptations necessary in the water system and in water management practices. The same is true for agricultural practices as well as for urban design. This strategy promotes water as a structural element, an integrated aspect of spatial planning.” This means that adaptation to climate change is one of the goals of this spatial strategy, especially related to water. The strategy allocates more space to rivers and coastal defence.

In Chapter 3, nature is also connected to climate change by emphasizing the role of robust corridors between nature areas. For example, the Decree on Spatial Planning States that when an area is redeveloped, the provincial government, the municipality and the waterboard have to map out all risks of negative effects on water quantity and water quality, and that they have to prevent, reduce or compensate for these negative effects. The Water Test is proposed as a means (see also chapter 6). This kind of regulation creates a flexible process with general ambitions and a decision procedure like the Water Test to incorporate new ideas in the solutions (learning). The National Spatial Strategy states that living in the neighbourhood of water also offers opportunities because people find it attractive.

*What conclusions on institutions and governance can be drawn from the document?*

The National Spatial Strategy has as a main guideline: ‘decentralized whenever it is possible, centralized when it is necessary’. This means that an area-specific approach in which all relevant stakeholders participate is preferred. The development oriented design of the spatial policy leaves room for more than one problem frame. ‘The State does not have a monopoly on wisdom, nor can it provide solutions to all problems.’ In some cases

the State level stays in the lead, in many other cases the State level is a partner (collaborative leadership). The costs of spatial decisions are also decentralized, although this is without any sign of budgetary reallocations from state to region. (resources). The Investment Budget Rural Areas (ILG) can be a resource for regional spatial projects; it does not provide a new budget but is a simplification of a number of other subsidies (resources).

In the National Spatial Strategy a difference is made between result responsibility and system responsibility. If the State level is responsible for the result, a lot of state leadership will be displayed, if there is system responsibility, this will be a lot less. Furthermore, for every policy decision in the National Spatial Strategy it is stated explicitly which government is responsible for its implementation: state, province or municipality. Every two years, the state wants to evaluate if the space for making regional policy is sufficient (learning).

When national interests are at stake, the central level is in the lead. The National Spatial Strategy introduces the concept 'Basic Quality': a set of generic rules which have to provide a minimum level for the whole country, for example for safety, housing quality and so on. Important principles are concentration of 'red' land uses like housing and industry within existing urban areas; limited local growth of urbanized areas to accommodate local population growth and economic growth; enough space allocated to green. The judgement if these generic rules are being followed is mainly to be done by the regional governments. (accountability). The National Spatial Strategy also describes a National Spatial Structure (EHS), which shows the main ideas for future development. Otherwise, the decisions on land use are left to the lower governmental levels. Evaluation can take place later on, based on the provincial and municipal spatial plans (accountability).

Chapter 3 describes general rules for the theme "water, nature and landscape." In this part the state and provincial level are considered mostly responsible ; municipalities much less.

Digital spatial plans are introduced to enable cooperation between different policy levels. Plans have to be available, clear and have to use similar terminology. They are being placed on the internet, like the National Spatial Strategy itself. This also creates better access for citizens (multilevel, multi-actor).

By emphasizing development oriented planning principles the government takes a step back, providing more room to 'civil society'. The government becomes one of the actors. Public-private partnerships are stimulated, see also Interdepartmental Taskforce PPS.

The National Spatial Strategy points out that spatial strategy is always dealing with conflicting interests, and that spatial choices always have consequences for others. Causal agent principle: in spatial decisions and new spatial plans, projects and activities the transfer of negative effects to other parties is not allowed (equity). The actor taking the initiative has to solve raising problems, and the bill cannot automatically be passed on to the state.

The independence of citizens needs to be strengthened, because of external safety issues, for example, the risks caused by transport of dangerous chemicals (capacity to improve).

A three layer approach is introduced to describe space: 1 physical and biological surface; 2 infrastructural networks and 3 occupation and use by humans.

*What is especially relevant to our content analysis?*

Climate change is part of the National Spatial Strategy. It is translated to more space for water and for nature. The Water Test is seen as an instrument to safeguard water interests. As far as institutions are concerned, the National Spatial Strategy strives towards more decentralized responsibility. At the same time, the strategy is very explicit about state and provincial responsibilities, but much less about municipal responsibilities. The strategy wants to improve cooperation with NGO's and the private sector. Citizens have to be informed better through the internet.

