THE EUROPEAN ENVIRONMENT
STATE AND OUTLOOK 2015

EXECUTIVE SUMMARY

European Environment Agency

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In 2015, Europe stands roughly halfway between the initiation of EU environmental policy in the early 1970s and the EU's 2050 vision of 'living well within the limits of the planet'[(1)]. Underlying this vision is a recognition that Europe's economic prosperity and well-being is intrinsically linked to its natural environment — from fertile soils to clean air and water.

Looking back on the last 40 years, implementation of environment and climate policies has delivered substantial benefits for the functioning of Europe's ecosystems and for the health and living standards of its citizens. In many parts of Europe, the local environment is arguably in as good a state today as it has been since the start of industrialisation. Reduced pollution, nature protection and better waste management have all contributed.

Environmental policies are also creating economic opportunities and thereby contributing to the Europe 2020 Strategy, aimed at making the EU into a smart, sustainable and inclusive economy by 2020. For example, the environment industry sector, which produces goods and services that reduce environmental degradation and maintain natural resources, grew by more than 50% in size between 2000 and 2011. It has been one of the few economic sectors to have flourished in terms of revenues, trade and jobs since the 2008 financial crisis.

Despite the environmental improvements of recent decades, the challenges that Europe faces today are considerable. European natural capital is being degraded by socio-economic activities such as agriculture, fisheries, transport, industry, tourism and urban sprawl. And global pressures on the environment have grown at an unprecedented rate since the 1990s, driven not least by economic and population growth, and changing consumption patterns.

At the same time, growing understanding of the characteristics of Europe's environmental challenges and their interdependence with economic and social systems in a globalised world has brought with it increasing recognition that existing knowledge and governance approaches are inadequate to deal with them.

It is against this backdrop that the SOER 2015 has been written. Based on data and information from numerous published sources, this synthesis report evaluates the European environment's state, trends and prospects in a global

context, and analyses opportunities to recalibrate policies and knowledge in line with the 2050 vision.

Europe's environment today

Achieving the 2050 vision focuses actions in three key areas:

- protecting the natural capital that supports economic prosperity and human well-being;
- stimulating resource-efficient, low-carbon economic and social development;
- safeguarding people from environmental health risks.

The analysis summarised in Table ES.1 indicates that while environmental policy has delivered many improvements, substantial challenges remain in each of these areas.

Europe's natural capital is not yet being protected, conserved and enhanced in line with the ambitions of the 7th Environment Action Programme. Reduced pollution has significantly improved the quality of Europe's air and water. But loss of soil functions, land degradation and climate change remain major concerns, threatening the flows of environmental goods and services that underpin Europe's economic output and well-being.

A high proportion of protected species (60%) and habitat types (77%) are considered to be in unfavourable conservation status, and Europe is not on track to meet its overall target of halting biodiversity loss by 2020, even though some more specific targets are being met. Looking ahead, climate change impacts are projected to intensify and the underlying drivers of biodiversity loss are expected to persist.

Turning to resource efficiency and the low-carbon society, the short-term trends are more encouraging. European greenhouse gas emissions have decreased by 19% since 1990 despite a 45% increase in economic output. Other environmental pressures have also decoupled in absolute terms from economic growth. Fossil fuel use has declined, as have emissions of some pollutants from transport and industry. More recently, the EU's total resource use has declined by 19% since 2007, less waste is being generated and recycling rates have improved in nearly every country.

While policies are working, the 2008 financial crisis and subsequent economic recessions also contributed to the reduction of some pressures, and it remains to be seen whether all improvements will be sustained. Moreover, the level of ambition of existing environmental policy may be inadequate to achieve Europe's long-term environmental goals. For example, projected greenhouse gas emissions reductions are currently insufficient to bring the EU onto a pathway towards its 2050 target of reducing emissions by 80–95%.

