

English appendix

the environment in the greater Rotterdam region

2007

The environment in the Rotterdam region 2007

This appendix contains the English translation of the summary and the introductory paragraphs of the chapters of the report called 'HET MILIEU IN DE REGIO ROTTERDAM 2007'. We have also included a translation of the graph titles and the unique indicator numbers, referring to the page numbers in the main report. The report is a result of a co-operation of regional environmental authorities. This co-operation is called 'Milieumonitoring Stadsregio Rotterdam (MSR)'.

Together with this appendix and the graphs in the report itself, we hope to give a good insight into the environmental quality in the Rotterdam area and of the efforts that are being made to improve this quality.



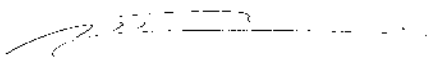
Foreword

In the foreword to the 2005 report I wrote: “the Rijnmond Region has great ambitions”. This is still the case, but in the past year those ambitions have increased substantially. For decades efforts have been made towards achieving energy-efficiency and sustainability. But the speed of the developments during the last few months has been tremendous. The attention focused on increasing awareness about our energy consumption, the realisation that radical changes are in fact needed and the targets that have been formulated for CO₂ reduction could certainly be called great ambitions. Reports from the IPPC demonstrate that a global reduction in greenhouse gas emissions of 50 - 80% is needed to limit the global temperature increase to a maximum of 2 degrees Celsius.

Europe, the Netherlands and Rotterdam have chosen to set an ambitious target. In the Rotterdam Energy and Climate Programme, the aim is to achieve a reduction of fifty percent by 2025 compared to the year 1990. This is what you might call an ambition that attests to administrative courage. But also an ambition which compels innovation and change in our own behaviour. Here we also find the basis for a much more complex process in order to make our society more sustainable. It is an accelerated development and these are always spectacular. The attention devoted to and efforts put into CO₂ reduction will also have an effect on other tough environmental issues which the Netherlands has been battling with for years and whose progress continues to be laborious. The improving air quality will benefit from the development of clean technology and the use of clean and sustainable energy sources.

Developments which must continue to be actively stimulated in the coming years, the authorities play an important role in this. The business sector will have to show how innovations can be put into practice and we, you and I, will have to be prepared to adjust our consumption behaviour. But in the short term too substantial progress can be achieved. The special MSR theme this year, “Energetic in Rijnmond”, shows that there is still a lot to gain; a great deal of residual heat is lost and energy is still often being used inefficiently. The Rijnmond area has the capability to use the residual heat released by industry to supply heat to around one million Dutch homes.

Ambitious targets arouse reactions, the scientific community is becoming involved. The relationship with CO₂, the part played by human beings in this and the impact on climate change has still not been adequately proved. Al Gore has been criticised. Scientific discussions will have to be held, but the sense of urgency is unmistakable. The effects of climate change are becoming apparent; I can't see any harm in hurrying things along a bit. CO₂ is a global issue that also requires a global approach, but many of the initiatives must develop locally. Think globally, act locally.



mr. M.A. Bakker

Chair of the Rotterdam Regional Council of Governments Environmental Monitoring Steering Group
Schiedam, June 2007



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Summary

General

The cover of this report has a dot on the spine. This dot has appeared on each of the MSR reports ever since 1995. If all the MSR reports which have been published to date are stood side by side the dots will be seen to show a steady upward trend in environmental quality until 2000, with only a slight downturn in 1997.

For the last seven years the dot on the MSR reports has remained at the same level. Some successes have been achieved, but in addition there are also areas still requiring attention. This summary briefly outlines the most important positive and negative developments for each theme. For the future, joint efforts will be aimed at maintaining current levels. Progress is expected on a number of projects, including the Rijnmond Regional Air Quality Action Programme, the development of the Warmtebedrijf (Heat Company) and, relating to external safety, the Programme Financing 2 for the period 2006-2010.

The world does not stand still. Developments on a world scale affect the environment in the Netherlands. In 2006, climate change was accorded an even higher priority on the agenda, partly due to the efforts of prominent American politicians. Al Gore's film *An Inconvenient Truth* has had a major impact on the awareness of both politicians and populace regarding the potential consequences of climate change and the need for taking timely measures. The Clinton Climate Initiative encourages large cities to halve their CO₂ emissions in the long run. Rotterdam is also participating in this project. In addition, UN reports are becoming increasingly positive about the link between CO₂ emissions and climate change. So a lot is about to happen in the field of energy and climate. The MSR theme report for this year, 'Energetic in Rijnmond' takes a closer look at this theme area.

MSR will keep a close track of developments and results via the customary MSR approach. Monitoring correlates, where possible, indicators and policy objectives to show whether the policy is on track. In deciding that, the following questions have been asked. Have the objectives already been met or will they be if developments continue along their present trend and are these developments taking place at the desired rate? This summary looks at the state of affairs for each theme.

Just as we did last year, we have conducted a trend analysis for a number of themes. We examine in detail one or more aspects of an indicator or subject relating to the theme in question. At the end of this chapter you will find a short summary of this.

ON COURSE

Social context

There has been a slight increase in the number of people using trains and buses.

Spatial planning

The interaction between environment and spatial planning is becoming increasingly intensive which means that bottlenecks are spotted more quickly and more opportunities are being utilised to improve the living environment.

Air

Emissions of hydrocarbons, fine particulates and nitrogen oxides by traffic have decreased. There has been a drop in the number of complaints about odour nuisance.

NOT ON COURSE

The number of vehicle kilometres continues to rise, as a result of which emissions of carbon dioxide also continue to rise.

Around urban centres and major arterial roads, bottlenecks appear on building plans as a result of existing concentrations of nitrogen dioxide, fine particulates, noise and external safety risks.

Concentrations of fine particulates are higher than in 2005. The limit value was breached at one sampling point.

ON COURSE

Noise

The number of complaints regarding aircraft noise has decreased.

Soil

An increasing amount of land is being reused, before or after cleanup, and the bulk of the cleanup operations are carried out to such a standard that the sites can be used for virtually any purpose.

Water

A large proportion of groundwater use has been earmarked for the energetically favourable heating/cooling storage.

Natural areas

The progress of construction of new green areas within the framework of the RGSP2 is as planned.

Waste

The amount of waste is not increasing in proportion to income.

Energy

The increased certainty about man's effect on the climate and the media exposure thereof create the opportunity for effective energy and climate measures. Ambitious national and Rotterdam targets are set. Better use and reuse of energy have potential.

NOT ON COURSE

There has been a slight increase in the total number of complaints regarding noise owing to the fact that the number of complaints about pub noise has increased. Exemptions for the building of housing in received noise level areas are being granted more frequently for the highest noise category.

At the present rate, it will not be possible to finish soil cleanup operations in Rijnmond by 2023. Cleanup of new cases of soil contamination is lagging behind.

Partly due to the decrease in discharges by industry, the quality of the national waterways has improved but the target for 2010 has still not been met. This is caused in part by the influx of contaminated substances originating from outside the region. This also explains why the quality of the bottom sediment in the harbour is declining and why it is still necessary to implement a periodic freeze on the abstraction of water for drinking purposes.

The size of urban green in Rotterdam and natural areas of nature conservancy organisations is decreasing. A considerable effort is needed to resolve fauna bottlenecks and achieve the network of protected areas.

At a regional level the national targets for old paper and cardboard, vegetable, fruit and garden waste, glass, and old clothing and textiles have not been met; only a limited number of municipalities have managed to achieve just one of these targets.

Despite initiatives for renewable energy (wind, biomass), their contribution is still marginal. Independence of fossil sources of energy is a distant target.

ON COURSE

Environmental management

Nearly all the municipalities now have a Municipal Environmental Policy Plan or are in the process of devising one. Like monitoring, an environmental policy plan is an essential element of the cycle in which environmental policy is developed, determined on and implemented.

External safety

The extra attention devoted to external safety in recent years has led to research and insight into the risks. For the period up until 2010 extra resources have been made available in order to give this a more permanent form. Municipalities are asking for land-use planning advice more often in the framework of external safety.

Permits and enforcement

There has been a substantial increase in the adequate level of measures in the industrial sectors for which the Province acts as the competent authority. Compliance by the refineries has improved.

NOT ON COURSE

Although municipalities for the most part have their own environmental policy plan, an internal environmental management system is often lacking. Among industry there has been a disappointing lack of interest in setting up and implementing corporate environmental plans.

The safety reports submitted by companies do not yet comply with the requirements. During 37 checks carried out at BRZO (Hazard of Major Accidents Decree) companies, 306 violations were recorded.

The police in Rotterdam-Rijnmond report an increase in environmental offences.

Trend analyses

Park-and-ride sites

The regional policy is aimed at replacing part of a car journey by other forms of transport. In addition to improving public transport and bicycle facilities, the parking policy – of which “Park-and-Ride” forms an important building block – is one of the most important instruments for regulating car use. The expansion of the park-and-ride sites has been enthusiastically taken up in the region but the target is also very ambitious. The current and planned efforts will thus have to lead to an acceleration in growth in the long run. Depending on the willingness of the road maintenance authorities to bear the costs of developing the new sites and thus to meet the need for mobility while at the same time making a contribution towards realising the air quality target, the target might actually be achieved. In the long run, the possibility of imposing a charge for using the park-and-ride sites might also provide a financial incentive to develop new sites.

Kralingse Bos

In the Kralingse Bos woodland area dragonflies, butterflies and grasshoppers are counted annually. These species respond quickly to changes in their habitat. They are also sensitive to weather influences. Annual monitoring is a means of providing more insight into the factors which affect numbers. In addition, trends become apparent earlier. The dragonfly population in the Kralingse Bos is doing well. The Hairy Dragonfly, however, is a species which requires attention; this species is on the Red List of threatened species. Across the board, little change appears to have occurred in the butterfly population. However, measures are needed in order to combat the decline of some species such as the European Map butterfly. At the monitored locations there have been no great changes in the grasshopper populations. Most species occur in low densities. The quality of the habitat in the Kralingse Bos is important to the various species which were examined, while the supply of suitable habitat in the future will depend to a great extent on the management regime.

Trial collection of plastic PET bottles in Rotterdam

Since 1 January 2006, soft drinks and various types of bottled water have been allowed to be sold in non-returnable plastic PET bottles. In order to compensate for the additional environmental burden this will cause, industry and the government have agreed among other things that industry will set up a system for the collection and recycling of 55% of all small PET bottles (0.75 litres or less). In order to learn how a

collection system should be set up so that it will meet the recycling percentage of 55%, industry has carried out trials with the separate collection of small PET bottles. At the beginning of 2005, trials were launched in Rotterdam, Brakel, Emmen, Helmond and Zwolle. The target of 55% collection has not yet been met due to the fact that the scheme is still not yet widely known about and to the relatively low density of the collection network. In the trials, the collection of PET bottles got off to a good start in a relatively short time. For purposes of comparison: when glass collection started it took ten years to scale up the collection percentage. The number of bottles collected is still increasing. At present, approximately 20% of the PET bottles in Rotterdam are collected separately.

Plastic waste in Europe

On 1 January 2006, under the Decree concerning the Management of Packaging, Paper and Cardboard, the responsibility of the producer for packaging material in the Netherlands came into force. For glass, paper and cardboard an effective collection structure is already available. At present, it is particularly plastic and synthetic materials that are receiving a lot of attention. Collection and reuse of plastic can contribute to reducing CO₂ emissions. The Netherlands can start collecting plastic with an effective infrastructure and learn from the examples of neighbouring countries. This is why in this analysis attention is devoted to the position of the Netherlands in the European league table of plastic collection and to the collection systems which our immediate neighbours are using. Although the Netherlands scores well in terms of productive utilisation of plastic packaging in accordance with the European Union definition, a challenge still remains in the field of recycling. The recycling of packaging as a raw material is better for the environment than using it for fuel purposes. Experiences in Belgium and Germany show the importance of a good collection system for plastic and packaging. The prevention of free-rider behaviour and keeping costs down are important criteria in this.



As far back as 1994 the provincial and local authorities in Rijnmond had already realised that joint monitoring of the regional environmental situation was essential to an effective environmental policy. Since then, thirteen MSR reports on the Rijnmond region have been published. In the early years the environmental quality appeared to improve visibly. More recently, however, on balance little further progress has been made. The explanation for this is that in the nineties, the 'easy' environmental problems were able to be solved through stringent source policy; the initiative at that time lay with the major polluters. As a consequence of this the difficult problems remained, problems which were mostly caused by diffuse sources. For example noise nuisance is caused, among other things, by road and air traffic, and industry, while shipping traffic and road traffic are important sources of air pollution. Although steps are still being taken in the right direction, these often involve complex solutions for only modest environmental gains. An example of this is the implementation of the Rijnmond Regional Air Quality Action Programme.

Since there are usually a number of authorities responsible for tackling these diffuse sources, effective cooperation between these authorities is a prerequisite. Thus within MSR the most important authorities in the Rijnmond environmental field are represented. By jointly sketching an integral picture of the environmental situation in the region in MSR, these authorities can also jointly take those measures which are necessary in order to tackle the diffuse sources. The Rijnmond Regional Air Quality Action Programme is an example of this. Special attention is devoted to road and shipping traffic, and private households, as well as to industry.

Other environmental problems are now starting to get the attention they deserve. For example, external safety, energy saving and climate change. But new policy requires new actions. It will probably be several years before the effect of these actions on the new areas becomes visible in indicators.

Goal

The goal of MSR is twofold. In the first place MSR aims at tracking the progress of environmental policy in the region and indicating new developments relating to environmental quality, free from value judgements. In this way MSR contributes to the policy cycles of the authorities which work together in MSR. Administrators and their staff thus obtain information which enables them to place, evaluate and, if necessary, adjust their policy in a broader context. On the basis of this information they can also formulate new policy or speed up its implementation. In appendix 3 of this report you will find an overview of the most important policy documents from which

the targets that are monitored are derived. Where no verifiable policy objectives are available, indicators in any case perform a warning function so that timely adjustments are still possible.

In the second place, MSR informs residents and the business sector about the state of the environment in the Rijnmond region and its recent developments. In this way MSR fulfils the obligation that authorities have, in the framework of the Aarhus treaty, to supply environmental information to their residents. All the background information relating to the indicators presented can be found on our website. Furthermore, MSR responds to the societal need for transparent government.

The three most important results of MSR comprise the present main report, the accompanying theme report and the symposium on 21 June 2007 at which the reports were presented and we examined the theme Synergy in more detail.

The main report provides a complete overview of the environmental situation in the Rijnmond regions and the developments within it. In addition to the indicators, the main report contains trend analyses in which bottlenecks and causes of policy developments are looked at in more detail than in the ordinary indicators. Trend analyses have become a regular feature of the report. In a number of cases future developments are also described and broad policy recommendations are made which will be further elaborated jointly by the various MSR partners.

In the theme report a closer look is taken at the monitoring of a topical subject. The theme report 2007 'Energetic in Rijnmond' offers an insight into the current state of affairs with regard to energy used and stakeholders and then takes a look at the possible developments in the industry, energy companies, households, traffic and greenhouse horticulture sectors in the longer term.

The symposium provides an important opportunity for communicating about the content of the outcomes. At the symposium, politicians and experts amplify on the outcomes based on their own responsibility, vision and expertise. The experts can then utilise the outcomes and the most important of these are given due attention in the media.

Organisation and mode of operation of MSR

MSR is a cooperation initiative between DCMR Rijnmond Environmental Agency, the Province of Zuid-Holland, Rotterdam regional council of governments (partly on behalf of the eighteen regional municipalities), the City of Rotterdam, the Directorate-General for Public Works

and Water Management (Zuid-Holland directorate), the high councils of landholders of Delfland, Schieland and the Krimpenerwaard and the Hollandse Delta water board, the Rotterdam regional Municipal Health Service, and the Rotterdam-Rijnmond police.

