

Introduction

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Objective

Society is becoming more complex and changing at an ever-faster pace. Policy cannot be solely based on figures that evaluate the past. It also needs a view of the future. How will the environment and nature in Flanders evolve over the coming decades? What impact can policy have on this? These are questions that the Environment Outlook 2030 and Nature Outlook 2030 try to answer.

The environment and nature are subject to autonomous and policy-led changes in society. The Environment Outlook 2030 describes developments in the sectors of the economy and the consequences thereof for the pressure on the environment and environmental quality. The Nature Outlook 2030 focuses on the consequences of environmental quality and land use on biodiversity.

The Environment Outlook 2030 and Nature Outlook 2030 primarily support the Environment, Nature and Energy policy field of the Flemish government. However they are also an aid to other policy fields, authorities and business, organisations and citizens in their contribution to a sustainable society. These outlooks help estimate the impact of the choices made today on the environment and nature of tomorrow. They facilitate long-term thinking and stimulate debate. Amongst others, they offer support to the 2011-2015 Environmental Policy Plan (MINA-plan 4).

The Environment Outlook 2030 analyses the extent by which alternative policy strategies allow the achievement of European and Flemish targets concerning climate change, air quality and water quality:

- the medium-term targets of the European 2020 Energy and Climate Package;
- the long-term target of 60 to 80 % reduction of greenhouse gas emissions by 2050, with a halving of the emissions by 2030, compared to 1990;
- the stricter European emission ceilings for air pollutants;
- the targets of the European Water Framework Directive.

The Environment Outlook 2030 and the Nature Outlook 2030 are not predictions of the future. They describe developments that could occur in the future under specific circumstances. The outlooks offer new insights that help to anticipate unwanted developments and thereby to adjust the future.

Approach

Scenarios are an integral part of outlooks. The European Environment Agency defines scenarios as ‘plausible descriptions of the future on the basis of ‘if-then’ assumptions’. Outlooks on the basis of alternative scenarios are much more interesting than simple prognoses because they allow a comparison of alternative solutions. They also give an idea of the bandwidth within which future developments might vary. They form an attractive approach for dealing with complexity and uncertainty.

The Environment Outlook 2030 outlines the options for the future environmental policy on the basis of three policy scenarios:

- The *reference scenario* investigates the scope of the current environmental policy.
- The *Europe scenario* investigates what may be needed to realise the European ambitions concerning climate change, air quality and water quality.
- The *visionary scenario* investigates how the environment could be safeguarded for present and future generations.

The Nature Outlook 2030 builds further on the reference scenario and the Europe scenario of the Environment Outlook 2030. It describes the possible development of nature in Flanders for both environmental scenarios on the basis of three land use scenarios: the reference scenario, the ‘separated land use’ scenario and the ‘multifunctional land use’ scenario.

The Environment Outlook 2030 and the Nature Outlook 2030 found the scenarios on the basis of quantitative calculations. With adapted mathematical models they translate the causes of change for each scenario to their anticipated effects on nature and the environment. The scenarios in the Environment Outlook 2030 are calculated in consultation with experts and the policy. Both measures within the environmental policy and within other policy fields are considered.

Limitations

The future is uncertain, especially when looking forward multiple decades and when it relates to complex subjects like the environment and nature. The Environment Outlook 2030 and the Nature Outlook 2030 both model a chain of cause and effect relations. The results are consequently subject to a sum of uncertainties. There are also very many gaps in the knowledge.

In any event, figures about the future imply assumptions:

- The Environment Outlook 2030 and the Nature Outlook 2030 are based on one socio-economic outlook in the field of demography, energy prices and economic growth. The medium and long-term projections of the Federal Planning Bureau have been used for this. Such projections are rectilinear in use and disregard unpredictable political, financial, technological or other developments. The social basis for environment and nature may of course also experience changes and are not taken into account.

- The Environment Outlook 2030 and the Nature Outlook 2030 are limited to a number of developments that can be modelled. Every burden on the environment and nature could not be analysed, for instance the waste production of households and business. All cause-effect relations could not be included either. For example, the impact of climate change on the flow rates in watercourses and consequently also the water quality could not be calculated. Finally there was no feedback of the impact that the resulting developments might, in their turn, have on the cause.

Structure

The MIRA reports over the last years and the environmental indicators suggest that climate change, air quality and water quality constitute major challenges to future environmental policy. The Environment Outlook 2030 consequently also particularly focuses on these environmental themes.