### **7.2.2 Urgency Programme Randstad**

*What kind of document is it: about what, by whom, for whom?*

The Randstad is the most urbanized region of the Netherlands. It includes the three largest cities Rotterdam, Amsterdam and The Hague. In 2007, the Urgency programme Randstad became operational to make the Randstad internationally more competitive<sup>43</sup>. The goals of this interdepartemental, three year programme are sustainable economic development and good social conditions. The programme consists of 40 projects, which have led to a total of 242 decisions in 2010. The Minister of Transport, Public Works and Water Management is leading this programme.

*How is (adaptation to) climate change addressed in the document?*

Climate change is a relatively important part: in the programme document 3 pages out of 64 are on the consequences of climate change for the Randstad. The issue is that the whole Randstad, the area that is most relevant for the Dutch economy, is below sea level. This leads to a spatial dilemma: should we gradually move all economic activities to higher ground, or can we make the Randstad 'the safest delta in the world'? The programme continues to work with the second of those options. Several of the 40 projects aim at adaptation to climate change. The project Groot Mijndrecht Noord, for example, aims for a climate proof, sustainable development of the polder Groot Mijndrecht Noord'. With the project 'Approach Weak Links along the Coast' the coastal defence at Noordwijk, Scheveningen and Delfland will be strengthened. In the projects Haarlemmermeer and Zuidplaspolder future water management is an important theme.

*What conclusions on institutions and governance can be drawn from the document?*

The programme seems mainly a coordinating effort from the state level. Most of the projects are already ongoing at the regional level, but they receive extra attention from the state level. More political decisions are made in the 40 projects as a result.

*What is especially relevant to our content analysis?*

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[http://www.verkeerenwaterstaat.nl/onderwerpen/mobiliteit\\_en\\_bereikbaarheid/randstad\\_urgent/](http://www.verkeerenwaterstaat.nl/onderwerpen/mobiliteit_en_bereikbaarheid/randstad_urgent/)

The rising sea level is seen as a threat to the competitiveness of the Netherlands, especially its low-lying economic centre. Therefore, this programme is an extra effort to improve the stable image of the Netherlands and to create some extra momentum in ongoing projects to make the Randstad more climate proof.

### 7.2.3 The Future of the Netherlands - MNP

*What kind of document is it: about what, by whom, for whom?*

In the report *The Future of the Netherlands (Nederland Later)* (Kuijpers-Linde et al, 2007) it is researched how all future developments in the Netherlands can be guided towards a sustainable spatial design. Six policy themes are described where persistent Dutch problems are expected. Based on this the most promising combinations of future ambitions are proposed to be achieved in the Netherlands in 2040. It is the second formal sustainability exploration that is written for the Dutch government by the environmental agency MNP.

*How is (adaptation to) climate change taken into account?*

Climate change is one of the six policy themes. MNP puts only water issues under this heading, mainly flood risks due to sea level rise and river discharge. Precipitation, increased seepage and salinization receive less attention. Another policy theme is biodiversity, but climate change is not mentioned there. Under the policy theme agriculture only the quality of the landscape is addressed; climate change is not mentioned here either.

'Adaptation to climate change' is one out of nine indicators for sustainable development in the report. Next to this, MNP uses 'Safety against flooding' as an indicator. Measures connected to the adaptation indicator are:

- Locate new housing developments outside of risk areas to solve seepage problems.
- More space for water in and around cities increases retention capacity.

The report recognizes that nature policy and climate policy can be synergetic: both domains have an interest in more space for water.

*What conclusions on institutions and governance can be drawn from the document?*

One of the main conclusions is that several policy goals have to be connected into a coherent spatial policy, in order to achieve sustainable spatial development. Four clusters of themes are described in which such connections are made. For climate change the connection between flooding, nature development and landscape quality seems the most interesting one. The policy actions proposed by MNP are presented in the tables below (the division over governmental levels is made by us).

Table 7.1: Proposed measures in *The Future of the Netherlands* in the theme cluster urbanization, safety and biodiversity.