Reports are made annually based on the monitoring system. The origin of all data is traceable through systematic registration. Each indicator has a unique number. This number refers to the background documentation on data source, contact person, basis in figures and relevant policy reports. In principle, an indicator is made up of a description in figures of the status and/or the development of environmental aspects and their accompanying policy goals or norms. In presenting the indicators we have tried to show a picture of the last ten years and in most cases this has been successful. However, sometime information for a number of previous years is lacking because at the time that topic was not yet relevant. For some topics a geographical method of presentation has been chosen because this enables a comparison between the MSR municipalities or because it means we can give a good overview of the situation regarding a particular topic in the region. The historical regional development, however, can often be found in another indicators or on our website.

The 2005 theme report 'Environment and Space', together with the spatial plan for the region, the RR2020, gave an extra impetus to the more extensive integration of spatial development and the environment. This has resulted in a new chapter, 'Space,' in which both policy areas come together. In the choice of the indicators the concept of environment was interpreted in a broad sense. In line with the current insights on the environment, quality of life and sustainability in relation to spatial planning, not only were traditional environmental aspects looked at such as soil, water, air, noise and external safety, but also nature, cultural heritage (including archaeology) and light radiation. In this chapter, relevant indicators have been assigned to most of these aspects. In the coming years, these indicators can be used to monitor the living environment in the region. For a number of aspects we have chosen a more future-oriented account of the environment in relation to spatial developments.

In addition to this report, MSR presents information on the internet. To this end, our website was considerably improved last year. On our MSR website, www.hetmilieuinderegiorotterdam.nl, you will find not only the background figures for all indicators but also more detailed information about, for instance, the calculation methods used. For a large number of indicators, moreover, a further breakdown can be seen

by, for example, Rotterdam municipalities and their districts. Not only the data, but also the text and even the individual graphs are available for further use. Furthermore, a lot of information which is used in this report is available digitally via internet. Furthermore, information regularly appears in this report which is taken – either directly or with some modifications – from publications on the internet, for example from the Ministry of Housing, Spatial Planning and the Environment (VROM), and the Ministry of Agriculture, Nature and Food Quality (LNV).

Chapter Outline

The first chapter is entitled 'social context'. It contains disparate indicators which are presented together and should be considered more or less as facts because either they are very difficult to influence at regional level or their placing in the chapter is necessary due to the links that need to be drawn between them. This chapter is followed by the thematic chapters, i.e. 'space,' 'air', 'noise', 'soil', 'water', 'wildlife and green spaces', 'waste', 'energy', 'environmental care', 'external safety' and 'permits and enforcement'. At the request of a large number of users, all these chapters have been given the same lay-out, i.e. 'legislation and regulation, and policy', 'efforts' and 'future developments'. A trend analysis has been appended to some of the chapters. These can be found at the end of the chapter in question. The final chapter, chapter 14, is devoted entirely to the this year's theme: 'energy'. For the first time this year, 'space' and 'external safety' have each been given their own chapters.

Each indicator comprises a graphic representation and a brief explanation. This facilitates a search for the desired information and at the same time ensures that the coherence is maintained. Whenever possible, we offer this information at the level of indexes (red boxed) which show the situation for a theme in its entirety. Then we also describe the compiling indicators individually (green boxes).

In principle, the indicators in this report provide an account of the situation up to and including 2006. Sometimes, however, data is only available up to 2004 or 2005. This data has only been included in this report when it yields new facts. More information about the indicators may be found on this website: www.hetmilieuinderegiorotterdam.nl.

Appendix 1 contains an overview of complaints about odour and noise nuisance per Rotterdam district. Appendix 2 comprises a list of abbreviations used. Appendix 3 provides a reference list of documents that were consulted. At the back of the report there is an index of keywords.

Public authorities, companies and households all have a responsibility as far as caring for the environment is concerned. The nature, extent and the development of environmental pressure depends in part on economic activities and social developments in the region. In this chapter we focus on the indicators which sketch a picture of those activities and developments in particular. These indicators must be regarded as more or less autonomous because they are very difficult to influence at regional level.

Population

The approximately 1.2 million residents of the region exert a great deal of pressure on the environment: they drive around in their cars, produce residual waste and use electricity and gas (information on these topics can be found in chapters 8 and 9). It is becoming increasingly difficult to provide good quality housing for every household while still retaining the number of green spaces and not adding to the pressure from environmental factors of the dwellings. It may help to shift the port activities towards the west and to build new housing in the space thus freed up.

What do the residents themselves think about the environment in the region? Reports and complaints constitute a good way of measuring this. Residents can bring their complaints, reports and questions about environment matters to a large number of municipal, regional and national bodies. In this report we will deal with the reports and complaints which have come in to the joint Municipal Health Service, the police and the DCMR incident room. Information regarding the complaints which are received by the inland waters authorities have been included in chapter 7.

Every two years the Province of Zuid-Holland conducts an environmental perception study in which residents are asked about their experiences in the field of environmental nuisance. Since the study was not carried out in 2006, environmental perception indicators have not been included in this report. Information from previous years can be found on our website.

Traffic and transport

Road traffic is a diffuse source of pollution which makes it difficult to tackle; what is more, social resistance forms a complication factor. Regional policy as set out in the Regional Traffic and Transport Plan 2003-2020 (RVVP) addresses itself to promoting an integral policy on vehicle use. This means that the policy is no longer directly aimed at restricting the number of kilometres driven nor promoting alternative

forms of transport to the car but focuses rather, for example, on improving the traffic flow. In other words, source-based measures are making way for measures to enhance the quality of mobility. The indicators for public transport and park-and-ride sites can be seen in this context. Chapter 4 contains indicators for the emissions from road traffic and in chapter 5 we address the subject of received noise levels.

Environment and the economy

Environmental policy is aimed at decoupling growth and environmental pressure. This is evident when economic growth is accompanied by a reduction in environmental pressure (absolute decoupling) or when economic growth increases at a faster rate than environmental pressure (relative decoupling). We can show the degree of decoupling by dividing the index for environmental pressure by the index for economic development. The resultant figure is termed environmental intensity. The more sharply the line drops, the greater the degree of decoupling that has been achieved. If the line rises, this indicates a situation of coupled growth. In this chapter, the indicators for power stations; these should show whether the desired decoupling has been realised.

Environment and health

In February 2005, the Rotterdam Regional Health Service (now the Rotterdam-Rijnmond Regional Health Service) and the DCMR Rijnmond Environmental Agency formed a knowledge alliance. By pooling their knowledge they wish to gain more insight into the relationship between environmental pollution and health. This makes it possible to develop tailor-made actions in order to reduce negative health effects and to keep the residents of Rotterdam informed.

Together with DCMR, the Regional Health Service is studying the options for providing the residents of Rotterdam with information about the health effects of environmental aspects. By signing the Aarhus Convention, the Netherlands committed itself to provide access to environmental information. For the residents of Rotterdam this information becomes a lot clearer when it is linked to the consequences for health. In Rijnmond it is estimated that 5% of the sick leave and loss of health among the population can be attributed to environmental factors. The most important causes of loss of health due to environmental factors are the pollution from particulate matter in the ambient air, severe noise nuisance from traffic and poor air quality of the indoor environment.

In 2007 the organisations will initiate three projects: the 'get on your bike' project on air quality and

exercise maps the consequences of cycling and driving and prepares policy in response to the outcomes;
the energy/indoor environment project examines technological measures and communication with regard to eliminating poor quality air from the indoor environment;
the green/child friendly neighbourhoods project in which efforts are made among other things to increase the number of green play areas.

Spatial planning and the environment are two policy areas which traditionally clearly share common ground. For instance, in drawing up local land use plans, account is taken of various environmental aspects and these aspects sometimes even determine the development options. In legislation and regulations, too, this correlation is apparent and the application procedures for environmental licences and building permits are linked together. This link is becoming stronger due to the fact that the current problems increasingly require an integrated approach.

An important element of the Spatial Plan for the Rotterdam Region 2020, therefore, is the 'Proactive approach to environmental issues'. MSR quickly identified this development which has already resulted in a separate theme report 'Environment and Space'. This is the first time that this report contains a separate chapter on Space; central to this is the correlation between regional spatial developments and environmental developments. The most important information and indicators with regard to this interaction can be found in this chapter. Under 'Space' on our website you will also find indicators from other chapters which have a clear link with spatial aspects. Information from a more geographical perspective can be found in RegioGIS about the participating partners: Rotterdam Metropolitan Region, various departments of the City of Rotterdam, the Rotterdam Port Authority N.V. and the DCMR Rijnmond Environmental Agency.

All the geographical environmental data in this chapter is, at least at regional level, pretty accurate. The maps are therefore suitable for enabling an indicative assessment of building plans, but for a definitive assessment further research is needed that is based, among other things, on location characteristics and, for example, exact traffic data. A small number of future industrial sites are not shown on the various maps because their precise geographical location is not yet known.

Legislation and regulation, and policy

The way the Netherlands should look, now and in the future, is regulated in spatial plans. Central government, as well as the Province of Zuid-Holland and the municipalities make these plans. How they are established and revised is regulated under the Spatial Planning Act (WRO). This Act determines the tasks of the government and the rights and duties of citizens, companies and institutions. The Act dates back to 1965 and has been revised many times since then. In May 2003 the new Spatial Planning Act bill was introduced. In 2006 parliament accepted the Bill

and the new Act is expected to come into force on 1 January 2008.

The Bill for the new WRO was followed in 2005 by a large number of new Acts and Bills relating to land and dwelling. For example, in the new Land Exploitation Act the financial aspects of the land-use plan are further improved. The Act will ultimately become part of the new WRO. Together with the new Spatial Planning Act, a new Spatial Planning Decree and the Introduction Act for adopting the Spatial Planning Act will come into force. The new Spatial Planning Decree contains primarily technical regulations and regulations aimed at the implementation of the Act. The Housing Act was amended on 1 April 2007. A new application form for a building permit will also be designed. The amendment to the Housing Act is intended to improve compliance with, enforcement of, and enforcement instruments for the building regulations.

The most important spatial plan for Rijnmond, the Spatial Plan for the Rotterdam Region 2020, known simply as RR2020, was approved on 12 October 2005. The RR2020 is two plans in one: a regional spatial plan and a regional structure plan. A regional spatial plan is the document in which the Province lays down its spatial policy for a part of its territory. A regional structure plan is compulsory for the Metropolitan/urban region (WGR-plus areas). Rijnmond is a WGR-plus area. Both a regional spatial plan and a structure plan have a scope of ten years. The spatial choices in the RR2020 only become legally binding for citizens and private parties if they have been adopted and elaborated in the municipality's local land use plans. Under the present Spatial Planning Act, the Province has to check whether new local land use plans comply with the RR2020. The Rotterdam Metropolitan Area advises the Province on this task.

The RR2020 goes further than simply sketching a desired picture of the future: Province and Rotterdam Metropolitan Area also take account of the RR2020 when organising the regeneration. They do this using a regional development strategy in the form of a ten point plan for the region. This ten point plan forms the heart of the RR2020.

In the following chapters we deal at length with the developments and the relevant legislative and policy-related aspects in the various environmental areas. This section contains a short account of important points relating to spatial development. A more detailed explanation of each subject can be found in the chapter concerned.

It is expected that the Air Quality Decree 2005 will be replaced in 2007 by the new Air Quality Act. It is anticipated that this will be introduced in two phases. The first phase will be the entry into force of the Air Quality Act itself which will introduce the concept of 'To a Significant Extent' (IBM). Only plans which contribute to a significant extent to the deterioration in air quality will need to be checked. The IBM plans must be incorporated into an air quality plan in which offsetting is possible. The second phase is the establishing of the offsetting regulation and the NSL itself. This states what the rules are regarding offsetting and what measures central government will take with regard to improving air quality.

In early 2007 the Noise Abatement Act was amended. Under the new Act, municipalities are now empowered to allow higher noise norms. Prospective further amendments to the Noise Abatement Act are aimed at simplifying the standards structure, strengthening source-based policy, compliance and enforcement. A requirement of the European Environmental Noise Directive is that the City of Rotterdam and neighbouring municipalities must produce noise maps by 2007. In 2008 these municipalities are required to draw up a noise policy. Since noise policy frequently crosses municipal boundaries, it seems sensible to make regional agreements about it.

For the environment, too, there is new legislation. For example, on 18 October 2006 the Bill for the General Provisions for Environmental Law Act (WABO) was put before parliament. This Act is chiefly concerned with adopting and amalgamating what at present is incorporated in sundry regulations, such as the Environmental Management (Establishments and Licences) Decree (Ivb), and standardising the submission requirements. At the same time, more general regulations will be drawn up so that fewer licences will be needed. The Spatial and Development permit is an integrated licence for building, dwelling, heritage, nature and the environment. This single permit replaces all the separate permits for such things as demolition, tree felling, building, dwelling, environment, habitat and wildlife protection, and indirect waste discharges. This means the applicant only has to deal with one office, one application, one competent authority, one procedure, one permit, and one procedure for objection and appeal. It is expected that the WABO will come into effect on 1 January 2008.

In 2006 a relevant vision of external safety was established, i.e. 'Risks in balance', a provincial external safety vision with regional applications for

the Rijnmond area. The vision shows how the policy areas of external safety, and economic and spatial development are intertwined. It forms the framework for tackling external safety in relation to the spatial planning in the region in the coming years.

Efforts

In the implementation programme for the RR2020 the ten points of the regional strategy have been operationalised and converted into projects and programmes which are crucial to the success of the RR2020. Responsibility for the implementation is shared among the Province, the Rotterdam Metropolitan Region and the municipalities. The Province of Zuid-Holland is responsible for the implementation of supra-regional matters, the Rotterdam Metropolitan Region for the regional projects and programmes and the municipalities for those points which only take place within the municipality's territory. During the implementation the Rotterdam Metropolitan Region will periodically take a decision based on the progress made so far and the implementation programme can be adjusted accordingly. This is also the time to start or terminate a project. Although the indicators in this chapter can be utilised in making this decision, for the actual implementation of the RR2020 we chiefly refer to the Rotterdam Metropolitan Region Rotterdam and the municipalities.

As has already been mentioned, the Proactive approach to environmental issues is a very important part of the RR2020 and is characterised by the essential link between spatial and environmental aspects. The approach has two main tracks which are both monitored, among other things by means of this chapter. The first track is the regional environmental tackling of noise, air, and external safety issues, and provides for the development and/or continuation of a regional network for the environment and spatial planning and supporting municipalities by means of, e.g. tools. The second track, environment in spatial plans, breaks down into two components: supporting municipal projects and formulating an environmental strategy for RR2020 programmes and projects, in which the Rotterdam Metropolitan Region has the leading role.

With regard to the implementation of the water storage task, the importance of which was indicated in last year's theme report, at this time there is no clear information available so that no details of this can be given here yet. An initial impetus for this can be found in the map showing the wildlife-friendly riverbanks in the Hollandse Delta water board area (indicator 4027) in the chapter on Water. There is no geographical map

with regard to nature in this chapter, but the chapter on Wildlife and Green Spaces contains information on the progress of the implementation of the RGSP2.

Future developments

When the new Spatial Planning Act enters into force on 1 January 2008, it will become compulsory to draw up and use digital spatial plans. Spatial plans can thus be linked to other geographical information, for example for residents. Ultimately it will be possible to present all spatial planning plans (and the accompanying data) digitally and to exchange it. In order to stimulate the process of digitalising spatial plans, in 2000 the Ministry of Housing, Spatial Planning and the Environment has set up the Stimulation Programme for the Digital Exchange of Spatial Plans (DURP), a cooperation between provinces (Interprovincial Consultation IPO), municipalities via the Association of Dutch Municipalities (VNG), BNSP (Professional Association of Dutch Urban and Rural Planners), Nirov (Association for Spatial Development Professionals) and Ravi (network organisation for geo-information, now replaced by Geonovum). By 20 December 2005 these partners specified standards which must be incorporated into software packs.