Regarding environmental risks to health, there have been marked improvements in the quality of drinking water and bathing water in recent decades and some hazardous pollutants have been reduced. However, despite some improvements in air quality, air and noise pollution continue to cause serious health impacts, particularly in urban areas. In 2011, about 430 000 premature deaths in the EU were attributed to fine particulate matter ($PM_{2.5}$). Exposure to environmental noise is estimated to contribute to at least 10 000 premature deaths due to coronary heart disease and strokes each year. And growing use of chemicals, particularly in consumer products, has been associated with an observed increase of endocrine diseases and disorders in humans.

The outlook for environmental health risks in coming decades is uncertain but raises concern in some areas. Projected improvements in air quality, for example, are not expected to be sufficient to prevent continuing harm to health and the environment, while health impacts resulting from climate change are expected to worsen.

Table ES.1 An indicative summary of environmental trends

	5–10 year trends	20+ years outlook	Progress to policy targets	Read more in Section ...
Protecting, conserving and enhancing natural capital				
Terrestrial and freshwater biodiversity			☐	3.3
Land use and soil functions			No target	3.4
Ecological status of freshwater bodies			☒	3.5
Water quality and nutrient loading			☐	3.6
Air pollution and its ecosystem impacts			☐	3.7
Marine and coastal biodiversity			☒	3.8
Climate change impacts on ecosystems			No target	3.9
Resource efficiency and the low-carbon economy				
Material resource efficiency and material use			No target	4.3
Waste management			☐	4.4
Greenhouse gas emissions and climate change mitigation			☑/☒	4.5
Energy consumption and fossil fuel use			☑	4.6
Transport demand and related environmental impacts			☐	4.7
Industrial pollution to air, soil and water			☐	4.8
Water use and water quantity stress			☒	4.9
Safeguarding from environmental risks to health				
Water pollution and related environmental health risks			☑/☐	5.4
Air pollution and related environmental health risks			☐	5.5
Noise pollution (especially in urban areas)		N.A.	☐	5.6
Urban systems and grey infrastructure			No target	5.7
Climate change and related environmental health risks			No target	5.8
Chemicals and related environmental health risks			☐/☒	5.9

Indicative assessment of trends and outlook		Indicative assessment of progress to policy targets	
	Deteriorating trends dominate	☒	Largely not on track to achieving key policy targets
	Trends show mixed picture	☐	Partially on track to achieving key policy targets
	Improving trends dominate	☑	Largely on track to achieving key policy targets

Note: The indicative assessments presented here are based on key indicators (as available and used in SOER thematic briefings), as well as expert judgement. The corresponding 'Trends and outlook' boxes in the respective sections provide additional explanations.

Understanding systemic challenges

Looking across these three priority areas of the 7th Environment Action Programme, Europe has made progress in reducing some key environmental pressures, but often these improvements have not yet translated into improved ecosystem resilience or reduced risks to health and well-being. Furthermore, the long-term outlook is often less positive than recent trends might suggest.

A variety of factors contribute to these disparities. The dynamics of environmental systems can mean that there is a substantial time lag before declining pressures translate into improvements in the state of the environment. In addition, many pressures remain considerable in absolute terms despite recent reductions. For example, fossil fuels still account for three-quarters of the EU energy supply, imposing a heavy burden on ecosystems through climate change, acidification and eutrophication impacts.

Feedbacks, interdependencies and lock-ins in environmental and socio-economic systems also undermine efforts to mitigate environmental pressures and related impacts. For example, improved efficiency in production processes can lower the costs of goods and services, incentivising increased consumption (the 'rebound effect'). Changing exposure patterns and human vulnerabilities, for example linked to urbanisation, can offset reductions in pressures. And the unsustainable systems of production and consumption that are responsible for many environmental pressures also provide diverse benefits, including jobs and earnings. This can create strong incentives for sectors or communities to resist change.

Perhaps the most difficult challenges for European environmental governance arise from the fact that environmental drivers, trends and impacts are increasingly globalised. A variety of long-term megatrends today affect Europe's environment, consumption patterns and living standards. For example, the escalating resource use and emissions that have accompanied global economic growth in recent decades have offset the benefits of Europe's success in cutting greenhouse gas emissions and pollution, as well as creating new risks. Globalisation of supply chains also means that many impacts of Europe's production and consumption occur in other parts of the world, where European businesses, consumers and policymakers have relatively limited knowledge, incentives and scope to influence them.

