

INTRODUCTION

In spite of the measures taken in the past decades, improvements in the quality of the environment in Flanders are too low or slow. This is demonstrated by the environmental indicators, which VMM-MIRA have been monitoring for years. Many of these indicators, such as emissions to air and water, show a positive but weakening trend. Moreover, the impact on humans, nature and the economy remains significant. Current efforts prove inadequate to push back the environmental impact of our major societal systems: energy, mobility and food.

At the same time, there is growing global demand for increasingly scarcer raw materials and resources. Climate change is becoming ever more apparent. But also other global trends, such as demographic changes, growing polarisation and accelerated technological developments, pose substantial challenges for our society. All these developments put further pressure on the energy, mobility and food systems. Business as usual is not an option.

To secure the prosperity and well-being of future generations without overburdening our planet, a fundamental change of our societal systems is urgently required. These sustainability transitions appear to be slowly emerging, but they are still in the embryonic stage. It is therefore important to create, in the short term, the right conditions for taking decisive accelerated steps towards a sustainable society. The *Environmental Outlook 2018* aims to provide insights into how such a transition can be made.

A new step in the series *Outlook Reports*

The *Environmental Outlook 2030* (2009) already indicated that structural system changes in the short term are necessary to protect the environment in Flanders. However, the transition in Flanders can only be understood if we also take into account the far-reaching developments on a global scale. The report *Megatrends: far-reaching, but also out of reach?* (2014) described six global trends and their impact on the Flemish energy, mobility, production and consumption systems and on spatial planning. It also mapped the strategic consequences for Flemish environmental policy in the short and longer term.

The systemic approach was further elaborated in the indicator report *System Balance 2017*. We examined how the three major societal systems perform in relation to the environment and what solution paths are available to reduce their environmental impact. It also became clear that space can play an important facilitating role in this process.



In the Environmental Outlook 2018, we will elaborate on these solution paths. In doing so, we will demonstrate the urgent need for a systemic approach and dwell on the (transition) behaviour of systems. We will then comprehensively examine how the societal systems energy, mobility and food behave during a transition. We will describe a whole range of potential solutions in detail, estimating their potential in terms of (ecological) sustainability. We will look at how the various solutions can strengthen or interfere with each other. Spatial strategies will be selected that support the sustainability transition of the societal systems. Horizon scanning helps us to understand, and take into account, trends and uncertainties that play a role in the transition. All of this will result in a number of important overarching insights and generic levers that could facilitate the sustainability transition in the various societal systems.

2050: closer than we think

Almost ten years after the *Environmental Outlook 2030*, this report looks further ahead, to the year 2050. In fact, by 2050, Europe aims to have completed the transformation to a low-carbon economy. To this end, Belgium and Flanders need to reduce their greenhouse gas emissions by 80 to 95 per cent as compared to 1990: an ambitious objective that will have far-reaching implications on the way we live, work, move and relax. Our society will undergo massive changes in the coming decades. The systemic approach adopted in this report provides a framework for the necessary sustainable reconfiguration of each of our societal systems.

2050 is far closer than we think. Steps should now be further implemented and accelerated in the desired, sustainable direction. The *Environmental Outlook 2018* offers a broad and multi-faceted analysis of solutions, possible barriers and suitable levers to achieve a timely transition to an (ecologically) sustainable society in Flanders. We hope it provides you with opportunities and inspiration to help shape the societal systems of tomorrow. Because one thing is clear: the future concerns us all.



Gedragen Logistiek Oplossingen Alternatieven Werken Herbomen Wonen Integratie Kernen Infrastructuur Debat Ontwikkelen Aandacht Aangepast

Ruimte Nodig Open Voedingssysteem Betrokken

Landbouw Actoren Delen Langtermijnvisie Geïntegreerd Voedselproductie

Niveau Cruciaal Economisch Opkomend Dominant Elektrisch Inzichten Inzetten

Ecologisch Gunstig Fase Rekening Onderzoek Bewustwording Veranderen Voedselproductie

Schaalniveau Afstemming Basis Groei Creëren Ontwikkelingen

Belang Ruimte Beleid Fossiel Weerstand Kennis Samen

Niches Duurzaam Energiestelsel Milieu Aanbod

Huidig Strategieën Vernieuwbaar Voeding Omslag Aanzienlijk Schaarste

Mobiliteit Duurzaam Lokaal Partijen Verschillen

Draagvlak Samenwerking Duurzaamheid Inertie Concreet

Innovatie Mogelijk Auto Middelen Gedrag

WHAT YOU NEED TO KNOW WHEN READING THE ENVIRONMENTAL OUTLOOK 2018

The *Environmental Outlook 2018* describes and analyses solutions that can contribute to an (ecologically) more sustainable energy, mobility and food system. We examined the environmental potential and possible *trade-offs* and *co-benefits*, and comprehensively mapped the potential barriers and available levers to achieve them.

Three building blocks and two additional studies

This synthesis report is based on various background studies and has been prepared with the help of a broad group of experts.