In 1992 the Netherlands signed the Council of Europe's 'Valletta Convention'. The Convention regulates the protection of the archaeological heritage in Europe. At national level, this convention has resulted in the Care of Archaeological Heritage Act (WAMZ) which came into force in the summer of 2007. The main aim of the new Act is to protect the soil archive from outside disturbance. This is realised through giving archaeology a formal position in spatial processes. The basic principle is as far as possible to preserve or to prevent disturbance to existing or anticipated archaeological remains in the soil. Where soil disturbance is unavoidable, the guiding principle is: the disturber pays. In connection with this principle, the Act also lays down the procedures to be followed for the financing of archaeological investigation and the ownership and management of archaeological finds.



Air quality in Rijnmond remains without doubt an important issue. The heavy concentration of industry, the high population density and the accompanying high volume of traffic all make air quality a subject of constant concern. Nitrogen oxides (NO_x) and particulate matter are the most important pressure points.

Legislation and regulations

Air policy can be subdivided into three tracks. There is policy aimed at the general air quality and there are two forms of emissions policy: a source-based policy (each company as clean as possible) and a maximum volume of some air-polluting substances (an emissions ceiling for the whole of the Netherlands).

This last year, regulations on air quality have not changed. However, air quality remains extremely relevant in policy implementation in view of the fact that the emission standards for, notably, nitrogen dioxide (NO₂) and fine particulates are exceeded and the concentrations which occur seriously affect health. In order not to exacerbate the health problems caused by building in already affected places, a link has been established between spatial plans and air quality. Consequently, exceedances of the standards make the implementation of building plans, road construction and other spatial operations uncertain which chiefly result in delays.

Similarly, in the emissions policy of each individual company there are no great changes to report. The emission standards are gradually changing due to the revision of the Netherlands Emission Guidelines for Air (NeR) and an increasing number of European emission documents (BREFs). Over the years, however, an increasingly opaque labyrinth of emission regulations has arisen due to the fact that obsolete standards and decrees often continue to exist alongside new ones. This has not made things any easier for companies and executive authorities. Government's efforts at deregulation have not yet brought about any change in the situation.

There have been changes to the national emission ceilings. National emission ceilings for nitrogen oxides (NO_x), sulphur dioxide (SO₂), ammonia (NH₃) and hydrocarbons; these maximum amounts per substance for all sources in a country have been agreed in a European context. Both existing and new instruments are deployed in order to spread these national ceilings across sectors and companies.

Since June 2005 an emission trading system for NO_x has existed. This system should enable the most cost-effective measures to be taken which are needed to correspond with the permitted emission levels.

The system is still in the start up phase, however. It uses a Performance Standard Rate (PSR) which has been fixed until 2010. However, it appears that the performance standard set is not stringent enough to attain the national emission ceiling by 2010. After 2010, the system can become an important motor to drive down the NO_x emissions efficiently, as long as the PSR is significantly reduced.

The target for sulphur dioxide is to get levels below the agreed platform by 2010 using existing instruments (licences and sectoral agreements). It is expected that this will be more or less achieved.

It is uncertain whether the target for ammonia will be met. However, in Rijnmond the ammonia problem does not play a significant role.

In recent years, emissions of hydrocarbons have decreased so much that they will certainly come below the ceiling. Apart from the existing agreements and regulations, no new policy has been introduced here either.

Efforts

In order to meet the air quality standards, action is being taken at all administrative levels. Europe has set standards for vehicle fleets and is now devoting its attention to mobile machinery and shipping too. At national level an effort is being made to accelerate implementation of the European vehicle standards in order to bring the standard for fine particulate concentrations within reach. This has been unsuccessful, incidentally. The Dutch government has now asked the European Union to grant a 5 year derogation in order to meet the air quality standards.

In order to reduce fine particulates and NO₂ both Rotterdam and the regional have set up an action programme (Rotterdam Air Quality Programme, RAL and Rijnmond Regional Air Quality Action Programme, RAP). In 2006 various projects were embarked on under the umbrella of these two action programmes. In Rotterdam, the design requirements for Public Transport concessions had been finished. RET has fitted 80 buses with soot filters and brought 90 new clean buses (euro V) into use. This makes 90% of the buses 'clean' and RET now has the cleanest fleet in the EU – as far as we know. 156 other Rotterdam vehicles, such as refuse lorries and road sweepers, have been made cleaner (soot filters), two new vessels have been fitted with NO_x and soot removal filters and various actions in other dossiers, such as shore-side electricity for inland shipping, behavioural measures and road pricing. At a regional level, too, a clean vehicle project is underway. The Rotterdam Metropolitan Region has started The New Driving project and is conducting a study into the introduction of low emission zones.

Because both the national emission ceilings and the air quality standards are very tight in this area, measures are needed with regard to NO_x. Measures to combat NO_x from road traffic may be found in the field of vehicle standards (Europe), speed restrictions (road maintenance authority), driving behaviour and reducing car use. In industry, the obligation to take measures was enforced with restraint due to the desired primacy of emissions trading, which is now in place. Since the PSR until 2010 has been set too leniently, NO_x emissions may not decrease fast enough to come under the emission ceiling by 2010. Should that prove the case, then the tightening of the PSR after 2010 will in any event quickly produce the desired result.

Since low-level sources make a comparatively substantial contribution to the NO₂ content of the ambient air, in 2006 a study was carried out to look at which low-level NO_x sources a DeNO_x installation could be fitted. The Rotterdam Metropolitan Region commissioned DCMR to conduct the study and it must be completed in 2007.

In 2006 a provincial assessment framework was established for new power stations in which more stringent emission standards are set than the national minimum. For example, new gas-fired power stations in this area must have selective catalytic reduction installed which reduces their NO_x emissions.

Future developments

In the field of air quality standards, a new Air Quality Act is expected. Parliament approved the Bill in October 2006. However, this does not resolve the uncertainty regarding spatial plans. To achieve this, a response from the European Union to the request for derogation must first be given and it must be clear what form the particulate offset may take. The National Air Quality Cooperation Programme (NSL) forms the core of the Bill. In areas where the standards for air quality are not being met (the so-called exceedance areas), the public authorities are going to improve air quality through region-specific programmes. A lot of public authorities collaborate on the NSL programme: central government coordinates the national programme and makes agreements with provinces and municipalities regarding measurable results. A Regional Air Quality Cooperation (RSL) is being set up for Zuid-Holland.

At the same time, in Europe an additional standard for PM_{2.5} is in preparation. PM_{2.5} contains only the finer part of the particulate matter and this is precisely the part which is responsible for the adverse effects on

health. This standard will also have to be incorporated into the Dutch Quality Act in due course.

The source-based emissions policy will continue to be gradually tightened, in line with technological possibilities and the economic feasibility of utilising them. In the European Union, preparations are underway for emissions standards for fine particulates. It is not yet clear what this will entail.

For the region, the outlook for air quality is moderately positive. In the coming years, the major efforts towards meeting air quality standards and emission ceilings in particular are expected to pay off. The future construction of the Second Maasvlakte is not expected to disrupt this process to any great extent. Of course, there will be an increase in emissions but the major part of these will be reduced and the rest will be compensated by reductions elsewhere. For severely affected spots it may therefore be anticipated that the air – which these days is far less polluted than it was 20 years ago – will not become more polluted once again. However, pollution may well get worse in areas which at present are well within the standard.

As far as actual measures are concerned, 2007 is the year when Shell's Ketelhuis 4 will be decommissioned; its work will be taken over by the PerGen power station. As a result, there will be a considerable reduction in emissions of NO_x, SO₂ and fine particulates.

Indicators

Due to the current focus on climate change, increasing attention is being devoted to CO₂ emissions. From now on, we will be reporting on CO₂ in the chapter on 'Energy', because CO₂ levels in the air do not affect air quality as such and because there is a strong link between CO₂ emissions and energy use.

Noise is still the number 1 cause of nuisance according to reports from the residents of Rijnmond, so it remains an important issue. Attention needs to be permanently devoted to the problem of reducing received noise levels, because the pressure on the area will continue to increase in the foreseeable future.

Legislation and regulations

On 1 January 2007 the amended Noise Abatement Act came into force. The most important consequences are that municipalities have been given additional tasks and responsibilities in the field of noise. For example, from now on municipalities will be responsible for the management of noise zones and for the implementation of higher noise limit values policy. They have been given the power to set higher limit values in certain situations.

By 30 June 2007, ten of the sixteen Rijnmond municipalities must produce received noise level maps and submit them to central government. Moreover, these municipalities must submit action plans in which they indicate how they are going to tackle bottlenecks by May 2008 at the latest. They are free to set the threshold value themselves above which bottlenecks occur. This applies both to the whole municipal area as well as regionally. Municipalities must involve citizens in drawing up the action plans. These obligations derive from the European Environmental Noise Directive. Municipalities must make maps for the various sources: road traffic noise, rail noise, aircraft noise and industrial noise. The maps must show per source and subdivided into noise categories, the number of dwellings exposed to noise within that nuisance category. Not all dwellings which are affected by noise are mentioned. Only dwellings which are exposed to more than 55 dB during the day and 50 dB at night have to be reported. The ten Rijnmond municipalities which fall within the statutory Rotterdam/Dordrecht urban agglomeration are: Albrandswaard, Barendrecht, Capelle aan den IJssel, Maassluis, Ridderkerk, Rotterdam, Rozenburg, Schiedam, Spijkenisse and Vlaarding.

Efforts

The regional traffic environment map (RMVK) has been updated. The final touches were put to it in spring 2007. A plan is in development to keep this map permanently updated. To this end, DCMR on behalf of the Rotterdam Metropolitan Region is making agreements with the municipalities.

In 2006 a noise calculation module for aircraft noise was produced. This can provide both the actual received noise level as well as a prognosis.

DCMR has drawn up the strategic noise maps for Barendrecht and Rotterdam. For Rotterdam, DCMR will also draw up an action plan. The Province of Zuid-Holland wants to make a strategic noise map for the whole Province and an action plan for the road traffic component – this includes the six municipalities mentioned above for which it is not compulsory to do so. In 2006 they reach agreement with the Rotterdam Metropolitan Region to actually do this; the form and method are still being discussed.

In the municipality of Rozenburg a covenant has been entered into regarding the noise from rail transport over the Calandspoorbrug. In 2006 measures were taken which flowed on from the covenant. In 2007 measurements will be taken to see whether the intended result has been achieved.

Attention still needs to be devoted to transition area measures for noise from road traffic. A noise barrier has now been erected along the north side of the A20. A noise barrier will also be fitted along the Westwijk in Vlaarding. Legal proceedings continue regarding the construction of a noise barrier along the Gordelweg (south side of the A20) in Rotterdam. 'Quiet asphalt' is not yet being laid on local roads in the region. In the action plans which municipalities must draw up in 2008 for traffic noise bottlenecks, the use of quiet asphalt might be adopted as a measure.

In 2006, contractors started to implement noise mitigation measures for the first 100 dwellings in order to counteract road and/or rail traffic noise wherever source-based and transition area measures are not already in place for reasons of efficiency.

In 2006, the Province, the Rotterdam Port Authority, EMO, ECT and DCMR conducted a study into the influence of meteorological conditions on the transference of noise. The results of this study 'Focus on Noise' will be published in mid-2008.

Future developments

From 2007 a plan will be implemented to organise all the data on noise, together with that on air and external safety, in such a way that they are suitable for carrying out scenario calculations. This is a considerable task. In 2006 administrative agreement was given to starting up the exploratory phase. If the necessary financing is released in time, the delivery date for this so-called 'LVG database' is forecast for 2010. Efforts will be made to deliver elements of this before that time.

In 2007 and beyond a substantial number of dwellings in Rotterdam will be provided with noise mitigation facilities to combat road and/or rail traffic noise.

Until 1 January 2009, municipalities have the opportunity to register existing dwellings for noise abatement due to road traffic noise; after this time the registration period for abatement cases will be closed. Dwellings which have not yet been registered by that point will fall outside the scope of the national regulations and noise abatement measures will have to be carried out at the expense of the municipality.

Another development relevant to noise is the scheme for a network of commercial helicopter ports in Holland, including in Rotterdam. If this becomes reality, an increase in complaints and nuisance may be expected. This challenges administrators to find a good balance between economic interests and the interests of a healthy and pleasant living environment.

If it were up to central government, in the long-term railways and roads would be allotted statutory noise ceilings. The road and rail authorities would then have to take measures to remain under the noise ceiling. The road maintenance authority would be able to take such measures as road pricing, noise barriers, speed restrictions etc., in order to remain under the ceiling. Part of this plan is a regulation for existing exceedance levels and 2 dB additional noise scope for future developments.

Research has delivered new insights into dose-effect relationships for noise. It appears that aircraft noise has a many times greater effect than has been supposed up to now. This is why ways to deal with aircraft noise need to be updated. Noise also has far more effect on health than is used in estimations at present, judging by new insights. Noise appears to be responsible for just about the same loss of healthy years of life as fine particulates. This insight will also certainly be followed up in the coming years.

In recent years, the approach to soil cleanup operations has changed: whereas previously it was predominantly environmental aspects that determined which sites would first be considered for cleanup, these days the emphasis has shifted to spatial developments in which soil cleanups form one element of the whole picture. Financial considerations of course play a role in this new approach: the government also wants to get market parties to pay a share in soil cleanups.

Legislation and regulations, and policy

At the start of 2006, the amended Soil Protection Act (WBB) came into force. Previously the causer or the culpable owner was primarily responsible for soil cleanup of sites but now it is the site owner or leaseholder, irrespective of whether he is guilty or not. The site owner or leaseholder must draw up and cleanup report and submit this for assessment to the competent authority.

As a consequence of this, since 1 May 2006 the old urgency system has been amended. Based on the ministerial circular on soil cleanup 2006, from now on the competent authority must determine whether a cleanup should be carried out quickly (within 4 years). This will only occur if unacceptable human, ecological or diffusion risks exist in relation to the current soil use, or intended soil use in the short term. The old urgency system, with its accompanying four categories and postponement periods, has thus been revoked.

On 14 February 2006 the Standard Cleanups Decree and Regulation (BUS) came into effect. From now on, the site owner or leaseholder can follow a shorter, simplified reporting procedure (6 weeks instead of 13) using standard reporting forms for standard soil cleanup projects on private premises. This reduces the administrative burden for both cleanup operators and the competent authority.

The Industrial Regulations on Soil Cleanup have also been put on a legal footing under the financial provisions for soil cleanup regulations of the Soil Protection Act.

In late 2006, the Netherlands Environmental Assessment Agency (MNP) published a social cost-benefit analysis on soil cleanup. Since this version contained an arithmetical error, in early 2007 a definitive, revised version followed. In this report, the Agency concludes that soil cleanups cost more than is generated through the increase in land value and benefits to public health. Due to a lack of data, it was not possible to determine the ecological benefits and the increased options for use of land after cleanup. It was also not

possible to determine all the health benefits. The government drew the conclusion from this that the present policy has sufficient social benefits and therefore should be continued.

In September 2006 the European Commission published a draft version of the Framework Directive on Soil. This makes it mandatory for member states to pursue policy for a number of soil themes, including soil cleanup. As far as soil cleanup operations are concerned, the Netherlands meets virtually all the requirements of the Directive. A new element is that from now on member states are obliged to draw up a 'soil status report' for every land transaction. The Netherlands does not yet comply with this requirement. The Directive offers a stimulus to pursue policy for other soil themes as well. In the urbanised Rijnmond area which lies largely below sea level, important themes include groundwater management, subsidence and salinisation.

Furthermore, on 12 December 2006 the Groundwater Directive came into force which obliges the Netherlands to distinguish its groundwater bodies. The Rijnmond area lies in the large-scale groundwater body of Rijnwest, which comprises Noord-Holland and Zuid-Holland (excluding the dunes), the peat and clay areas of the Province of Utrecht, and the Betuwe region.

Efforts

Most soil cleanup operations are carried out in places where urban renewal is planned. In addition, a number of sector-specific activities have been implemented; for example, measures have been taken at petrol stations under the relevant Order in Council concerning filling stations.