<i>Overview of possible policy activities</i>	<i>National measures</i>	<i>Measures other governmental levels</i>
Connecting urbanization, safety and	• Spatial reservations IJssel valley, IJsselmeer, Volkerak-Zoommeer,	• Robust design of renovated and new urban developments (sewage

biodiversity	<p>Grevelingen</p> <ul style="list-style-type: none"> <li>• Strengthening spatial cohesion of developments in delta, river areas, Ijssel valley and Ijsselmeer area</li> <li>• Differentiation in safety norms; conditions for new urban developments</li> <li>• International agreements on river discharge management</li> <li>• Write down conditions for urban expansion (for example, Almere, Kampen, Deventer, Zutphen, Dordrecht)</li> <li>• Securing National Ecological Network and Natura 2000 in spatial plans</li> <li>• Expansion of Natura 2000 and adaptation of land purchasing policy for National Ecological Network</li> <li>• Compensation for agricultural environmental management in sensitive areas</li> <li>• Improvement of water quality in large water bodies</li> <li>• International communication that the Netherlands has the safest delta in the world</li> </ul>	<p>system, water retention at the surface)</p> <ul style="list-style-type: none"> <li>• Adapt urban areas to differentiated safety norms</li> <li>• Acceleration in renovating dikes and construction of new, more robust types of dikes.</li> </ul>
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Another cluster of policy domains that has shared interests, according to the MNP, is agriculture, nature and landscape quality. The authors state that this has nothing to do with climate change; instead, it is caused by spatial pressure from population growth and economic development. The measures that are considered as relevant by the MNP are shown in the table below.

Table: Proposed measures for the cluster agriculture, nature and landscape quality in The Future of the Netherlands.

<i>Overview of possible policy activities</i>	<i>National measures</i>	<i>Measures other governmental levels</i>
Connecting agriculture, nature and landscape quality	<ul style="list-style-type: none"> <li>• Spatial reservations for National Landscapes, urban buffer zones, peat meadows</li> </ul>	<ul style="list-style-type: none"> <li>• Better planning of new industrial areas</li> <li>• Concentration of glass</li> </ul>

	• Compensation for agrarian landscape management	ture, live stock industry, arboriculture, and bulb farms
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Finally, the report concludes: “There is no completely new policy vision needed to implement these measures. The National Spatial Strategy and several other policy documents already contain a lot of measures which are going in this direction. The Monitoring of the Spatial Strategy, however, shows that not all goals are achieved. Furthermore, a study shows that for safety against flooding on the long term and for international obligations for nature extra policies are needed.”

*What is especially relevant to our content analysis?*

- There seems to be enough attention for water related safety.
- Climate change is perceived as a problem for water management in the Netherlands. Heat waves and insect plagues are not mentioned yet.
- Properly functioning intersectoral policy is seen as one of the most important preconditions for sustainable development.
- Several national guidelines seem urgently needed. Will the Dutch culture allow for them to be accepted?

#### **7.2.4 Dissertation Dutch land use planning**

*What kind of document is it: about what, by whom, for whom?*

The dissertation of Eric Koomen<sup>44</sup> has an article ‘Analysing the success of open-space reservation in the Netherlands’. This analysis compares how a so-called ‘buffer zone’ in the Randstad (Midden Delfland) would have developed autonomously, based on economic factors, and how it has really developed under the influence of the restrictive measure. A buffer zone is a green corridor with a minimal breadth of 4 km between urban (red) areas (p130). The conclusion is that the restrictive measure is successful.

*How is (adaptation to) climate change taken into account?*

Climate change is part of the dissertation but not of the article on open spaces mentioned above.

*What conclusions on institutions and governance can be drawn from the document?*

The report identifies the buffer zone concept as a successful measure because there is support in society as well as in politics; because the government of Midden Delfland operated tactically smart by giving the boundary areas a recreational function; and because well-functioning institutions are available:

- Obligatory buying of land (expropriation);

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<sup>44</sup> Koomen, Eric, Barrie Needham. (2008). Spatial analysis in support of physical planning (dissertation); Dutch land use planning: planning and managing land use in the Netherlands, the principles and the practice. The Hague, SDU Publishers, 1007

- A permit system for building activities.

The weakening position of farmers, however, is seen as a risk factor for the buffer zone concept.

*What is especially relevant to our content analysis?*

The article shows that an institution like the buffer zone concept can be a solution if spatial reservations are needed for adaptation to climate change. Such an institution has to be acceptable for society and it needs practical tools such as expropriation rules and a permit system for building activities.

## 7.3 Laws and instruments

### 7.3.1 Spatial Planning Act (Wet Ruimtelijke Ordening)

*What kind of document is it: about what, by whom, for whom?*

The revised Spatial Planning Act (Wet ruimtelijke ordening, WRO<sup>45</sup>) became effective in 2008. The new law is an important instrument for the implementation of the National Spatial Strategy. It replaces the old law of 1965.