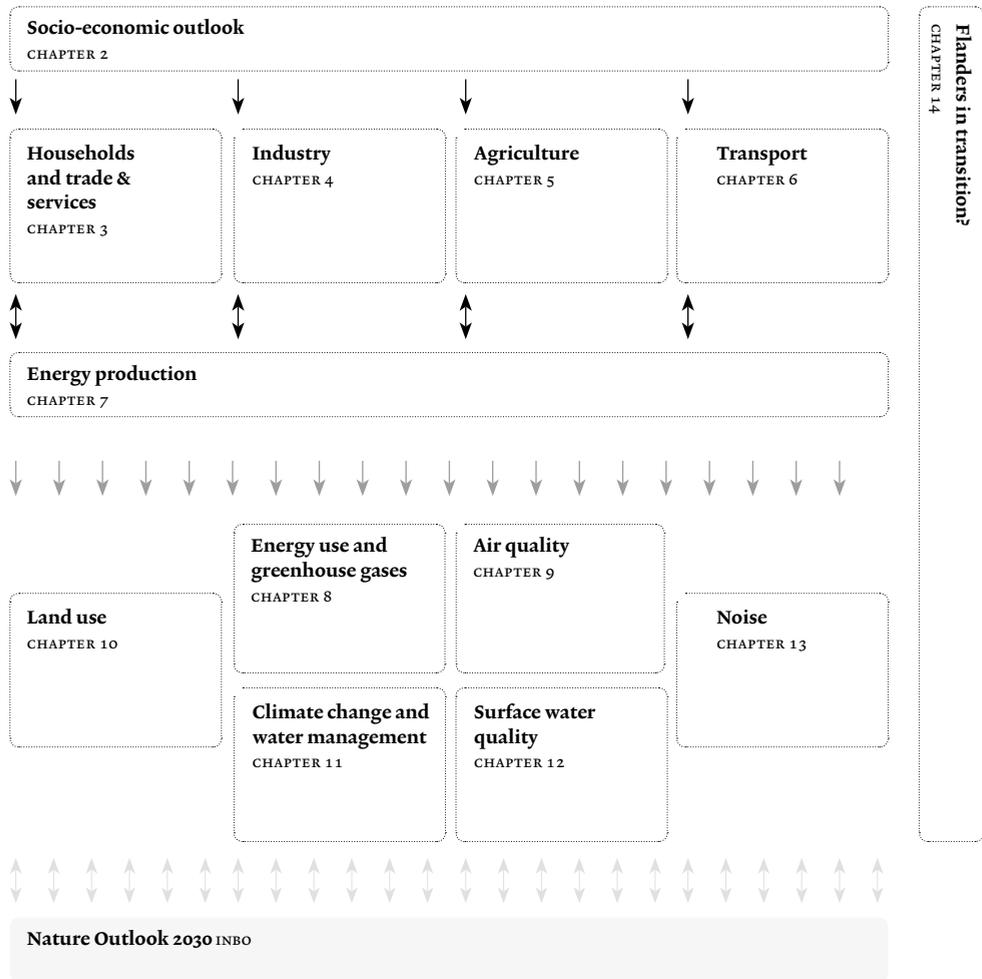
The structure of the Environment Outlook 2030 follows the DPSIR chain. Chapter 1 describes the context of outlooks and the three policy scenarios. The complexity of the exercise is also considered. The external developments in demography, economy and energy prices are considered in Chapter 2 Socio-economic outlook. Chapters 3 to 7 describe the emissions and energy consumption of the main sectors for the three policy scenarios. Chapter 8 brings together the results from the energy consumption and greenhouse gas emissions for Flanders. Chapter 9 explores the future air quality on the basis of the total emissions of acidifying substances, ozone-damaging substances and particulate matter. Chapter 10 describes the spatial consequences of the policy scenarios on the basis of the new Land Use Model. Chapter 11 gives the results of new climate scenarios for Flanders until 2100 and the impact of climate change on water management. Chapter 12 analyses the future quality of the surface water on the basis of measures in the draft river basin management plans. Chapter 13 studies the effects of traffic noise (road, rail, air) on the population.

Chapters 3 to 13 describe how far Flanders develops towards the intended environmental quality with the various scenarios. The most drastic is the visionary scenario that aims at an evolution to a low carbon economy. Chapter 14 is the concluding section of the Environment Outlook 2030. It examines how the transition to a sustainable low carbon economy may be initiated and what role the government and other stakeholders may play in it.

Each chapter of the Environment Outlook starts by outlining a number of main points as an introduction and ends with conclusions for policy.

FIGURE 1 illustrates how the report was realised and what data flows form its basis. External developments in demography, economy and energy prices define the activities of the sectors. The output of the scenarios is a set of pressure indicators. The total environmental pressure from the sectors then proceeds to the environmental themes. The figure also shows the flow of information to the Nature Outlook 2030.

FIG. 1 Relationship between the scenario calculations in the Environment Outlook 2030



Information cascade

To make it easier to read this outlook, the cover has foldout flaps. These give the reader a brief summary of the three scenarios in words and pictures.

The chapters in the Environment Outlook 2030 and the Nature Outlook 2030 only include the most relevant results of the calculations. A detailed description of the methods, models, measurement packages and scenario results can be found in the scientific reports (*in Dutch*) available from www.milieurapport.be or www.nara.be.



The calculations for preparing the Environment Outlook 2030 and the Nature Outlook 2030 resulted in exceptionally numerous results. They cannot all be summarised in a report but are useful for specific applications. A lot more maps and data may be consulted per scenario at www.milieuverkenning.be and www.natuurverkenning.be.