In the framework of the Covenant on Gasworks, comprehensive agreements have been made on behalf of Rotterdam regarding the financing and planning of the gasworks soil cleanup operation. The agreed extended deadline for tackling the problem makes it possible to better gear this operation to spatial developments and brings this part of the soil cleanup operation back on schedule.

In 2006 the BSB (Covenant on soil cleanup for industrial sites currently in use) operation was as good as completed and stopped in April 2007. Following on from this in 2006 the Soil Centre was set up to help small and medium-sized enterprises to tackle soil cleanup of their seriously contaminated sites. For the dry cleaning sector the NETEX covenant (Bosatex) has been developed: whether through the Industrial Regulations on Soil Cleanup or through a co-financing

construction, the government will pay for part of the soil cleanup operations in the small and medium-sized enterprise sector.

In 2006, the soil cleanup operations for underground oil storage tanks at private houses in the framework of the BOOT (Underground Tanks (Storage) Decree 1998) were completed in virtually all municipalities, at any rate insofar as tanks have been reported, or owners of identified old tanks wished to participate. Many existing tanks are still in use on companies' premises. In the framework of the BOOT, specific legal duties regarding maintenance, inspection and monitoring apply to these.

In 2006 the Standard Cleanups Decree (BUS) procedure was successfully brought into operation. In the Rijnmond area it appears that more than 30% of all cleanups can be completed within the BUS framework. The first Orders have also been issued based on which a financial subsidy has been provided under the Industrial Regulations on Soil Cleanup.

This year there have also been discussions about the Decree and Regulation on Soil Quality, which will replace the existing Building Materials Decree and the Exemption Regulation for Soil Handling in 2007. A consequence of this is that proposals have been made to radically revise soil standards. Partly as a result of the study that was conducted in Rotterdam into blood lead levels in children and its relationship with diffuse soil contamination, however, far more stringent soil standards for lead were avoided. Such a stringent set of standards would have made the soil cleanup operations in this region (and other large cities) both impossible to implement and far too expensive.

The EMK site in Krimpen aan den IJssel is going to undergo another cleanup and will be assigned a new future purpose. Preparations for a cleanup study are underway.

Future developments

Instead of coming into force on 1 January 2007, the Decree and Regulation on Soil Quality will not come into force until the third quarter of 2007. These regulations place the reuse of soil, dredging spoil and building materials in one policy framework and the Soil Quality Map and the Soil Management Plan gain a more prominent role. On the basis of this, municipalities may pursue their own area-specific policy including – within the rules of the 'risk toolbox' – increased soil standards. This is very important for the Rijnmond region given that broader standards have been in force since the introduction of the

Building Materials Decree. In 2007, the intention is to revise the regional policy document on Active Soil and Building Materials Management and to supplement a regional Soil Quality Map with a soil function map and a utilisation map so as to attune policy to the new regulations. In the future, the area-specific policy will build as far as possible on the existing reuse policy for soil. On a number of points, DCMR will simplify and broaden the regional policy, given that the Decree and Regulation on Soil Quality are too complex and rigid for practical implementation.

As a consequence of the new regulations for the reuse of soil and dredge spoil, the soil standards will also be revised. In addition, the threshold values which the Ministry of VROM developed in 2007 in the framework of the European Groundwater Directive, probably have considerable consequences for the standards and the soil policy (including cleanup) based upon it. It is not yet possible to predict the consequences of the Framework Directive on Soil since this Directive still has to go through an enactment procedure of at least three years.

In 2007 the broadening of the soil policy will also start within the region. DCMR will be the first to make maps as part of the Rotterdam Soil Quality Map for the following themes: subsidence; landscape, soil-related, and archaeological values; and, possibly, groundwater.

As a result of all these developments, soil cleanup and soil management are going to increasingly become a part of societal processes such as urban renewal and the development of land and enterprises. The simplification of procedures, policy and standards which has been introduced will further increase support for these things in the region.

Water plays an important role in our lives. Our living environment is affected by water in many different ways. On the one hand rainwater drainage must be effective or flooding will occur. On the other hand a lack of rainwater is also a problem: for example, peat dikes can dry out and crack. Another problem is that if the water in the rivers is very low, salt water is able to flow ever further inland. A proper sewerage drainage system is necessary because otherwise the surface water would become polluted. Our groundwater can also cause problems: a water table that is too high will cause flooding and a water table that is too low can cause piling rot, subsidence or cracks. Finally, contaminated groundwater can give rise to problems years after the contamination has been stopped, due to the fact that it has become unsuitable for use.

Legislation and regulations, and policy

The Framework Directive on Water (KRW) is aimed at protecting the quality of surface water, groundwater and seawater. To this end, the Netherlands must be divided into river catchment areas. This has now been done. The authorities involved must elaborate measures into a river catchment area management plan for each area by the end of 2008. The measures should ultimately result in the water being in good chemical and ecological condition by the end of 2015. The directive also states what 'in good condition' means for the various categories of water, i.e. for both groundwater and for surface water, but this remains to be worked out in detail at a regional level.

The Framework Directive on Water requires furthermore that the groundwater should be in 'good (chemical) condition'. However, since the only directive available to this end was from 1979, and this directive did not tie in with the Framework Directive on Water system, in 2003 the European Commission presented a proposal for a new Groundwater Directive. The aim of this Directive is to set out specific measures for preventing and dealing with groundwater contamination. The Commission adopted this proposal on 19 September 2006. The European Parliament gave its approval on 12 December 2006. The various authorities which must have the river catchment area management plans ready by 2009, will now be able to factor in the Directive.

In 2006, the conservation targets for the Birds and Habitats Directives areas (Natura 2000 areas) were set. Many of the measures which are necessary in order to reach the nature targets are water measures, because as much as two-thirds of the one million hectares of Natura 2000 areas consists of surface water. The Framework Directive on Water is essential

to this. Owing to this, an effective harmonisation between nature and water is necessary.

The Framework Directive on Water stipulates that the member states must have their monitoring programmes for surface water and groundwater ready for operation by 22 December 2006 at the latest and must have submitted an outline of these programmes to the EU Commission by 22 March 2007 at the latest. The water authorities have now developed the monitoring programmes for groundwater and surface water for the Framework Directive on Water in accordance with the planning and submitted them to the EU Commission.

In early 2006 the European Swimming Water Directive came into force. In this new Directive the standards for the quality of open swimming water are tightened and in comparison with the old directive, the emphasis has shifted from monitoring to management measures. An element of the directive comprises "an assessment of the possible proliferation of cyanobacteria (blue-green algae)". A swimming water profile must be drawn up for every swimming water location. This means a study will have to be conducted into the sources which might have a negative impact on water quality and into potentially disruptive occurrences. In the Netherlands, eight percent of the swimming water in inland waters does not comply with the new, tighter standards of this new Directive. For swimming water along the coast, this applies to around one percent of the locations. The Netherlands has two years to implement the directive in national legislation and until 2015 at the latest to bring the quality of swimming water up to the legally required level.

The 'Water Assessment' forms an important instrument. The Water Assessment was embedded in the Decree on Spatial Planning on 3 July 2003 and stipulates that the municipalities concerned must consider all water management aspects in spatial planning and subsequent decisions. Water management aspects include such things as safety, sewerage, water supply, public health, soil subsidence, excessive groundwater levels, surface water quality, groundwater quality, drought and wet habitat. This means that the authors of a spatial plan have to involve the water authorities at an early stage in the planning. In 2003 the awareness, the application and the practical use of the water assessment was evaluated for the first time. A second evaluation of the water assessment followed in 2006. The most important conclusions emerging from the second evaluation were:

The water assessment's strength lies in early involvement by the water authorities in spatial planning processes. This is working well, but can be improved. The water

assessment is fairly effective at location level, but often has too little effect on spatial planning choices.

There are hardly any legal safeguards regarding water aspects in local land use plans. Also, insufficient attention is devoted to financing and compensation in plans.

The recommendations made by the water authorities to the initiators are often inadequate although this does not have to be a problem.

Although the water assessment devotes attention to water aspects, initiators often do not explain how they will take account of these in their plan.

In addition to carrying out the water task, the National Administrative Agreement on Water (NBW) states among other things that by 2005 at the latest the Provinces must have established the frameworks for the Desired Groundwater and Surface Water Regime (GGOR). In the period from 2005 to 2010 it is up to the district water boards to draw up the GGOR in close cooperation with municipalities, the groundwater authorities and interested parties. The GGOR will then become part of the water management plans.

The Province of Zuid-Holland, in its Policy Plan for Green Spaces, Water and the Environment 2006 (BGWM) aspires to the sustainable development of the urban and rural area. By 'sustainable development' it means that socio-cultural, ecological and economic values (People, Planet, Profit) continue to develop in a balanced and cohesive way. In order to realise quality benefits in issues relating to living, working, recreation, mobility, green spaces, water and the environment, it tackles these problems in a coherent way.

Moreover, in 2006 the Province of Zuid-Holland established the Brine policy rule. Many enterprises in the agricultural sector use groundwater to irrigate their crops. During this process salt waste water (brine) is released that is usually discharged into the soil. However, this requires an exemption from the Province. The agricultural sectors will be given until 5 July 2013 to switch over to more sustainable methods. After this time, the Province will only grant exemption in exceptional circumstances. In order to prevent the brine being discharged into the surface water, in October 2006 the high council of landholders of Delfland laid down policy rules for this.

At municipal level, the ambitions regarding water have been turned into water plans. In recent years the water plans have developed from technical implementation plans into spatial plans. This was partly brought about by the spatial claim for water ensuing from the policy: Water Management for the 21st century (WB21). In addition to the emphasis on water as a supply and drainage system and the quality of water, the

added value of water in the urban area is also being increasingly pursued, including the multiple use of space.

Efforts

The water boards have an important task in achieving the objectives of the Framework Directive on Water but are certainly not able to accomplish this on their own. The Province of Zuid-Holland plays a supervisory role in this. In its Provincial Policy Plan 'Green Space, Water and the Environment' attention is also devoted to this. The Province steers water policy along two main tracks. To begin with, within the triangle of Province, water boards and municipalities it makes plans and bye-laws with verifiable strategic objectives. Second, it plays an active role in introducing the theme of water into integral and spatial plans and projects. Municipalities play their part by drawing up and implementing water plans and also giving water a prominent position in spatial planning.

Discharges from major companies have fallen sharply so that all the targets for this have been met. This illustrates that great progress has been made in restricting discharges at the point sources. The problem is increasingly concentrated on the diffuse sources such as agriculture and horticulture, but also shipping and road traffic.

In the 2006 MSR theme report 'It all starts with clean water' the problem of salinisation was raised among other things. Drier summers can cause the salt tongue in the river to penetrate further inland. In addition, salt groundwater (spring water) comes to the surface during a drought. This is why all the water quality boards monitor the amount of salt in the water so they can take action during a drought and if the salt content is too high. On Voorne-Putten and Goeree-Overflakkee, fresh water basins are being constructed, so that fresh water remains available for irrigating crops once the Haringvliet sluices have been opened. The 2006 MSR theme report also provided an insight into the water storage task in Rijnmond. The water quantity boards are working hard to realise this. Quantitative data is not yet available. If possible, we will include realisation figures in the 2008 MSR report. In 2006 a start was made in Maassluis on activities to build a new sedimentation storage basin with a capacity of 3,700 m³ to collect surplus rainwater from the sewerage system.

Future developments

In September 2006 the Water bill was put before parliament. This replaces eight Acts for water management in the Netherlands. The new Water Act regulates the management of surface water and groundwater. This will mean that district water boards,

municipalities and provinces are better able to combat flooding, water shortage and water pollution. The Act provides for the designation of functions for the use of water. On the basis of these functions, requirements are laid down for the quality and the management of the water.

The RR2020 includes a water storage task. Rotterdam Metropolitan Region and the Province of Zuid-Holland are realising this in cooperation with the water quantity boards. These boards are addressing themselves to this energetically.

In 1998, the high council of landholders of Delfland had to deal with flooding. In order to arm themselves against this in future, Delfland has started up the ABC-Delfland project. This involves improving the design and running of the water management system, in order to achieve a responsible safety level at socially acceptable costs. 'ABC' stands for 'Drainage and Storage Capacity'. ABC-Delfland consists of two subprojects which complement each other like communicating vessels: ABC-Boezem and ABC-Polders. ABC-Delfland intends to create additional storage space to deal with a sudden increase in water quantity, such as during heavy showers. This could be, for example, by retaining water longer, storing more or draining it away more quickly. These involve technical measures, such as increasing capacity of the pumping-stations and spatial measures, such as setting aside areas where water can quickly and temporarily be stored.

Particularly in the centre of Rotterdam, however, there is not sufficient space available to realise water storage. In this part of the city a lot of problems are caused chiefly during short, heavy summer showers, also termed extremely heavy downpours. To simply install a larger pump would in this case have virtually no effect. At present the high councils of landholders of Schieland and the Krimpenerwaard among others are seeking solutions to catch these heavy downpours. One possibility might be the construction of green roofs, but further research into this is still needed.

By 2020 the high councils of landholders of Schieland and the Krimpenerwaard want to have connected the greenhouse horticulture enterprises to the sewerage system in the high concentration areas within the councils' catchment area. The municipalities have the leading role in this project and are implementing it in cooperation with the greenhouse horticulture sector and the high council of landholders. If connection is more expensive than a particular guideline amount, the high council of landholders will pay a contribution to the municipality.

The Hollandse Delta water board has laid down the water task for the area in Water Structure Plans, which are continually tightened through refinements to the model. In addition the water board, together with nearly all the municipalities, has either drawn up or is already implementing a municipal or district urban water plan. All the water plans make a contribution to improving the system (both qualitatively and quantitatively). In the new plans in particular (Water plan Rotterdam 2/Water plan Ridderkerk 2) space for water is sought and other ways of dealing with rainwater. High expectations have been brought up with regard to improvements to such things as the quality of the water (more storage, more disconnection, fewer overflowing drains). Particularly in a highly populated urban area with a high perception of water, the desire for multiple spatial use and water use, this form of cooperation (water plans) is a good way to get results.



Green spaces and wildlife are important in many societal respects. From a study that the Health Council conducted in 2005 it appears, for example, to be feasible that nature has a positive effect on people. The Council for the Rural Area has issued the advisory publication 'A right to green'. This states, among other things, that involved parties must exchange their own interests for the interests of society: a green living environment. The Ministers of VROM and LNV have therefore initiated various activities. And in the Rotterdam Coalition agreement, too, the environment and nature are explicitly mentioned. In short, wildlife and green spaces have acquired a higher place on the administrative and political agenda.

New this year are indicators for complaints about nuisance from animals in Rotterdam and the progress of the Regional Green-blue Structure plan 2 (RGSP2). In the conclusions following on from the indicators it is not yet possible to indicate with any certainty whether climate change affects development. In the future we will call for more attention to be devoted to this issue.

Legislation and regulations, and policy

The European wildlife and green spaces legislation – Natura 2000 – has been elaborated at a national level in the Flora and Fauna Act and the Nature Conservancy Act. The Flora and Fauna Act has been in effect since 1 April 2002 and aims to protect wild plants and wildlife. In principle, actions which may have an adverse effect on protected species are therefore prohibited; exemption from this prohibition is only allowed if a dispensation is granted by the Minister of LNV. The Flora and Fauna Act includes a duty of care: everyone must be sufficiently mindful of plants and wildlife living in the wild.

The amended Nature Conservancy Act came into effect on 1 October 2005. Whereas the Flora and Fauna Act is aimed at species protection, the Nature Conservancy Act is specifically directed towards the protection of areas: protected nature reserves. The wetlands (Nieuwe Waterweg, Calandkanaal and Haringvliet), habitat areas (Oude Maas, the dunes at Voorne, Hoek van Holland and the Voordelta) and Bird Directive areas fall under this legislative system.