According to the Wro, the state and provincial government are responsible for creating clear preconditions for the integration of water in local spatial plans. When the preconditions are clear, there can be more space for local development. (For these preconditions, there are no more doubts to be discussed). State and provincial government also have the possibility to change local planning after the fact, if this is deemed necessary from a national viewpoint (Warner et al 2007). The new law has to make sure that policies from higher levels are implemented, that different interests are more tuned in to each other, that interests at different levels become more integrated, that stakeholders have a better position and that enforcement of the regulation is ensured (Needham, 2005).

*How is (adaptation to) climate change addressed in the document?*

Climate change is not directly part of the Wro. The new law only provides the procedures for deciding on land use. There are, for example, no goals concerning sustainability in the law (Needham, 2005). The formulation of such goals is left to the state, provinces and municipalities in their strategic plans. In a letter to Parliament, the minister of Spatial Planning, Housing and the Environment emphasizes that the influence of the Water test on spatial planning has to be strengthened to enable climate adaptation (Tweede Kamerstuk 119328, June 6<sup>th</sup>, 2008). At the same time, some authors state that water interests are weakened by the new law (Kamphorst et al, 2008) for the following reasons: water managers can not make spatial plans; starting the water test procedure has become part of the informal pre-consultation so it depends on the pro-active attitude of a water board; and the provincial government does not automatically check if the water test has been implemented.

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<sup>45</sup> The text of the law and more information on the law can be found at:

<http://www.vrom.nl/pagina.html?id=7010>

According to Kamphorst et al, Space for the River and coastal defence are still safeguarded by structural planological decisions. Intensive pre-consultation and implementation plans (inpassingsplannen) make climate adaptation possible at higher levels of scale (for example, water retention areas, expansion of the National Ecological Network).

*What conclusions on institutions and governance can be drawn from the document?*

In the new Spatial Planning Act the following types of plans exist:

- *Strategic spatial plans* (structuurvisies) at the state, provincial and municipal level. They are all integral and indicative and they only are binding for the government who designed the plan and not for other governments. Water plans at the provincial level are also defined as strategic plans. Every strategic plan has to have an implementation paragraph.
- *Spatial implementation plans at the municipal level* (Bestemmingsplannen). These plans are the legal basis for building permits and demolition permits. The spatial implementation plans have to be revised every ten years. More frequent changes are also allowed to maintain flexibility. (Kamphorst et al 2008).
- *Project decision* (Projectbesluit) For large scale projects that can not become part of the spatial implementation plan on time with small changes, a project decision is necessary (Needham, 2005). A year after a project decision has been approved, it has to be part of a new spatial implementation plan.
- *State and provincial implementation plans* (Inpassingsplannen): In the new law provincial and national governments also have the power to produce implementation plans with the same legal status as the municipal plans. For these areas, they can also issue building permits (Needham, 2005). State and provincial implementation plans have priority over municipal plans (authority).

In the old situation, municipalities were very powerful, and they would often act against the will of higher level governments. Often it was not so clear which rules were binding and which ones were negotiable (Kamphorst et al 2008). The new law tries to provide more clarity. National and provincial governments can produce framework rules for municipalities or provincial governments (*Algemene maatregel van bestuur (Amvb)* at the state level and *provinciale verordeningen* by provincial governments). State and provincial governments can demand cooperation in spatial planning, a municipality can request cooperation. Hopefully, the municipalities feel as responsible for spatial quality as before (room for autonomous adaptation).

Legal procedures have been simplified and speeded up: municipalities have to finish their implementation plans sooner. Only legal entities with a legally protected interest in the outcome of an implementation plan can object, not everyone. This speeds up the procedure, but reduces the democratic influence (responsivity).

The provincial government does not have to approve all municipal plans anymore. National and provincial governments have a right to comment on draft implementation plans. A municipality has to react on those comments. There are four phases of comments: deliberation, bringing in a formal opinion (*zienswijze*), a pro-active assignment (*proactieve aanwijzing*) if agreements are not followed up, and finally a reactive assignment (*reactieve aanwijzing*) to block a municipality's decision. When a municipality

gives out an unwarranted permit, the Ministry of Spatial Planning can withdraw the permit. All these rules are to prevent single power of municipalities (Needham, 2005). According to research by Kamphorst et al (2008) the provincial governments prefer deliberation over the more strict instruments.