Three **building blocks** form the basis for this report:

1. An **analysis of the evolution of environmental indicators**, which shows the state of the environment in Flanders and the trends that can be discerned;
2. A **horizon scanning** in which megatrends are updated and societal developments are outlined that can affect the transition to sustainability;
3. **Sustainable solutions** for three important societal systems: energy, mobility and food.

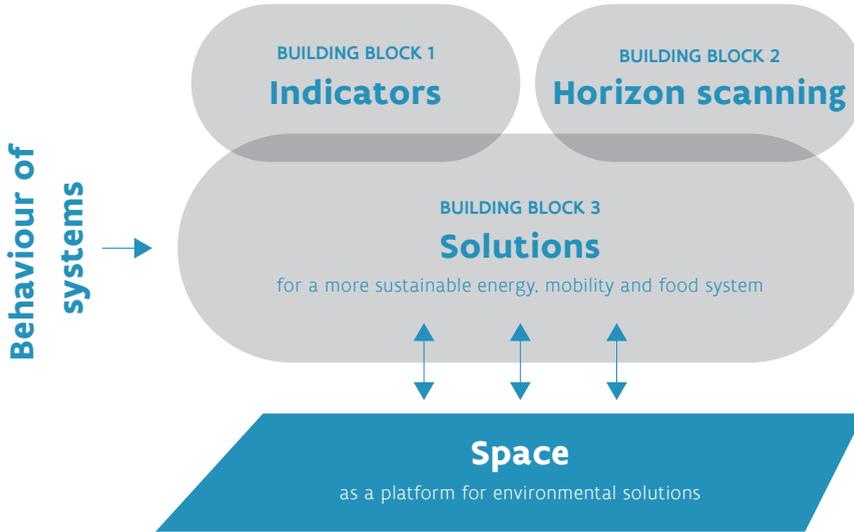
Two **additional studies** provide essential insights in this context:

- **Towards a diagnostic of system change** investigates how the societal systems in Flanders behave when they experience an impulse to transition.
- **Space as an integrating platform for environmental solutions** offers a selection and analysis of spatial strategies that enable and/or support sustainable solutions for various systems in an integrating manner.

The analysis of the evolution of environmental indicators, being the first building block of the *Environmental Outlook 2018*, is based on the comprehensive set of indicators – already over two hundred – monitored by MIRA at www.milieurapport.be/indicatoren. These indicators identify ongoing trends and tell us what this can learn us about the current environmental policy in Flanders.

For the other two building blocks and for the additional studies, we called on external expert-authors, who, in turn, worked with a broad group of (field) experts from various disciplines. For an overview of the different studies on which this report is based and their respective authors, please refer to the overview at the end of this report. The studies (in Dutch, with English summary) are available at en.milieurapport.be/publications.

STRUCTURE OF THE STUDY FOR THE ENVIRONMENTAL OUTLOOK 2018



MIRA - VMM

Focus on solutions

At the heart of the *Environmental Outlook 2018* is the building block "solutions". Each individual societal system has been subjected to an analysis of potential sustainable solutions through a combination of literature study and a targeted consultation of experts brought together in focus groups and panels.

- In a first step, the various possible **solutions and innovations were inventoried**. These fall within the scope of the solution paths already identified in the *MIRA System Balance 2017* and - deliberately - include a wide range of solutions, from existing to relatively new ones, and in some cases even methods and technologies that are still in an experimental phase.
- In a second step, the **environmental potential of the various solutions** and innovations was mapped as accurately as possible. Also possible *trade-offs* and *co-benefits* were identified within the broader framework of sustainability. These may also be relevant for other societal systems, and sometimes extend beyond the purely ecological level to include the social or economic level.
- Finally, the major **barriers and levers** for each of the solution pathways were analysed. To this end, one or more workshops were organised with a broad group of (field) experts, who examined the role to be played by innovation actors as well as the role reserved for the other actors, including the government.

How is the *Environmental Outlook 2018* structured?

This report contains a concise presentation of the results from the comprehensive studies as a coherent whole.

In the first chapter, we will identify the dominant trends in the Flemish environment and their implications on the limitations of the current environmental policy. We will also describe the challenges and uncertainties that are inherent in global megatrends. Based on these findings, we will argue why system solutions are central to any reflection on sustainability transitions.

We will then devote three chapters to a detailed discussion of three societal systems: energy, mobility and food. First, we will outline the framework and the state of the transitions. Within the various solution paths, we will describe specific possible solutions with an assessment of their potential in terms of environmental impact and sustainability. We will also dwell on any barriers and possible levers that could facilitate the implementation of the solutions.

Integrative spatial approaches will be addressed in a separate chapter. This results in the formulation of priority spatial strategies that could enable and support environmental solutions across different societal systems.

Intermezzos between the chapters provide an insight into how specific methodologies were applied and the resultant insights. They take an in-depth look at the (transition) behaviour of systems and the importance of horizon scanning.

In a final chapter, we will formulate insights and findings that can be used by policy makers, but also by any other stakeholders, as a basis to help shape the transition to an ecologically sustainable Flanders in the years ahead.