In the framework of Natura 2000, former Minister Veerman of LNV designated the Voordelta, the dunes at Voorne, the Oude Maas and the dunes at Kapittel as protected areas. This means that within three years of this designation decree the owners must have specified management plans for these areas.

The term National Ecological Network (NEN) was introduced in 1990 in the Ministry of LNV's Nature Policy Plan (NEPP). The NEN is a network of areas in the Netherlands where nature has precedence. The network helps to prevent flora and fauna in isolated areas becoming extinct and habitats from losing their value. The NEN consists of existing habitats, nature reserves, nature development areas and so-called robust ecological corridors and can therefore be considered as the backbone of nature in the Netherlands. The Province determines which areas form part of the Provincial Ecological Network (PEN) and further fleshes out the ecological network.

The Framework Directive on Water is not only relevant to the quality and quantity of the water, but also has a direct influence on wet habitat. By 2015 all the surface water in the Netherlands must be in good ecological condition. This not only enables wildlife in the water to develop but also requires that for various water a certain level should be achieved regarding habitat diversity (possibility of the occurrence of plant and wildlife species) and their species-specific character (degree to which species characteristic of that specific water type occur).

The Regional Green-blue Structure Plan 2 (RGSP2) gives an overview of the tasks facing the region with regard to landscape, cultural heritage, water, nature, recreation and agriculture, and translates these into a cohesive vision of the green-blue structure. The RGSP2 is a joint product from the Rotterdam Metropolitan Region and the Province of Zuid-Holland. The development of the RGSP2 will update the current provincial and metropolitan green spaces policy for the Rotterdam Metropolitan Region and will forge a link with the new water policy. Previous agreements such as the Green Agreement and compensation for the Second Maasvlakte have been integrated into the RGSP2.

The RGSP2 is in turn integrated into the umbrella programme, the Spatial Plan for the Rotterdam Region 2020 (RR2020). The RR2020 is both a Regional Structure Plan (RSP) and a regional plan which lays down the spatial development planning of the Rotterdam region for the period up to 2020 with a further outlook towards 2030. As regards the interpretation of the supervisory role in the implementation of the RGSP2, the Rotterdam Metropolitan Region and the Province of Zuid-Holland have now formalised these agreements. There is now also an implementation programme for the RGSP2; this states among other things that 993 ha of green

projects will actually be realised before 2010 and in addition that 2,354 ha of green projects can be put into implementation

For the time being, regional policy is aimed primarily at the city outskirts. Not many municipalities in the region have concrete nature plans for the whole urban area.

The Port of Rotterdam's Port Plan 2020 has a threefold objective. One of these objectives is to contribute to a better spatial quality, living environment and quality of life in the region. The vision contained in the Port Nature Plan 2004 is in keeping with the target vision for nature in the Port Plan 2020. The Port Nature Plan must ensure that the present situation is turned into the target vision for the year 2020.

In its Policy Plan for Green Spaces, Water and the Environment 2006 (BGWM), the Province of Zuid-Holland aspires to the sustainable development of the urban and rural area. By 'sustainable development' the Province means that socio-cultural, ecological and economic values (People, Planet, Profit) continue to develop in a balanced and cohesive way.

In addition to legislation, the European Union has also developed subsidy regulations which may be utilised by not only national, regional and local authorities but also international and private organisations and non-governmental organisations, such as the LIFE+ programme. The aim of LIFE+ is the co-financing of the development, implementation, monitoring, evaluation and communication of the European environment and nature policy and legislation. The European Commission (EC) has earmarked a total budget of 2.1 billion Euros for the period from 2007 to 2013.

Efforts

In September 2006, the Minister of Agriculture, Nature and Food Quality set up a Nature Information Agency in order to make it clear where initiators must take account of protected species and where there is scope to build and develop. The agency provides companies, municipalities and other parties with reliable information regarding the spread of protection species in the Netherlands. In addition it provides information about locations where efforts are being made to re-establish endangered populations (the natural habitat approach).

In the Negotiation Agreement regarding a Visibly Greener Zuidvleugel, central government, the Province of Zuid-Holland and the regional governments, in consultation with those directly involved, have created conditions for developing around 4,200 ha of new

recreational areas in the Zuidvleugel. In concrete terms, this means that almost 90% of the total funding is in place. Of the ten most important projects in the whole area, four are of immediate importance for Rijnmond: Project Mainport Rotterdam, Integrated Development Delft-Schiedam, Rotterdam Centraal and Noordrand Rotterdam.

Under the umbrella of Deltanatuur, central government, the Provinces of Zuid-Holland and Noord-Brabant, and a number of local authorities and non-governmental organisations, will work together until 2010. By that time, three thousand hectares of wet habitat must be brought about in the Rhine and Maas estuaries. Deltanatuur is active in five different areas. Each area has its own specific characteristics and possibilities. Three projects lie partially in Rijnmond: Noordrand Goeree-Overflakkee, Spui, Oude Maas and Noord.

The Province of Zuid-Holland has allocated an additional 6.5 million Euros for the purchase of agricultural land for nature development.

The municipalities on Voorne-Putten, the Hollandse Delta water board and the Rotterdam Metropolitan Region have made a joint development vision and a plan of approach for the brooks on Voorne-Putten. The provincial ecological corridors make up a part of this. In order to increase the realisation opportunities for the brooks, a look was also taken at other functions which are useful to the municipalities and water board, such as route networks for walking and cycling. In addition, a link was sought with other spatial function changes. This has resulted in a network of brooks in the landscape. In the coming years efforts will continue for the implementation of this plan.

In January 2008, Haringvliet was supposed to become a brackish estuary once more (Decree on opening the Haringvliet dam). The realisation will be delayed, however, because farmers in the surrounding area will have to receive compensation.

Efforts are being made to realise new green and wildlife areas in the framework of the RGSP2. In indicator 3098 the good progress being made can be seen. It is expected that by 2010 around a thousand hectares of green and wildlife areas will have been realised. In addition by 2010, plans for another 2,350 hectares of nature and recreation projects will be ready for implementation.

The policy document on Space for Development introduces a target of 75 m² green space per inhabitant in urban areas. This should in any case be realised in new build locations. The Council for the Rural Area has published a report, however, in which it asserts

that green space forms a low priority in new build projects and that the target will not be met.

Future developments

Alterra has carried out a study into nature perception among young people and migrants. From this it appears that as far as young people are concerned, the specifically Dutch old agricultural landscapes do not have to be protected. Migrants do not like rugged wildlife areas and prefer to use green outdoor spaces more for leisure purposes. This is why in the future changes may have to be made to the wildlife and green spaces policy in the region. On the other hand, experience teaches us that once they get beyond adolescence, young people become more interested in nature. Another study has shown that the urban resident's vision of wildlife and green spaces differs from that of people outside the city. City dwellers have increasingly less contact with wildlife and green spaces because 'green areas' are predominantly found on city outskirts and less in the centre and residential areas.

Climate change affects the condition of Dutch flora and fauna. Warmer conditions mean that escaped exotic species which have been imported into the Netherlands can survive in the wild. In addition, the habitats of more southern species are shifting northwards due to the temperature rise. Owing to this, more southern species are becoming established here while other indigenous species are moving northwards.



The waste management policy is aimed in the first place at prevention: preventing waste being created. In addition, the authorities seek as far as possible to find opportunities for recycling and reuse. Many parties are involved in the implementation of the waste management policy. The Province grants licences to waste processing companies, the municipalities collect waste and waste processors wish to process waste effectively and efficiently.

In the indicators presented we have tried to as far as possible to comply with the wish to make comparisons possible between municipalities. After all, municipalities play a significant role in the collection of household waste. By comparing their performance and approach, municipalities can improve waste collection. We have looked at how much available biofuel there is in the region. As yet, most of the available data relates to what is called 'B-quality wood'. This has been incorporated into a new indicator. The intention is that in the long term additional data will be supplied on other streams which fall into the category of biofuels. Finally, we provide an outlook towards those future developments which are relevant to waste policy.

Legislation and regulations, and policy

At European level, the Sixth Environmental Action Plan will be implemented between 2001 and 2010. In the field of waste management, the European Union in this programme shows itself to be fully aware of the fact that the amount of waste is increasing annually. This is why the European Union has made the principle of sustainable development and a high level of environmental protection into priorities. To this end, it has considerably increased the number of instruments for implementing waste policy, ranging from legislation to financing instruments. For example, targets have now been formulated at European level for:

- waste prevention and a shift towards more sustainable production patterns;
- reducing waste removal;
- promoting reuse.

In 2002, the parties in the Consultative Committee on Waste (AOO) specified the new municipal targets for waste separation. These targets depend on the degree of urbanization and the feasibility of the objectives. The targets are laid down in the National Waste Management Plan (LAP 2002-2007). The 'disaggregation' into amounts to be collected has changed but the basic principle of the national policy is still to achieve the original percentage objectives. The most important of these targets is the percentage of waste that is collected separately. These days, the tasks of the AOO are being implemented by

SenterNovem. In May 2007 the National Waste Management Plan (LAP) was amended for the third time. This amendment has adjusted the LAP in line with recent developments. In addition, the term of operation of the LAP has been extended by two years.

In September 2004, the State Secretary for the Environment decided to allow municipalities to liberalise their permitting options for the collection of vegetable, fruit and garden (GFT) waste. This decision gives municipalities more policy freedom to organise the collection of this type of waste at their own discretion. The two municipalities of Krimpen aan den IJssel and Rotterdam are making use of the liberalised permitting options.

On 1 August 2004, the European Union laid down the EU Directive 2004/12 for packaging and packaging waste in order to harmonise the regulations with regard to packaging and packaging waste in Europe. The Directive contains rules for pushing down packaging waste. The Directive has been implemented in the Netherlands in the Management of Packaging, Paper and Cardboard Decree. This Decree came into force on 1 January 2006 and makes it compulsory for producers of packaging:

- to pay for the collection, recycling and any other useful applications of packaging;
- to facilitate the collection, recycling or any other useful applications of the packaging;
- to take measures to ensure that as little waste as possible is created, by using as little packaging material as possible, by designing recycleable packaging, by recycling material as much as possible and thus creating as little litter as possible.

The idea behind the Decree is that the polluter pays. The producer is allowed to pass on the removal costs to the customer. While there is still no agreement between producers and collectors, the public may find they are paying double: both via the price of the product and via the waste substances levy.

The target is that 65% of the total packaging should be reused. In addition to the existing separate collection of paper and cardboard, glass, old clothes and textiles, and GFT waste, the collection of plastic should also be organised. This is the greatest challenge. At present, only 19% of the total plastic packaging is reused, whereas the target for large bottles is 90%, for small bottles 55% and for residual plastic packaging 27%. Negotiations between the business community and the municipalities have not yet produced any concrete results.

At the end of this chapter you will find a trend analysis in which the collection of plastic in the Netherlands is placed in a European perspective.

48 million Euros has been made available for the Street Litter Impulse Programme 2007-2009, 33 million of which is provided by the business community. This action programme is a cooperation between VROM, VNO/NCW, the Keep the Netherlands Tidy Foundation and the Association of Netherlands Municipalities (VNG). The aim of the action programme is to achieve a 'visibly tidier' living environment in three years time. Exact target figures are not mentioned. The programme emphasises prevention and offers companies, municipalities and other interested parties methods and instruments to tackle street litter more effectively. Municipalities and companies advocate the introduction of an administrative fine – in addition to the preventive activities – in order to combat street litter.

Efforts

A waste management plan is a useful instrument for municipalities to determine how to further improve the separated collection of household waste. In addition to their usual efforts to collect various waste streams from citizens, municipalities are trying to reach a higher standard in separate waste collection by using other instruments.

For example, in Rotterdam a trial was conducted in which PET bottles were collected via schools, sports clubs and recycling banks. The results of this have been incorporated into a trend analysis at the end of this chapter.

In addition, in Barendrecht a central recycling point has been opened in the Carnisse Veste district. Residents can bring cans, cardboard drinks packaging, batteries, shoes and old clothing to the recycling point at no cost. This encourages waste separation and it saves residents money. As a result of this they put less waste in their municipal bin bag and in this municipality they have to pay per bag. The municipality of Barendrecht is having less success with its initiative to charge per bin bag: this seems to be leading less and less to the desired effect. Too few people separate their waste. Moreover, people who transport their waste to another area and dump it often manage to get around the system. The municipality of Barendrecht is currently deliberating on ways to optimise waste collection.

After earlier trials for the collection of old paper and cardboard using wheelie bins proved a success, in Rotterdam the collection of GFT waste has been

stopped and the old GFT wheelie bin is now being used for old paper and cardboard. In this way, around twenty percent more paper is collected. The garden waste is collected on demand as an extra service to the residents and can also still be taken to the municipal recycling centres.

Various sorting analyses have shown that old paper and cardboard form a large part of the residual waste. This is why municipalities are primarily targeting this waste stream. In 2005, Hellevoetsluis ran a successful trial scheme for the door-to-door collection of paper. In January 2007, an extra wheelie bin for old paper and cardboard was delivered to those households which had registered interest.

Finally, various private and charitable organisations also collect household waste. The best known examples include the collection of paper by sports clubs, among others, and old clothing and textiles by organisations such as Humana, KICI and the Salvation Army. Batteries are collected by the Battery Organisation (Stibat). The municipalities of Rotterdam, Barendrecht, Spijkenisse and Vlaardingen all have recycling centres. The Vlaardingen recycling centre also serves the residents of Hellevoetsluis. Batteries are collected by the Battery Organisation (Stibat). In a trend analysis we take a closer look at the recycling of batteries, where the collected batteries come from and the behaviour of households.

Future developments

Since 1999, an environmental levy has been charged on products. The levy was supposed to be paid until 2011, at which time the funds were to have been large enough to keep the system going. The success of the system has been so great that it now seems likely that the date when the levy will no longer have to be paid can be brought forward to 2008 or 2009.

From 2007 the borders have been opened for European waste. This offers opportunities for the waste processing companies and thus for the environment. If companies are expanding, they are more prepared to invest in new technologies and methods than in a shrinking market.

No subject in the environmental field this year has so unexpectedly burst into the public eye as energy. The subject of energy, for example, hardly got a mention in the various parties' election programmes for the parliamentary elections and the subject of climate was missing from many party manifestos. Yet barely five months later the brand new government has set a tough energy target, the City of Rotterdam has set itself an extremely ambitious CO₂ target and the European Union too has formulated its own energy targets.

Legislation and regulations, and policy

Worldwide, in the field of energy the main issue is the continuing high price of oil and gas; the demand for energy continues to increase. Although this has not led to a global energy policy, it has resulted in a spin-off: global climate policy. Shortly after the year under review, on 2 February 2007, the fourth report of the International Panel on Climate Change (IPCC) was published. This report showed beyond a shadow of a doubt that human beings affect the climate. Because of this, attention can now shift from putting items on the agenda to reacting and solving. This is a positive development in view of the fact that a few months previously at the climate summit in Nairobi very little progress had been made for a global post-Kyoto climate policy.

In 2006, the European Union made preparations for a European energy and climate policy that was adopted by the European Commission in January 2007. Europe commits itself to a 20%, possibly even a 30% reduction in emissions of greenhouse gases, a 20% energy saving, at least 20% of energy from sustainable sources and at least 10% from biofuels. All these changes are measured against the situation in 1990 and must be achieved by 2020. The next step within Europe is to negotiate the distribution of the targets across the EU member countries.

In its policy statement, the new Dutch government formulated ambitious energy targets: a 30% reduction in greenhouse gas emissions, a 2% energy saving per year and 20% sustainable energy; all to happen within the same time frame as the European targets. This ambition contrasts with the previous period in which policy targets, such as the deregulation task, rather pushed the implementation of the energy policy into the background.

In 2006, the Province of Zuid-Holland drew up an assessment framework for granting licences to power stations with regard to air quality. This has restricted the maximum permissible emissions for power stations.