The law has more positive elements for project developers than before. Financial provisions are better and more consistent (entrepreneurial leadership). In the old situation there was a right for compensation when a spatial plan caused damage; in the new law this is more difficult. In the old situation the municipality was responsible for preparing a site for building activities; in the new law project developers have to pay as well. This is regulated with the ground exploitation law (see paragraph 7.8).

*What is especially relevant to our content analysis?*

The Spatial Planning Act is a process law that does not regulate the content but only the procedures of decisionmaking. As long as climate change is considered an important issue, the law can function well. The law has something of a paradox because it introduces more development oriented planning and at the same time it creates many possibilities for the national and provincial level to counteract the plans. There is a lot of attention for deliberation between governments (collaborative leadership). In the final phase, the possibilities for objections are reduced. Only directly involved parties can make objections, which limits the influence of other actors in society. Hopefully, these actors are involved in the deliberation stage of making spatial policy.

### **7.3.2 Law on cooperative regulations**

*What kind of document is it: about what, by whom, for whom?*

The Law on cooperative regulations (Wet gemeenschappelijke regelingen<sup>46</sup>) is a law that allows municipalities to cooperate in specific areas. Cooperation can be organized in the areas of spatial planning, housing, land policy, environment, economic development and traffic and transport. Usually, a new organization will be installed to execute the shared task, for example a company to collect waste of several municipalities. The law dates from 1984 and was adapted in 1994 and 2006.

*How is (adaptation to) climate change taken into account?*

Climate change is not mentioned.

*What conclusions on institutions and governance can be drawn from the document?*

The initiative for cooperation comes from municipalities. The provincial government decides in which areas collaboration can exist, and the national government decides on division of responsibilities.

*What is especially relevant to our content analysis?*

The law could be used to stimulate cooperative adaptation when solutions have to be implemented across municipal borders. However, it does not seem so relevant now.

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<sup>46</sup> [http://www.st-ab.nl/wetten/0503\\_Wet\\_gemeenschappelijke\\_regelingen\\_Wgr.htm](http://www.st-ab.nl/wetten/0503_Wet_gemeenschappelijke_regelingen_Wgr.htm)

### 7.3.3 Law on priority rights for municipalities

*What kind of document is it: about what, by whom, for whom?*

According to the Law on priority rights for municipalities (Wet voorkeursrecht gemeenten, 1981<sup>47</sup>), a municipality can claim a priority right on a certain piece of land for a specific period. The land owner then has to offer the land for sale to the municipality first. When the owner and the municipality cannot reach an agreement, as a last resort a committee can decide on the price. The law has been changed together with the Spatial Planning Act in 2008.

*How is (adaptation to) climate change taken into account?*

Climate change is not directly taken into account.

*What conclusions on institutions and governance can be drawn from the document?*

The priority right can be based on a municipal strategic land use plan; or when an area has been denominated as restructuring area, or when a project decision applies to a certain piece of land. Provincial and national governments can also claim a priority right through an implementation plan or a project decision. A higher level then has priority over a lower level government (authority).

*What is especially relevant to our content analysis?*

The priority right could be applied to make spatial reservations for water or nature.

### 7.3.4 Compulsory Purchase Act

*What kind of document is it: about what, by whom, for whom?*

According to the Compulsory Purchase Act (Onteigeningswet, 1851<sup>48</sup>) the government can buy land from land owners on a compulsory basis. When the former law (on priority right) has not led to acquiring the land, the government has an opportunity to use this procedure. The land owner has to be paid the full market value, lost income and other damages. The one who is bought from should not lose income or capital.

*How is (adaptation to) climate change addressed in the document?*

Compulsory purchase can be used for acquiring land with a nature purpose (for example, the National Ecological Network), a water retention purpose, or for building purposes (housing, transport infrastructure). When nature is the purpose, there is a maximum limit to the price of the land; for other purposes this is not the case (Raad Landelijk Gebied 2008).

*What conclusions on institutions and governance can be drawn from the document?*

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<sup>47</sup> The text of the law can be found at: [http://www.st-ab.nl/wetten/0963\\_Wet\\_voorkeursrecht\\_gemeenten\\_WVGem.htm](http://www.st-ab.nl/wetten/0963_Wet_voorkeursrecht_gemeenten_WVGem.htm); more information on the law can be found at: <http://www.vrom.nl/pagina.html?id=21754>.