Recalibrating policy and knowledge for transition to a green economy

The EEA's report The European environment — state and outlook 2010 (SOER 2010) drew attention to the urgent need for Europe to shift towards a much more integrated approach to addressing persistent, systemic environmental challenges. It identified the transition towards a green economy as one of the changes needed to secure the long-term sustainability of Europe and its neighbourhood. The analysis summarised in Table ES.1, provides limited evidence of progress in effecting this fundamental shift.

Taken together, the analysis suggests that neither environmental policies alone nor economic and technology-driven efficiency gains are likely to be sufficient to achieve the 2050 vision. Instead, living well within ecological limits will require fundamental transitions in the systems of production and consumption that are the root cause of environmental and climate pressures. Such transitions will, by their character, entail profound changes in dominant institutions, practices, technologies, policies, lifestyles and thinking.

Recalibrating existing policy approaches can make an essential contribution to such transitions. In the environment and climate policy domain, four established and complementary approaches could enhance progress to long-term transitions if considered together and implemented coherently. These are: mitigating known ecosystem and human health impacts while creating socio-economic opportunities through resource-efficient technological innovations; adapting to expected climate and other environmental changes by increasing resilience, for example in cities; avoiding potentially serious environmental harm to people's health and well-being and ecosystems by taking precautionary and preventive action, based on early warnings from science; and restoring resilience in ecosystems and society by

enhancing natural resources, contributing to economic development and addressing social inequities.

Europe's success in moving towards a green economy will depend in part on striking the right balance between these four approaches. Policy packages that include objectives and targets explicitly recognising the relationships between resource efficiency, ecosystem resilience and human well-being would accelerate the reconfiguration of Europe's systems of production and consumption. Governance approaches that engage citizens, non-governmental organisations, businesses and cities would offer additional levers in this context.

A variety of other opportunities are available for steering the needed transitions in unsustainable systems of production and consumption:

- Implementation, integration and coherence of environment and climate policy. The foundation for short- and long-term improvements in Europe's environment, people's health and economic prosperity rests on full implementation of policies, and better integration of the environment into the sectoral policies that contribute most to environmental pressures and impacts. Such areas include energy, agriculture, transport, industry, tourism, fisheries and regional development.
- Investing for the future. The production-consumption systems that meet basic social needs such as food, energy, housing and mobility rely on costly and long-lasting infrastructure, meaning that investment choices can have long-term implications. This makes it essential to avoid investments that lock society into existing technologies, and thereby limit innovation options or hinder investments in substitutes.
- Supporting and upscaling niche innovations. The pace of innovation and diffusion of ideas plays a central role in driving systemic transitions. In addition to new technologies, innovation can take diverse forms, including financial tools such as green bonds and payments for ecosystem services; integrated resource management approaches; and social innovations such as 'prosumerism', which merge the role of consumers and producers in developing and providing, for example, energy, food and mobility services.
- Improving the knowledge base. There is a gap between available, established monitoring, data and indicators and the knowledge required to support transitions. Addressing this gap requires investment in better understanding of systems science, forward-looking information, systemic risks and the relationships between environmental change and human well-being.

The common timeframe that applies to the EU's 7th Environment Action Programme, the EU's Multiannual Financial Framework 2014–2020, the Europe 2020 Strategy and the Framework Programme for Research and Innovation (Horizon 2020) offers a unique opportunity to harness synergies across policy, investment and research activities in support of the transition to a green economy.

The financial crisis has not reduced the focus of European citizens on environmental issues. Indeed, European citizens strongly believe that more needs to be done at all levels to protect the environment, and that national progress should be measured using environmental, social and economic criteria.

In its 7th Environment Action Programme, the EU envisions that young children today will live around half their lives in a low-carbon society, based on a circular economy and resilient ecosystems. Achieving this commitment can put Europe at the frontier of science and technology but calls for a greater sense of urgency and more courageous actions. This report offers a knowledge-based contribution towards meeting those visions and goals.

Notes

(1) The 2050 vision is set out in the EU's 7th Environment Action Programme (EU, 2013).

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