As an elaboration on the national energy policy, in 2006 the Province started looking into a 'heat, unless' policy. They want to use this to ensure that residual or ground heat are used wherever possible.

In December 2006 Rotterdam specified its energy programme. Moreover, the city has joined the Large Cities Climate Leadership Group chaired by London and signed up to the Clinton Climate Initiative. The international advisory council of Rotterdam has called on the local authority to be extremely ambitious in its CO₂ targets. The municipality is taking this appeal very seriously; In 2007 Rotterdam formulated a climate ambition for a 50% CO₂ reduction for the city and the port by 2025 compared to the situation in 1990. Measures to be taken by industry include the underground storage of CO₂, large-scale use of biomass, residual heat utilisation and taking measures to increase energy efficiency. Plans in the city include the municipality setting the example, residual heat use in the built environment, sustainable mobility and stimulating innovation.

Efforts

Given that the ambitious energy and climate targets have only been recently formulated, we cannot yet report any large-scale results. A whole range of initiatives are taking place on a smaller scale, however, and action programmes for the longer term are being prepared. For example, a study by the Port Authority, DCMR and OBR will very shortly be published on the options for realising underground CO₂ storage in the Rijnmond region. As a consequence of this study, a consortium will be set up with representatives from local authorities and the business community. This consortium wants to realise large-scale infrastructure for the transportation of CO₂ to empty oil and gas fields in the North Sea. It is applying for a European subsidy to elaborate this.

In 2007, the Province granted licences for a new gas-fired power station (Enecogen, with a DeNO_x filter installation) and for two terminals for the bringing ashore and storage of liquefied natural gas (LNG). Possibilities for using the cold from liquefied natural gas are being investigated.

The increase in the generating capacity of windmills is going according to plan. The development of the residual heat company in Rotterdam is also progressing well.

Future developments

In 2007 the baseline situation (1990) and the present situation will be determined for the CO₂ targets for Rotterdam. In addition, major efforts will be required

to concretise the activities to reduce CO₂ emissions in the city and port. In order to realise the Rotterdam targets an accompanying programme, the Rotterdam Energy and Climate Programme (RECP), has been launched; the participants in the programme are Deltalinqs, the Rotterdam Port Authority, the City of Rotterdam and DCMR.

This year around 400 new consumers will be connected to the heat supply network. In 2008 a part of the residual heat supply network will be ready for use. A lot of dwellings will be connected to the new network which at present get residual heat from a single source. The intention is that in subsequent years an increasing number of dwellings and other buildings will be connected to the residual heat supply network. A few regional municipalities are looking into the options for this; the rest are likely to follow shortly.

In the region a large number of initiatives are ready roll out. Energy use will increase considerably through the arrival of new power stations and industry on the Second Maasvlakte. Without an energy and climate policy, CO₂ emissions in the area would more or less double between now and 2025.

Indicators

The theme report contains suggestions for a series of new indicators. We have been able to include a few of these in this year's MSR report.. There are now maps which indicate the extent to which areas are suitable for residual heat and cold/heat storage. This can help to ensure that these energy-efficient heat sources are not abandoned on the wrong grounds in building plans. A progress monitor for the development of the residual heat supply network has also been incorporated.

The final set of indicators with regard to energy will be partly determined on the basis of the targets and the measures anticipated.

For the theme report CBS data for 2002 was usually used. More recent data for the region was not available. In view of the great ambitions with regard to energy and climate, it is advisable that this situation should be improved. This is why we are investing additional resources into keeping up to date with good recent data. The repercussions of this will certainly be apparent in the next MSR reports.

Environmental care involves activities which reduce the pressure put on the environment and which are not regulated through legislation and regulation, but via covenants and self-regulation. Partly due to this, most of the indicators in this chapter generally have a broader perspective than the other indicators. Since initiatives are often involved which do not apply to the entire region or the whole country, it is not easy to come up with clear-cut and prominent indicators for these. However, we have plenty to report about the developments in the field of environmental care, as shown by the indicator for nature conservation and environmental education activities in Rotterdam. The MKB's Environmental Barometer receives attention via an indicator, as do the environmental plans of major companies and how municipalities have scored in the field of sustainable building

Legislation and regulations, and policy

In 2002 the World Summit on Sustainable Development took place in Johannesburg. Themes which are important for sustainable development at a global level were nominated: water, energy, health, agriculture and biodiversity. The Sustainable Vigour programme is the Dutch elaboration of the agreements which were made in Johannesburg. The core of the national component is that the Dutch government will endeavour to aim at sustainable development in all its activities (from policy development to, for example, its own office buildings).

To this end, the Ministry of VROM is initiating a 'location's sustainability profile' (DPL). Sustainability here comprises the three P's: people, planet and profit, in other words quality of life, environment and the economy. The DPL instrument can help in the realisation of sustainable districts. Using this computer model, municipalities can work out the sustainability profile of a district on their own, compare it with a different, randomly chosen district, and thus reveal the strong and weak points of a district's profile. In this way DPL with the aid of indicators creates a concrete image of what is deemed a sustainable district. Municipalities can base their policy on this when developing new districts or carrying out urban renewal.

Efforts

There are many ways in which households can help to reduce the pressure put on the environment. For example, they can purchase energy-efficient appliances and solar panels, separate waste and use public transport. Information about these topics may be found in chapters 2, 9 and 10. In addition, they can switch over to green savings, make green

investments, and use green energy. We do not provide any information on the degree to which households participate in this because there is no data available on this point. There is some relevant data from the United States, however. It seems a movement has started over there of people who are characterised as the 'cultural creatives'. The people involved are partly influenced in their consumption choices by aspects such as environment, sustainability and integrity. The cultural creatives crop up through all levels of society, irrespective of religious or political beliefs. This group appears to be growing and to function as trendsetters to whom companies gear the marketing of their products. In Europe, too, there is a growing number of conscious consumers. For information about activities which households themselves can develop in order to do their bit towards reducing environmental problems, we refer you to www.milieucentraal.nl Milieu Centraal is an independent agency, subsidised by the Ministries of VROM and Economic Affairs, which provides information about opportunities in this field.

There is also a lot companies can do. To start with, they can introduce an extensive corporate environmental care system (BIM). In this way, they make environmental care part of the normal company process. Having a BIM has now become a permanent element in determining the adequate level of measures; the indicator for this is presented in the chapter on Environmental licensing and enforcement (indicator 7080); this is why we will not deal with it any further here. From 2007 the MKB Environmental Barometer can be used via www.milieubarometer.nl

Companies not only work on sustainability within their own organisation but this also happens on the scale of industrial sites. In various municipalities in the Rijnmond region the business community and local government are working together on making their industrial sites more sustainable. These efforts are aimed at improving both the environment and the investment climate. For example, through sustainable building and regeneration of industrial sites they are attempting to remedy the shortage of industrial sites in the Rijnmond region. The planning application of this has been incorporated into the RR2020.

Furthermore, the government is playing its part. For example, in 2005 the Ministry of Economic Affairs made a financial contribution toward the redevelopment of industrial sites which are of national importance. The goal of the redevelopment is to improve the economic attractiveness of the sites and to prevent space for economic activity being wasted unnecessarily. In this way, together with municipalities and provinces,

Economic Affairs is implementing the industrial sites Action Plan, established in 2004. Economic Affairs made a financial contribution to seven projects in 2005, including Rotterdam City Harbours. This involves Heijplaat, Eemhaven, Waalhaven, Merwedehaven and Vierhavens. In this area totalling approximately 1,400 ha there are over 850 companies which provide work for 20,000 people. And another 2,000 people are actually resident in Heijplaat. A large proportion of the port activities will remain, but at a number of places new functions are being added, such as a change of use for old premises, dwellings and infrastructure.

The Province of Zuid-Holland also gives subsidies to municipalities to regenerate existing sites and increase their attractiveness. In the region, Barendrecht (Dierenstein), Hellevoetsluis (Kickersbloem111), Krimpen aan den IJssel (Stormpolder), Maassluis (industrial sites Action Programme) and Rotterdam (Heijsehaven, Zestienhoven and Schieveen) have received subsidies to this end.

This brings us to the municipalities themselves. By 1998 every municipality ought to have had its own environmental management system (GIM) but in a large number of cases this has not yet been achieved. Stimular now functions as coordinator and driving force for the GIM network in which all the regional municipalities participate. In this network, the municipalities exchange expertise, experience and materials and may also develop joint activities with other participants. The network thus provides a stimulus for GIM activities in the participating municipalities. Something that has resulted from these activities is the website for environmental management systems by and for municipalities, www.gimnet.nl.

Moreover, municipalities can check the degree to which they are promoting sustainability in the municipality; this is done via the Local Sustainability Meter, the successor to the Local Sustainability Mirror, and developed by the NCDO. Subjects which come up include climate and water, social and global, sustainable and enterprise, sustainable purchasing and the canteen. Most municipalities in Rijnmond use at least part of the questionnaire to enable them to evaluate and compare their own policy. In 2007 the municipality of Vlaardingen is going to conduct a pilot project on sustainable purchasing.

One way for municipalities and provinces to demonstrate their function of leading by example in the field of sustainability is membership of the Dutch Climate Alliance. This is a platform in which provincial and local authorities take climate and environmental policy

to a higher level by providing each other with information, assistance and, where necessary, jointly developing activities. The Dutch association is affiliated to the International Climate Alliance. In addition to the Province of Zuid-Holland, the municipalities of Hellevoetsluis, Krimpen aan den IJssel, Maassluis, Ridderkerk, Rotterdam and Schiedam are members of this organisation. Nationwide, about 100 municipalities and 9 Provinces are members.

Future developments

Since 1999, the Rotterdam district of Hoogvliet has been working on a major restructuring programme. The process must be finished by around 2015. The restructuring is taking place at the level of the whole district which makes it one of the first on such a scale within Rotterdam. Approximately 5,000 houses are being demolished and 4,600 new houses are being built. On the northern edge of Hoogvliet, where the environmental pressure is greatest due chiefly to industry and the existing major arterial road, is where the most large-scale thinning out of built-up areas is taking place. New housing is planned in the period between 2003 and 2014. There is the possibility of connection to the new Heat Company network. More information about the Heat Company can be found in chapter 10.

The Rotterdam Port Authority NV is active in the field of environmental care and is conducting a feasibility study into the possibilities of supplying moored ships with energy from the shore. Ships in port that do not have to use their generators to produce electricity will contribute towards limiting the amount of air pollution. You will find more information on air pollution in chapter 4.

External safety is an issue that in recent years has developed substantially as an autonomous policy area. This is stimulated via the so-called Programme Financing among other things. For this reason, from now on a separate chapter will be devoted to external safety, instead of incorporating it into the chapter on licensing and enforcement.

Legislation and regulations, and policy

The Hazard of Major Accidents Decree (BRZO 1999) came into force on 19 July 1999. This decree concerns companies where considerable amounts of hazardous substances are kept on the premises and is aimed at reducing and managing the risks involved in the production and storage of these substances. To this end, requirements are laid down for both the companies and the authorities involved. These authorities (the competent authority under the Environmental Management Act, Labour Inspectorate, Fire Brigade and Water Quality Board) jointly monitor the companies falling under the BRZO. The objectives and cooperation agreements in the monitoring of the BRZO companies are laid down administratively in the BRZO 1999 Rotterdam-Rijnmond 2004-2008 Inspection Programme.

The Decree distinguishes two threshold values: companies subject to prevention of major accidents (PBZO) procedures are companies which exceed the 'low' threshold value. They must develop policy to prevent accidents and lay this down in a 'Prevention of Major Accidents document' (PBZO document). Moreover they must have an effective safety management system (VBS) in which the relevant safety aspects are safeguarded via procedures; companies subject to VR procedures are companies which exceed the 'high' threshold value. They must also draw up a safety report (VR).

BeteRZO is the project programme aimed at improving implementation of the BRZO 1999. This was set up because evaluations carried out in 2004 showed that the quality of the monitoring nationwide needed to improve; the same applied to the cooperation between the four implementation organisations involved (the Labour Inspectorate; the provinces, municipalities and competent authorities; the Environmental Management Act and the Fire Brigade). Action by the authorities is supposed to be timely, consistent, uniform, correct and fair but this turned out to not always be the case. The programme started in the summer of 2004 and will end in the summer of 2006. The points for improvement from the BeteRZO programme will be incorporated into the BRZO implementation in 2007.

Another relevant Act is the External safety of industrial premises Decree (Bevi) of 27 October 2004. This Decree imposes safety standards on local authorities that take decisions about companies which form a risk for people outside the premises. Examples include chemical plants, LPG filling stations, and railway yards where goods trains carrying hazardous substance are shunted. These companies sometimes conduct hazardous activities in close vicinity to houses, hospitals, schools (so-called vulnerable locations) or near to shops, pubs and restaurants and sports centres (limited vulnerable locations). This creates risks for people who live or work in the neighbourhood of such a company. Since its entry into force, the Decree imposes a duty on municipalities and provinces that they must take account of external safety when issuing environmental licences and to draw up local land-use plans. This means, for example that houses must be located a certain distance away from a company that handles hazardous substances

Another important document is the covenant on LPG car gas which was signed by the State Secretary for the Environment and the Association for Liquefied Gas (VVG) on 22 June 2005 in order to improve the safety at and around LPG filling stations. In 2010 all filling stations must comply with new, more stringent safety standards. VROM and the LPG sector have agreed which measures the LPG sector must take to make the supplying of filling stations safer. Once these improvements have been completed, it is estimated that 110 of the more than 2,000 filling stations will not be able to meet the new standards. These filling stations will be relocated. If this is not possible then the sale of LPG will be discontinued. Separate from the agreements in the covenant, 200 of the most hazardous situations will be cleaned up before 2007; this involves filling stations which are located too close to houses, old people's homes, offices, schools or shops.

Efforts

In the framework of the so-called Programme Financing (PFI), the Ministry of VROM has allotted a total of € 20 million to provinces and municipalities to give an impetus to the implementation of the external safety policy. This programme started in 2004. Through the 'Programme financing subsidy scheme for external safety policy of provincial and local authorities 2006-2010' the Ministry of VROM has followed up the first phase. An additional € 100 million will be provided for the external safety policy of provinces and municipalities for the period from 2006 to 2010. VROM emphatically wishes the second scheme to set in train a development

'from new activity to routine'. In other words, less projects and more structural implementation activities and the embedding of structural cooperation at an effective and efficient tier of government.

In this framework, each year a plan is drawn up per region. The Rijnmond programme for 2007 amounts to more than € 2.5 million. The programme comprises activities and projects in the field of permitting, enforcement, transport of hazardous substances, the relationship between safety and spatial planning, stimulating cooperation, training and vision forming. DCMR, the Rotterdam Rijnmond Safety Region (VRR), municipalities and the Rotterdam regional council of governments are working together closely on the further elaboration and implementation of the programme. More information can be found on the website: www.dcmr.nl

In February 2006 the VRR was set up. The VRR is the organisation in which municipalities, Fire Brigade, Ambulance services and Medical Assistance in the event of Accidents and Disasters (GHOR) work in close cooperation with the police, the Port Authority, the DCMR Rijnmond Environmental Agency and the Public Prosecutions Department. The VRR is thus building on the already existing cooperation. The primary aim is to offer the public, even more than at present, safety and care through efficient and effective round-the-clock support facilities as well as through the high quality combating of calamities and disasters.

To this end, the VRR and DCMR commissioned the B&A research bureau to look at the residents of Rijnmond's needs with regard to communication about risks and risk sources in their immediate living environment. From the study it appears that residents in the Rijnmond area have a good idea of what the risk sources are in their living environment. They want to receive information about these on a regular basis, both from the municipality and most definitely from the companies which form the source of these risks. The outcomes of the study give a realistic picture of the attitude of the residents with regard to risks, their knowledge about these risks and their need for information about them. The respondents appear to be well informed about risks in the immediate environment and can also name them. 88% of the residents can name risk sources, such as petrol stations, storage of hazardous substances and terrorism. Moreover, it appears that in its role as a provider of information about risks, the municipality is seen as reliable; in addition, the public expect to get information from the companies themselves.