<sup>48</sup> The text of the law can be found at: [http://www.st-ab.nl/wetten/0215\\_Onteigeningswet\\_OW.htm](http://www.st-ab.nl/wetten/0215_Onteigeningswet_OW.htm)

There are strict criteria for application of the law (necessity, urgency). The government has to prove that the compulsory purchase is a common interest<sup>49</sup>. The government needs to have concrete implementation plans and building plans.

Firstly, the government tries to come to an agreement with a land owner. If this does not lead to success, the compulsory purchase procedure is started. The land owner can formally object during the procedure, and finally the Crown<sup>50</sup> has to approve. Finally, the decision goes to court, where a judge decides if the compulsory purchase is legitimate, and how much compensation the land owner should receive. After this, there is no appeal possible.

*What is especially relevant to our content analysis?*

The law can be used for climate change adaptation when necessary, for example to create water retention areas.

### **7.3.5 Land exploitation law**

*What kind of document is it: about what, by whom, for whom?*

The new Land exploitation law (Grondexploitatiewet or grex law) of 2007 was announced in the Land Use Strategy of 2001 (Nota grondbeleid 2001). Before this law was active, project developers would own the land before municipalities decided to build on it. Then the municipalities had to pay all preparatory infrastructural costs (roads, water works) and in the negotiation the project developer had the best position. In the past, this would often lead to endless deliberations (Needham 2005).

When the land is already owned by a private party, and compulsory purchase is not possible or the municipality does not want to use this procedure, the 'grex law' offers opportunities to reclaim the land preparation costs. The law is connected to the Spatial Planning Act.

With this law municipalities have better opportunities to put forward certain demands for new developments. The costs can be reclaimed from the developer or land owner. The extra costs that occur outside of the plan (for example, adaptation of a dike to protect a new housing area) can be reclaimed. There is, however, one condition: exploitation has to remain profitable.

The Land exploitation law applies to municipalities. If other governments are in a similar position with project developers, the law also applies.

*How is (adaptation to) climate change addressed in the document?*

Climate change is not addressed directly, but possibilities for supporting adaptation in this law are mentioned. The 'grex law' may offer the opportunity to increase the effectiveness of national buffer zones, especially around cities.

*What conclusions on institutions and governance can be drawn from the document?*

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<sup>49</sup> The text of the law can be found at: [http://www.st-ab.nl/wetten/0215\\_Onteigeningswet\\_OW.htm](http://www.st-ab.nl/wetten/0215_Onteigeningswet_OW.htm)

<sup>50</sup> i.e. the Dutch Queen.

There are two ways to reclaim the costs of developing land, through civil law and through public law.

Civil law: there are two types of agreement on land exploitation, anterior and posterior. Anterior: parties negotiate about an exploitation plan. there is much room to negotiate, because in this case there are no further rules in the law. Parties close financial deals and this can include indirect costs outside the specific plan such as improving a dike elsewhere. Posterior: When an exploitation plan is final. If this contains financial arrangements, parties have to stick to them. If there are no financial arrangements, the municipality can not reclaim any costs.

Public law: When a spatial implementation plan is made or when it changes, when a project decision is made, or a project decision is changed, the municipality has to reclaim costs. Civil law agreements are preferred, but if parties do not succeed in coming to such an agreement, the municipality has to reclaim the costs through public law. Then the municipality has to make an exploitation plan by itself, in which all services, infrastructure and public spaces are described. All costs have to be mentioned, for construction as well as maintenance. Division of the costs over different parties depends on the value of the land. A building permit can only be issued when the party exploiting the land contributes in the service costs. The exploitation plan can also contain specific demands for a location. The service costs can not be more than the benefits from the exploitation of the land. In that case the land owner has to be paid back.

*What is especially relevant to our content analysis?*

It is a detailed piece of legislation that tries to create better negotiations between public and private partners in new building developments. It is quite new legislation and it is not clear yet how such detailed prescriptions will work out in practice. If it works well, it should become less attractive to build in locations that are bad from a water management perspective. If higher costs of such locations have to be paid by developers, they will probably withdraw.

### **7.3.6 Strategic Environmental Assessment**

*What kind of document is it: about what, by whom, for whom?*

Since 1994, there is a chapter in the Environmental Management Act<sup>51</sup> which prescribes that for certain projects with a possible negative effect for the environment a Strategic Environmental Assessment has to be made by the originator of the plan (Chapter 7, articles 7.1-7.43, MER & Strategische Milieubeoordeling). Examples of such activities are building oil refineries, highways, spatial implementation plans and changing water levels in polders. It has to result into a strategic environmental assessment report (MER). In a MER the expected consequences of a project on the environment are described, as well as alternative options that could mitigate these consequences (learning).