This need expressed by the residents is the starting point for the communication about risks in the region. Together with the legislation and regulations with regard to risk and crisis communication, it forms the basis for a regional plan on risk communication. The VRR is elaborating this communication plan and will present it to the municipalities involved in the region in 2007.

In their safety report (VR), the companies subject to VR procedures need to demonstrate that they have made every effort to minimise the chance of incidents (and their effects). For this purpose the company must submit an updated VR for assessment to the authorities concerned at least once every five years. The first series of safety reports were submitted in 2001. In 2006 these companies updated their reports and once again submitted them for assessment. Indicator 3062 shows how many VRs were submitted for assessment in 2006 and how they were assessed (complete/ not quite complete /incomplete).

Not only do the authorities assess the VRs but they also carry out periodic preventive BRZO inspections. Following each BRZO inspection they draw up a joint inspection report containing the issues discussed and their findings. In addition, they indicate which violations have been found and make recommendations for improving safety. Indicator 3063 shows the cases where violations, findings and recommendations were reported. The violations are enforced. The authorities involved coordinate the various sections of the enforcement scenarios and subsequently carry these out in accordance with their own regulations.

The Province of Zuid-Holland has published the risk map for the Province on the internet. This can be found on the website www.risicokaart.zuid-holland.nl. The Provinces have developed these risk maps because during the fireworks disaster in Enschede in 2000 it appeared that a lot of residents did not even know that there was a fireworks factory in the area; so after this the government decided that every member of the public should be able to find out about the risks in their own neighbourhood.

Future developments

The government has announced a number of intentions. The government plans stem from a report published in December 2004 entitled 'Samen voor de Buis' ('Working Together on Pipeline Safety'). From the report it appeared that the legislation and regulations for pipelines used to transport hazardous substances were inadequate. The Ministry of VROM, which has been responsible

since 2005 for the policy on pipelines used to transport hazardous substances, wants the installation and maintenance of pipelines properly regulated by 2008.

To begin with, it wants safe separation distances between pipelines used to transport hazardous substances and, for example, hospitals, schools and housing. In February 2007 the Dutch cabinet sent a memorandum to the parliament. The safe separation distances depend among other things on the thickness of the pipeline walls, whether they are high-pressure or not and the substance transported. Additional safeguards must be put in place with regard to existing pipelines which are located too close to housing, for example by means of fencing or warning markers for digging activities.

The government is also advocating a duty of care for pipeline operators such as Gasunie and Shell. This duty would mean that operators must comply with stringent requirements in the design, construction and maintenance of pipelines.

Finally, the government wants to ensure that the public and health care organisations have easy digital access to data on the exact location of pipelines and the substances they are transporting. Pipelines are used, for example, to transport natural gas, oil, chemicals, drinking water and waste water over large distances. The Netherlands has around 18,000 km of underground pipelines which transport hazardous substances, often under high pressure. High-pressure pipelines are chiefly used to transport natural gas and flammable liquids.



In this chapter we are going to take a closer look first at environmental licensing and then at enforcement. This order is also followed in the indicators in this chapter. In the permitting process a further integration with other sectors is taking place, primarily with spatial planning, while at the same time the environmental regulations are being standardized and scaled down.

Legislation and regulations, and policy

The Environmental Management Act continues to play a major role. Before a company is allowed to commence activities which could put pressure on the environment, it must apply for a licence under the Environmental Management Act or give notification on the basis of an order in council (AMvB). An AMvB lays down the environmental regulations for a whole sector. Sometimes the company also has to apply for a licence under the Pollution of Surface Waters Act (WVO). In 1993 the so-called 'expanded scope' principle was incorporated into the Environmental Management Act. This means that the licensing body should not only take the immediate nuisance and emissions into consideration but also such matters as energy saving, waste prevention and water saving.

In implementing the expanded scope principle, a pragmatic approach via lists of measures was adopted. This is a particularly good mode of operation for small and medium-sized enterprises. For larger companies the tailor-made approach is still needed. The Province has set up a project to structurally embed the expanded scope principle in the licensing procedures for the processing industry and waste processing sector. In 2006, they looked at which small and medium-sized enterprises were already participating in an energy covenant (multi-year energy agreements) and which companies could participate. It turns out that the majority of the companies have not signed the covenant. In the coming years these so-called free-riders will be approached to ensure they comply with the current level of technology in the field of energy saving measures.

A final directive which we would like to mention in this context is the European directive on "Integrated Pollution Prevention and Control" (IPPC) which has been in force since 1 September 1996. This directive relates to major industry in Europe and is intended to create equality in Europe as regards the environmental pressure which these companies cause. To this end, the European Union has drawn up reference documents per sector which contain an overview of all the technology used in Europe. From these applied technologies the 'best available technical means' have subsequently been chosen. By 31 October 2007 at

the latest all installations which fall under the directive must apply this best available technical means for the given installation. In the Rijnmond region 66 companies fall under the IPPC directive. By the end of 2006, sixty percent of the companies had already met the requirements.

Efforts

In 2008, the General Provisions for the Environment Act (WABO) will come into force. In preparation for the radical changes which this Act will entail, the municipalities of Krimpen aan den IJssel and Schiedam, in cooperation with the DCMR Rijnmond Environmental Agency, have carried out a pilot project. The points which emerged from this will be included in the process to be set up for granting Spatial and Development permits. In 2007, the municipality of Ridderkerk will run a pilot project for the enforcement of the Spatial and Development permit. Consultation with DCMR about this started in 2006.

Another effort concerns further improvements to the Central Registration Point for hazardous substances (CRP), a database with up to date information about hazardous substances which are kept on the premises of companies in the region. This system is vitally important to the fire brigade because it is a great help to them in being able to identify in advance what substances are at a particular location, where there are stored and whether there is any potential danger for the surrounding area. DCMR also has access to this information so that they can monitor safety. In order to be able to implement monitoring efficiently, a warning function has been added to the CRP. If the data which the companies have input remains within the pre-set limits, nothing will happen. But as soon as anomalies are picked up, the system transmits a warning to the enforcing agency which can then take action if necessary. There are now eighty storage and transshipment companies connected to the Rotterdam system.

DCMR, in cooperation with the municipalities, has set up Tailor-made enforcement (TOM) as a system which is primarily designed for prioritising the implementation of enforcement. Within the 'Samen sturen' (Joint Enforcement) project, DCMR looks at which type of monitoring is preferable in each sector. It makes a distinction between comprehensive monitoring and core monitoring. It also takes account of environmental targets. In 2007 a pilot project will be conducted in a few municipalities. In the 'Environmental targets' project in 2004/2005, among other things spearheads were formulated for each sector. In 2006, DCMR set the environmental targets and working plans alongside

each other. It is still working on ways to measure whether environmental targets have been reached. Moreover, an increasing number of companies now have their own environmental care system with targets and conditions which they check themselves. This involves primarily the major industrial companies. DCMR can then confine itself to monitoring the proper operation of their environmental care system.

In this context, the inspection method in the processing industry is looked at in more detail. Companies have already arranged a lot of matters themselves in management processes so that a detailed inspection is not always necessary. The inspections are carried out in a theme-specific way. Over a five year period the DCMR's enforcing agent must have carried out a detailed inspection of every one of the sections of the licence, instead of conducting a comprehensive inspection on an annual basis. This fits in with the wish of both the authorities and the business community to reduce the administrative burden. At companies which have already arranged a lot of things themselves, the inspections can be carried out in less time than at companies where everything has to be examined in detail. In 2006, the companies were monitored with an emphasis on the theme of 'maintenance and inspection'; in 2007 the theme is 'fire extinguishing methods'.

Furthermore, DCMR has also established a policy document on 'soft' instruments for enforcement. 'Hard' instruments are those instruments which are mentioned in the compliance strategy. In some situations, however, soft instruments may be more effective and more efficient than hard ones. This is why 'soft' instruments are also mentioned; these are aimed at raising awareness, stimulating and motivating compliance with legislation and regulation. In a pilot project, DCMR also gained experience in using a mix of instruments for the enforcement of environmental regulations.

In addition, this year a lot of work has gone into the calculation of a compliance index. The division across groups of companies as it stands at present is based among other things on the list of industry sectors to which attention needs to be devoted in the context of realising environmental targets. This list was drawn up by DCMR. As an example of this, here are the results for three sectors: chemical industry 34%, waste management 35%, greenhouse horticulture 15%. The calculations are based on the number of companies monitored. These were examined to see whether a core licence condition had been violated. An outcome of 15% therefore means that in 2006 only 15% of

the companies violated a core licence condition. Incidentally, the index will be further refined next year. The calculation which has now taken place is a first indication. Next year we will also include data from the sectoral approach or from projects which have been carried out within the respective sectors. This will affect the compliance index because companies in the frameworks mentioned above will be inspected more intensively. In addition, we will look at whether we can also include elements from DCMR's Tailor-made enforcement (TOM) system which measures a company's environmental performance.

The Province of Zuid-Holland together with the regions has been working on a new cooperative agreement on environmental enforcement in Zuid-Holland, which will replace the existing provincial administrative agreement. On 14 December 2006 the new provincial cooperative agreement was signed. New elements in the agreement include the wish for an integral approach, aimed at environmental, and spatial and development legislation, and the attention devoted to life-cycle enforcement. The concrete cooperation and implementation will preferably be transferred to regional and/or local level. The ambition is to intensify cooperation between regulatory and criminal law enforcement.

A lot of capacity is put into intensifying the network and the information exchange. In the region, the Regional Information Consultation on Environment was set up to provide better records for Enforcement with regard to Problem Companies in Rijnmond. An environmental information specialist has been appointed to the Regional Environmental police. These developments can among other things facilitate the implementation of life-cycle enforcement. In 2007 these developments will be further expanded.

In 2006, the 'OM experimental area' project was set up in which Rijnmond formed an experimental area for an effective administration and a target-driven Public Prosecutions Department (OM). Goals of the project include:

- agreements on the involvement of the OM in prioritisation of administrative planning
- criteria with regard to doubtful cases and investigation of incidents and
- monitoring initiatives entailed in information exchange.

Furthermore in the 2006 Rotterdam-Rijnmond regional police force annual plan, agreements were made with the OM regarding the number of companies suspected of environmental violations which should be followed up. At the same time, objectives were formulated

regarding the number of environmental violations that must be found. Agreements have been made with the districts, the Harbour police and the Regional Criminal Investigation Department regarding their share in establishing this. In each police district, environment portfolio holders have been appointed. These portfolio holders get together periodically with the regional environment portfolio holder and the leaders of the Regional Environment Team. During these meetings they exchange among other things best practices for tackling the prioritised livability issues and the local cooperation with network/life-cycle counterparts. An additional point of special interest is the so-called firework regulation at the end of the year.

Future developments

The prospective General Provisions for Environmental Law Act simplifies the application procedure for dwelling, spatial and environmental licences and reduces the time needed for the permitting procedure. The Bill includes a standardised regulation for the Spatial and Development permit. This new licence reduces the administrative burden for companies, residents, municipalities and provinces. The new licence combines the various permission procedures which are needed if a citizen or a company wishes to demolish, (re)build, or use something on a particular site. To this end, the Bill integrates a large number (about 25) of licensing, exemption permits and other permission systems into a single Spatial and Development permit. This involves not only licensing systems under government regulations, such as the environmental licence, building permit, and listed buildings permits but also licensing systems in provincial and municipal bye-laws. In most cases the application runs consecutively with the regular procedure, which takes a maximum of eight weeks (which can be extended once by six weeks). In complex applications the procedure takes six months (which can be extended once by six weeks). In the regular procedure there is a statutory limit; this means that on expiry of this term the licence is issued *ipso jure*. The extended procedure has no statutory limit.

The municipalities and provinces must have brought the Spatial and Development permit into operation by 1 January 2008. From that time it will also be possible to submit applications electronically. The General Provisions for the Environment Act (WABO) bill was submitted to parliament on 18 October 2006. In its meeting on 13 December 2006, however, the parliamentary standing committee from VROM proposed declaring the bill controversial. This means that its entry into force on 1 January 2008 is no longer feasible. After the new government has taken office,

it will be possible to say more about the subsequent parliamentary process and entry into force.

At an earlier stage, eleven existing orders in council for non-agricultural enterprises and the Underground Tanks (Storage) Decree were already amalgamated into the General Activities Decree. At the end of 2006, the Section 8.40 orders in council for agriculture (Arable Farming Decree, Manure Storage Decree and Dairy Farming Decree) were simplified and joined together to form the new Environmental Agriculture Decree. Intensive livestock farms will also fall under this decree. After the enactment of the General Activities Decree and the Environmental Agriculture Decree another look will be taken at whether it is advisable to integrate the two decrees. By means of this integration, the rules will be simplified, standardised and scaled down. From 2008 it is even the intention that only a limited number of companies where activities take place which have a considerable environmental impact will still need an environmental licence. Generally speaking, these are companies which fall under a European Directive. In May 2006, DCMR set up a pilot project in which they gained experience in carrying out the activities under the new decree. This is why it has mapped out which steps are needed and/or possible for the integrated assessment and enforcement of notifications in the framework of the General Activities Decree. In addition it examined the integration of tasks such as information provision to companies, monitoring and enforcement.

On 31 October 2006, the Dutch Lower Chamber accepted this order in council. VROM is endeavouring to ensure that the General Activities Decree enters into force on 1 January 2008. On 20 November 2006, the Upper Chamber passed on the nod the amendment to the Environmental Management Act which is needed to be able to bring the General Activities Decree into force. The Lower Chamber had already accepted the amendment on 31 October 2006. Now that the Lower and Upper Chamber have accepted the simplification and standardising of environmental regulations for companies, the definitive version of the General Activities Decree can be submitted to the Council of State for recommendations.

It now appears the incorporation of the Pollution of Surface Waters Act (WVO) into the General Provisions for the Environment Act (WABO) is as yet one step too far. This means a single Environmental Management Act /Surface Waters Act Decree will not be feasible. However, indirect discharges will be integrated into the spatial and Development permit. In addition to the Spatial and Development permit initiated by VROM,

the Ministry of Transport, Public Works and Water Management is working on a water permit. It is of great importance that the Spatial and Development permit and the water permit should be well attuned to one another, both as regards content and procedures. In the elaboration of the statutory regimes, both ministries will consequently look at how the process of issuing the two permits can be made to fit in with the single office idea, so that the permits develop in a coordinated way.

On 14 February 2006, the Ministry of VROM and DCMR signed an agreement to conduct a pilot scheme for the Spatial and Development permit. In this pilot DCMR, in cooperation with the Directorate General for Public Works and Water Management Zuid-Holland will consider the possibility of issuing environmental licences and waste discharge licenses to a number of companies in the processing industry from a single office. Other relevant research questions in this pilot scheme include:

Is it possible to include the emissions licence from the Dutch Emission Authority in the procedure?

How can the coordination with the Nature Conservancy Act and its competent authority, the Province of Zuid-Holland, be fitted into this?

How can optimisation of the environmental and waste discharge licences for process industry enterprises in Rijnmond be achieved? They often need both licences. Can the administrative expenses for companies filing an application be reduced? This is probably possible.

What are the options for digitalising the Spatial and Development permit?

Ultimately, the study should produce a number of 'best practices' which will be incorporated into the Spatial and Development permit licensing procedure

The regional police and the office of the public prosecutor have also made agreements for 2007 regarding the number of companies suspected of environmental violations which should be prosecuted. The most important environmental issues can be found in the so-called 'green top 10' and the 'grey top 10'. The Regional Criminal Investigation Department and the Interregional Environment Team will address themselves primarily to moderately serious and serious environmental criminality.

Energy use in Rijnmond is substantial, amounting to approximately one seventh of the total energy use in the Netherlands. Around 70% of this is down to industry and power stations; the rest goes to housing (10%), business services and small and medium-sized enterprises (10%), and traffic and greenhouse horticulture (10%).