In 2001, the European Directive for Strategic Environmental Assessments was established (nr. 2001/42/EG). In the Netherlands, this Directive is known as the *Strategische*

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<sup>51</sup> The text of the law can be found at: [http://www.stab.nl/wetten/0613\\_Wet\\_milieubeheer\\_Wm.htm](http://www.stab.nl/wetten/0613_Wet_milieubeheer_Wm.htm), see also Chapter 3 of this report

*Milieubeoordeling*, or shortly SMB. It is an obligation for strategic plans that form the framework for judging projects that have to make a MER. The SMB, also called *planMER*, is in many ways comparable to an ordinary MER, apart from the fact that it is aiming at spatial plans in progress. The ordinary MER, which is also called *projectMER* since 2001, is only for final plans and results in a MER report. The goal of the *planMER* is to map out environmental effects in an early phase and to anticipate on them.

The European Guideline for the protection of natural habitats also contains a rule that an assessment has to be made for activities that may have an effect of the habitats of protected species. This is called the appropriate assessment (*passende beoordeling*).

*How is (adaptation to) climate change addressed in the document?*

Climate change is only mentioned in the document<sup>52</sup> as a possibly negative consequence of a strategic decision for the environment, i.e. the emission of greenhouse gases. Adaptation to climate change is not mentioned. Jeuken *et al.* (2008) propose to make adaptation explicit in the Environmental Management Act in order to make clear what the effects of a plan are on climate adaptation. An example would be if it was made an obligation to test a plan against different climate scenarios.

*What conclusions on institutions and governance can be drawn from the document?*

In September 2006, the EU Strategic Environmental Assessment /SBM/ PlanMER was implemented in the Dutch legislation by changing the Environmental Management Act and the related Dutch regulation on strategic environmental assessments of 1994. In an effort to improve efficiency, the Dutch law is rather precise in describing which plans do and which ones do not need a PlanMER. Still, in theory it is possible that the PlanMER procedure has to be completed four times for the same area, if strategic spatial plans are made, respectively, at the national, regional, and municipal level, followed by a project plan (redundancy?).

A PlanMER is an aid in planning procedures, therefore, it is expected to lead to learning. There are seven steps according to the Environmental Management Act:

1. Public Announcement: informing the public, an organized start (fair governance).
2. Deliberation on the content of the PlanMER with (other) governments that can be influenced by the plan (collaborative leadership).
3. Writing the Strategic Environmental Assessment Report; for this report there are the following specifications in the law:
  - Content and goals of the plan that is under assessment, including the relation with other plans;
  - Present condition of the environment and expected development of the environment if the plan would not be implemented;

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<sup>52</sup> “Handreiking milieueffectrapportage van plannen (planmer). Europese richtlijn milieubeoordeling van plannen. Implementatie in Wet milieubeheer & Besluit m.e.r. 1994”, Ministerie van VROM

- Relevant policy goals for an area and the way in which the plan integrates those goals;
- Description of possible negative environmental effects of a plan, and description of reasonable alternatives for a plan and the effects of those alternatives, including a description on how the effects were investigated;
- Description of possible effects of the plan on areas which are protected within the framework of Natura 2000.
- Description of possible measures that would mitigate or prevent the negative environmental effects (learning).
- An overview of issues for which knowledge or information are lacking (learning).
- Proposed ways for monitoring (learning and accountability).
- A summary that is understandable for the general public (responsivity).

4. Public presentation of PlanMER and draft plan; formal participation procedure of minimally 4-6 weeks for filing comments on and objections against the plan (responsivity); sometimes deliberation with governments from neighbouring states; and, if necessary, formal judgement on the quality of the PlanMER by an independent MER Committee (fair governance).

5. Decision by the responsible government to approve the plan; including a description how PlanMER and formal participation procedure have influenced the final plan (accountability); and including a description which aspects have to be evaluated later (accountability).

6. Announcement and publication of the final plan (fair governance).

7. Evaluation after realisation: monitoring of environmental effects (learning en accountability).

*What is especially relevant to our content analysis?*

This could become an influential instrument. It would be favourable when climate change adaptation became a formal issue to be judged. It will remain a difficult issue at which level of scale climate effects need to be assessed.