In compiling the report, use has principally been made of data for the year 2002. For more recent years, there are no reliable, cohesive, sufficiently-detailed figures available. There have been no major changes in energy use since 2002, so a good picture of the current situation can be obtained using this data. More recent data has of course been used whenever possible.

In 2002, the energy generated by sun, wind and biomass provided less than one percent of the total primary energy use. If all the energy from waste is counted as sustainable energy, then 2% of the energy came from sustainable sources. In Rijnmond in 2002 approximately 432 petaJoules of energy was deployed. In the region, reuse of energy occurs. Partly within processes in a company, partly between companies, partly between sectors (industry and power stations; house-building, business services and small and medium-sized enterprises; traffic, greenhouse horticulture). The figure for energy reuse within and between companies is not known. Around 59 petaJoules of energy is transferred between sectors. Half of this is electricity, half is heat. The total energy use in Rijnmond in 2002 including recycling was approximately 491 petaJoules.

On the other hand, in 2002 around 185 petaJoules of heat was lost into the water and another 181 petaJoules into the air. Of this total of 366 petaJoules, 60 percent was from industry and power companies. It appears as if there is a lot to be gained by increasing process-efficiency and recycling the residual heat that is created.

In the region there are a large number of initiatives in the energy sector waiting to go, including the building of new power stations. It is anticipated that this will cause a sharp increase in the energy use in the region and – unless there is a change of policy CO₂ emissions will double.

At a national level, there is an ambition for sustainable energy provision, comprising policy targets of 2% energy savings per year, sustainable energy growth to reach 20% by 2020 and a 30% reduction in greenhouse gas emissions compared to the year 1990, again by 2020. Europe has set comparable

targets. The province is in the process of developing a heat policy. The energy policy will certainly have consequences for the region as a major energy user although as yet no plan has been drawn up for the regional level.

On the other hand, in their Rotterdam Energy and Climate Programme (RECP), the City of Rotterdam, together with the Rotterdam Port Authority, DCMR Rijnmond Environmental Agency and the trade association Deltalinqs, have formulated the ambition for Rotterdam to become the 'capital of CO₂-free energy'. This has led to an aim to halve CO₂ emissions in port and city by 2025 compared to the year 1990. In order to achieve this, various measures are needed, including increased energy-efficiency, use of residual heat, use of biomass and CO₂ storage. Since Rijnmond's industry and power stations are virtually all located in the Rotterdam area, Rotterdam's CO₂ ambitions relate directly to around 80 to 90% of the regional energy use.

The goals at the various administrative levels have a lot in common, but are not effectively interlinked. Not all CO₂-free energy is sustainable (e.g. the use of coal with CO₂ storage or nuclear power). Moreover, Rotterdam's ambitions do not automatically apply to the other municipalities in Rijnmond. Although it is of course important that things do not get stuck at the plan-making stage, it might benefit their implementation if the various goals were integrated into one regional plan.

Rijnmond has a considerable task in terms of realising the various ambitions and targets for energy use and energy provision. In realising those ambitions, however, account must be taken of external effects. After all, various measures for achieving the energy targets have a whole range of other effects. So it is important that integrated testing of the energy measures should take place. Air quality is in any case a relevant factor in this. Conversely, as regards other policy choices it is also important to make an integrated assessment and to include the energy targets in this.

Another way of achieving the energy ambitions is to go for the large-scale realising of industrial life-cycles. Financial instruments, too, such as an investment fund, may bring the measures and targets closer.

For housing, business services and small and medium-sized enterprises, the most important target is to realise space heating which does not involve the conversion of primary sources or electricity into heat. Residual and geothermal heat in combination

with insulation are highly suitable for this. Crucial factors in residual and geothermal heat systems comprise collective heat systems and more emphasis on renovation of the existing build. There is as yet no solution available for the increasing electricity use in the housing sector, business services and small and medium-sized enterprises.

Energy use in the traffic and transport sector can be influenced to some extent at a regional level by means of pricing measures, good infrastructure for bicycles and public transport and leading by example. Furthermore, considerable savings can be made on street lighting.

In greenhouse horticulture, there are various competing options for curbing the dependence on gas. Generally speaking, the energy price is an important factor for this sector, which means that it is possible to achieve renovation relatively quickly by means of cost advantage. The development of the provincial heat policy can help greenhouse horticulture companies which are converting to it to make energetically good choices; in this context residual heat and geothermal heat are preferable to combined heat and power. Supervision in particular is essential in order to realise collective systems.

Based on the insight into the sectors and their energy use, a draft for an administrative agenda has been drawn up which can support and accelerate the desired changes. This took place on the basis of a workshop with various stakeholders. A distinction was made between opportunities within the industry and electricity generation sectors ('port'), within the built-up areas ('city') and opportunities which concern 'port' and 'city' together. In elaborating the opportunities, the RECP is taken into account.

Important points are:

- *Need for dialogue.*

The intended switch to sustainable energy provision and to a low-CO₂ city and port requires major changes in organisation, companies and residents. In order to gain support and cooperation for these changes, it is important to start a broad dialogue.
- *Making choices.*

Achieving energy targets and CO₂ reductions requires clear choices. The important thing is to clearly reward companies and other initiative-takers which invest in energy- and CO₂-reduction measures, but on the other hand to dare to say "No" to companies and projects which do not fit within the constraints of the projected sustainable development.

- *Clearly embed CO₂ reduction targets in policy.*

The important thing is to fully embed the CO₂-reduction policy in regional policy. The CO₂-reduction targets must therefore also be incorporated into the main objectives of regional stakeholders and into regional policy programmes.

Finally, indicators have been identified by means of which the realisation of the energy targets can be tracked. A bibliography can be found at the back of the report.

Overview indicators per page

'The environment in the Rotterdam region 2007'

Indicator	page	chapter	type	name
8016	19A	2	line	Inhabitants in Rijnmond
7004	19B	2	line	Handling of environmental complaints by Municipal Health Services
7076	19C	2	bar	Environmental complaints police
3085	19D	2	line	Complaints about odour, dust and noise
9005	20A	2	line	Index environmental pressure road traffic
3028	20B	2	line	Number of car kilometres driven
4021	20C	2	bar	Kilometres travelled by public transport passengers
4036	20D	2	bar	Number of users public transport
4020	21A	2	bar	Rail passengers (stations)
4022	21B	2	bar	Modal split (motivation)
4028	21C	2	map	P+R-terrain (occupation)
7066	21D	2	map	High quality public transport
9004	22A	2	line	Index environmental pressure major industries
9012	22B	2	line	Environment and economy (power plants)
	23A	2	bar	P+R-terrain (parking places)
5026	30A	3	map	Air quality NO ₂ (building sites)
5005	30B	3	map	Air quality NO ₂ (inhabitants)
5022	30C	3	pie	Air quality NO ₂ (inhabitants %)
5029	30C	3	map	Noise (building sites)
5006	31A	3	map	Noise (inhabitants)
5023	31B	3	pie	Noise (inhabitants %)
5007	31C	3	map	Soil (building sites)
5008	31D	3	map	Archaeology (building sites)
5018	32A	3	map	Light pollution
5021	32B	3	map	Greenhouse horticulture
5030	32C	3	map	External safety (building sites)
5020	32D	3	map	External safety (inhabitants)
5025	33A	3	pie	External safety (inhabitants %)
9003	35A	4	line	Index air quality
3075	35B	4	line	SO ₂ in air
3072	35C	4	line	NO ₂ in air
3079	35D	4	line	Fine suspended particles
3073	36A	4	line	Ozone
3083	36B	4	bar	Signalling codes
3082	36C	4	bar	Smog
3002	36D	4	line	Odour, complaints
3087	37A	4	map	Odour, complaints per municipality
3020	37B	4	line	Premature deaths (by ozone and fine suspended particles)
1058	37C	4	line	Hospital admissions caused by fine suspended particles
1059	37D	4	line	Hospital admissions caused by ozone
3009	38A	4	line	Emission hydrocarbons
4002	38B	4	line	Emission carcinogenic compounds

3025	38C	4	line	Emission particles
4001	38D	4	line	Emission acidifying compounds
3086	39A	4	line	Emission factors road traffic
3046	39B	4	line	Emissions road traffic (CO ₂ , NO _x , hydrocarbons, particles)
3049	39C	4	line	Benzo(a)Pyrene
3067	39D	4	line	Benzene
4032	43A	5	map	Environmentally protected area's noise
3003	43B	5	line	Complaints about noise
4034	43D	5	map	Noise, complaints per municipality (Rotterdam Airport)
4035	43D	5	map	Noise, complaints per municipality (excluding Rotterdam Airport)
4019	44A	5	line	Permitted higher noise levels houses (sources)
4023	44B	5	line	Permitted higher noise levels houses (noise levels)
3056	47A	6	bar	Soil clean-up: results in hectare
5046	47B	6	bar	Clean-up of new contaminated soil
5058	47C	6	bar	Soil protection act
5049	47D	6	bar	Soil clean-up former gas work sites
5060	48A	6	bar	Use of soil clean-up possibilities
5041	48B	6	bar	Destination of contaminated soil
1036	48C	6	bar	Soil clean-up subsidy scheme for companies
5063	48D	6	bar	Soil clean-up of industrial sites
9002	52A	7	line	Index quality national waters
9007	52B	7	line	Eutrophication of surface waters
9008	52C	7	line	Heavy metals in surface waters
1039	52D	7	line	Heavy metals in sludge
1040	53A	7	line	Organic micro pollutants in sludge, national waters
1046	53B	7	bar	Industrial use of groundwater
3048	53C	7	pie	Quality surface swimming water
1025	53D	7	bar	Intake stops Meuse water (drinking water production)
2022	54A	7	bar	Quality surface waters, canals
2023	54B	7	bar	Quality surface waters, ditches
2024	54C	7	bar	Quality surface waters, lakes and pools
2025	54D	7	bar	Quality surface waters, brackish waters
3057	55A	7	pie	Complaints inland waters Delfland
4013	55B	7	bar	Complaints inland waters Hollandse Delta
4046	55C	7	pie	Complaints inland waters Schieland en de Krimpenerwaard
1047	55D	7	map	Wildlife-friendly riverbanks
1030	56A	7	line	Discharges heavy metals by major industries
1032	56B	7	line	Discharges benzene and chlorides
1007	56C	7	line	Discharges oil
1004	56D	7	line	Discharges phosphate and nitrogen
3102	57A	7	bar	Efficiency of waste water purifying plants
4007	57B	7	map	Salinisation
2020	57C	7	bar	Use of ground water
2021	57D	7	map	Buildings without water meter per municipality

2016	58A	7	bar	Quality underground soil/sludge harbours Rotterdam
5014	58B	7	line	Quantity of sludge
8014	58C	7	map	Buildings without sewerage per municipality
8018	58D	7	map	Municipal Water Plan per municipality
9015	62A	8	line	Index nature quality
5055	62B	8	line	Number of butterflies
1049	62C	8	bar	Number of seals
4026	62D	8	line	Number of sand lizards
8029	63A	8	bar	Number of bats
1050	63B	8	bar	Number of common terns
1052	63C	8	bar	Number of redshanks
1051	63D	8	bar	Number of water birds
3030	64A	8	line	Number of summer birds
4045	64B	8	bar	Qualifying species Haringvliet
4000	64C	8	line	Complaints pigeons and vermin
3016	64D	8	bar	Ecological bottlenecks
8023	65A	8	map	Ecological structure
3098	65B	8	bar	Realisation new natural areas RGSP2
5037	65C	8	bar	Nature reserves
3031	65D	8	bar	Urban green in Rotterdam
	66A	8	bar	Dragonflies Kralingse Bos
	66B	8	bar	Butterflies Kralingse Bos
	67A	8	bar	Number of species Kralingse Bos (dragonflies, butterflies, grass-hoppers)
8019	71A	9	map	Municipal Waste Plan per municipality
8020	71B	9	map	Municipal waste analyses per municipality
5010	71C	9	bar	Domestic waste
5004	71D	9	bar	Separated collected domestic waste
6006	72A	9	map	Separate waste collection per municipality (paper)
6007	72B	9	map	Separate waste collection per municipality (organic)
6008	72C	9	map	Separate waste collection per municipality (glass)
6009	72D	9	map	Separate waste collection per municipality (textile)
6010	73A	9	map	Separate waste collection per municipality (small chemicals)
6011	73B	9	map	Separate waste collection per municipality (separated)
3060	73C	9	line	Development income and waste deposition
3074	73D	9	pie	Bio-fuel from waste
	74A	9	bar	Collection of PET-bottles (month)
	74B	9	line	Collection of PET-bottles (year)
	75A	9	bar	Plastic waste in Europe (productive utilisation)
	75B	9	map	Plastic waste in Europe (recycling efficiency per country)
2009	79A	10	bar	Energy balance harbour area Rotterdam
2010	79B	10	bar	Energy production capacity
3081	79C	10	pie	Use of sustainable energy (percentage)
3097	79D	10	bar	Sources of energy

8012	80A	10	map	Use of green power per municipality
3096	80B	10	map	Areas suitable for storage of heat/cold in groundwater
4008	80C	10	map	Areas suitable for use of residual heat
3080	80D	10	map	Transition management project (progress)
8021	81A	10	map	Wind energy (locations)
8028	81B	10	line	Wind energy (production)
4006	81C	10	bar	Emission CO ₂ and target 2025
3006	81D	10	line	Emission CO ₂
4005	82A	10	bar	Energy saved by participants MJA-2-programme
2008	82B	10	map	Cooling water discharges
8015	85A	11	map	Municipal Environmental Policy Plan per municipality
7081	85B	11	map	Sustainable purchasing policy
3064	85C	11	map	Municipalities subsidized for climate improving measures
3065	85D	11	map	Sustainable building
7079	86A	11	map	Implementation internal environmental care per municipality
4111	86B	11	pie	Environment barometers per sector
7100	86C	11	bar	Environment programmes major industries
8013	86D	11	bar	Education of nature and environment in Rotterdam
1033	90A	12	map	Risk contour companies
2026	90B	12	map	Risk contour pipe lines
2707	90C	12	map	Risk contour shipping
1060	90D	12	map	Hazard of Major Accidents Decree
2019	91A	12	pie	Hazardous companies
3066	91B	12	bar	Spatial planning advices related to external safety
3063	91C	12	pie	Enforcement Hazard of Major Accidents Decree
3062	91D	12	pie	Review of safety reports
7105	97A	13	pie	Company categories licensed under the Environmental Management Act
7102	97B	13	line	Licenses municipal industries
7103	97C	13	line	Licenses provincial industries
7080	97D	13	bar	Effective level of measures (major industries)
7024	98A	13	line	Enforcement municipal industries
7072	98B	13	line	Enforcement refineries
7075	98C	13	line	Enforcement process industry
7073	98D	13	line	Enforcement storage and transshipment
7091	99A	13	line	Enforcement power plants
7090	99B	13	line	Enforcement waste processing plants
7106	99C	13	bar	REOV
3099	99D	13	bar	Enforcement soil clean-ups
3054	100A	13	bar	Enforcement soil protection act (percentage)
3055	100B	13	bar	Enforcement soil protection act (categories)
7094	100C	13	bar	Enforcement by police (small misdemeanours)
1022	100D	13	bar	Enforcement by police (crimes)
INWON_0	103	BY1	map	Municipality borders and number of inhabitants

This report describes the state of the environment on a regional scale. Some indicators contain information per municipality. This report is produced by the cooperation initiative MSR. Partners in this cooperation are:

DCMR Milieudienst Rijnmond

Gemeente Rotterdam

GGD Rotterdam-Rijnmond

Hoogheemraadschap van Delfland

Hoogheemraadschap van Schieland en de Krimpenerwaard

Politie Rotterdam-Rijnmond

Provincie Zuid-Holland

Rijkswaterstaat Zuid-Holland

Stadsregio Rotterdam

Waterschap Hollandse Delta