### **7.3.7 Environmental Cost Benefit Analysis**

*What kind of document is it: about what, by whom, for whom?*

Since 2000, an Environmental Cost Benefit Analysis (maatschappelijke kosten baten analyse - MKBA) is compulsory for large scale infrastructural plans in the Netherlands<sup>53</sup>. It is sometimes also made on a voluntary basis for smaller scale projects. An MKBA describes all consequences for all involved parties in society in economic terms. They can be positive consequences such as a new opportunity for nature development, or negative

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<sup>53</sup> See [http://www.belvedere.nu/download/pop\\_financiering/Instrumenten%20Belvedere%20-%20MKBA%20\(III\\_D\\_39\).pdf](http://www.belvedere.nu/download/pop_financiering/Instrumenten%20Belvedere%20-%20MKBA%20(III_D_39).pdf)

consequences, for example a compulsory purchase of farmland. The consequences are translated to monetary terms wherever this seems possible. There is also attention for the allocation of costs and benefits.

*How is (adaptation to) climate change addressed in the document?*

Addressing climate change is not a specific demand, but it can be part of an MKBA if the long term is assessed. Unfortunately, money of the distant future has a very low value in the present economic assessment methods.

*What conclusions on institutions and governance can be drawn from the document?*

The MKBA plays a role in the decision of governments to approve of a plan and to issue building permits (accountability).

*What is especially relevant to our content analysis?*

In the Zuidplaspolder there has been an experiment with the MKBA instrument. The outcome was that the effects of climate change are expected after such a long period that they are irrelevant for economic calculations in the present time. The conclusion was that other arguments than direct financial benefits are necessary to motivate implementation of climate adaptation options.

### 7.3.8 Building regulation

*What kind of document is it: about what, by whom, for whom?*

In the Building Regulation (Bouwbesluit<sup>54</sup>) the Dutch state has described technical rules with which all buildings have to comply: family houses, offices, shops and so on. These rules can concern usability, human health and safety, and the environment. The latest version of the Building Regulation dates from 2003 and contains minor revisions from 2008.

*How is (adaptation to) climate change addressed in the document?*

The following sets of rules are relevant for climate change:

- Rules for water proofness of buildings: mainly aiming at human health (prevention of mold growth); not yet at climate change;
- Energy Efficiency Coefficient (EPC): to prevent waste of energy; this concerns climate mitigation, not adaptation. Prevention of urban heat effects is not yet part of the Dutch regulation.

*What conclusions on institutions and governance can be drawn from the document?*

It is an instrument from the national government with detailed prescriptions for the building and construction sector.

*What is especially relevant to our content analysis?*

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<sup>54</sup> More information on this instrument can be found at:

[http://www.vrom.nl/pagina.html?id=18258&ref=http://www.google.nl/search?hl=nl&source=hp&q=het+bouwbesluit&rlz=1R2SUNC\\_enNL355&aq=f&aqi=g1&aql=&oq=&gs\\_rfai=](http://www.vrom.nl/pagina.html?id=18258&ref=http://www.google.nl/search?hl=nl&source=hp&q=het+bouwbesluit&rlz=1R2SUNC_enNL355&aq=f&aqi=g1&aql=&oq=&gs_rfai=)

Rules for prevention of urban heat effects and rules for building in areas outside of dikes are lacking in the Building Regulation. The regulation could also demand architects to consider the usability of a building on the long term, for example after 70 years (which is the average lifetime of houses in the Netherlands).

### **7.3.9 Environmental permit**

*What kind of document is it: about what, by whom, for whom?*

A recent plan of the Dutch government is to combine several permits into one Environmental permit<sup>55</sup>. This would make procedures easier for applicants because they only need to go to one governmental agency to receive a permit for a building or development activity.

*How is (adaptation to) climate change addressed in the document?*

Climate change is not taken into account. According to Jeuken *et al.* (2008) merging everything into one procedure also offers an opportunity to add climate proofness as an integral way of judging when environmental permits are granted.

*What conclusions on institutions and governance can be drawn from the document?*

The idea has not been developed into specified rules yet.

*What is especially relevant to our content analysis?*

An integral permit system may be a useful instrument to promote climate proofness.

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<sup>55</sup> More information on this instrument can be found at:  
<http://www.vrom.nl/pagina.html?id=18484>

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