PART I

Chapter 1

Key environmental trends

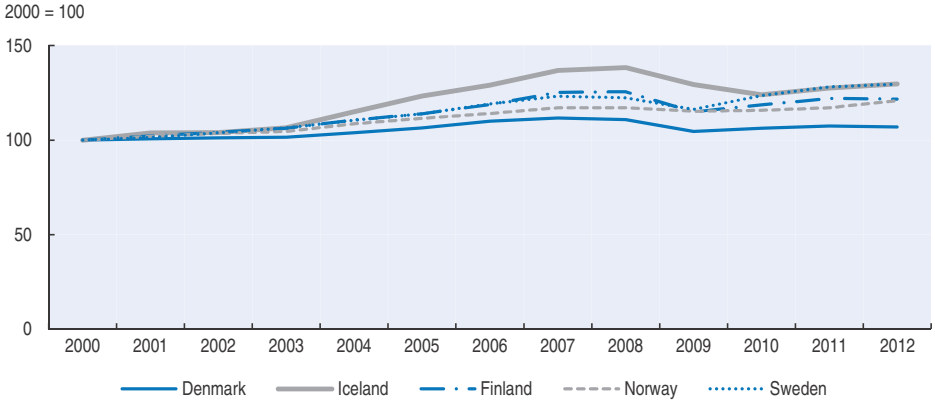
Iceland's population enjoys good environmental quality and a relatively high standard of living. This chapter provides a snapshot of key environmental trends in Iceland over the period since 2000. It highlights some of the country's main environmental achievements and remaining challenges on the path towards green growth and sustainable development. The chapter describes Iceland's progress in using energy and natural resources efficiently; in reducing the carbon intensity of its economy; in managing its natural asset base; and in improving its people's environmental quality of life.

1. Introduction

This chapter provides a snapshot of key environmental trends in Iceland. It highlights some of the main environmental achievements and remaining challenges on the path towards green growth and sustainable development, focusing on the period since 2000. Drawing on indicators from national and international sources, it broadly follows the OECD framework for monitoring progress towards green growth (OECD, 2011a). After a brief overview, the chapter describes Iceland's progress in using energy and natural resources efficiently, in managing its natural asset base and in improving its people's environmental quality of life. To the extent possible, it compares the state of the environment and key environmental trends with those of other OECD member countries and in relation to Iceland's national and international commitments. It thereby provides a baseline for subsequent chapters that assess the effectiveness of Iceland's environmental policies in influencing these trends and in using environmental objectives to generate economic opportunities.

Iceland has a small, open economy built on ample renewable energy potential, unique natural tourist attractions and fisheries. With about 1.5 million tonnes of fish catches in 2012, Iceland remains a major fishing country. After steep growth over 2003-07, the economy fell dramatically during the 2008/09 crisis, then started to grow again in 2011. With high per capita income, low inequality rates and good environmental quality, Icelandic citizens enjoy a high standard of living (Box 1.1 and Figure 1.1). As part of the European Economic Area, Iceland is committed to adopt and implement part of the EU environmental legislation (Chapter 2).

Figure 1.1. **Economic performance in Nordic countries in 2000-12**



Note: GDP at 2005 prices and purchasing power parities.
Source: OECD (2013), *OECD Economic Outlook No. 93* (database).

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Box 1.1. **The economic and social context**

The economy

- Iceland's economy grew faster than the OECD average for most of the 2000s. The annual growth rate was 2.2% between 2000 and 2012, compared to 1.6% in the OECD as a whole. The economy faced a deep recession caused by the collapse of the country's three main banks in October 2008. It has slowly recovered since then, although growth weakened in 2012 to 1.4% (OECD, 2013a).
- The population enjoys relatively high living standards. In 2012, gross domestic product (GDP) per capita was about USD 34 000 (in 2005 prices and purchasing power parities), ranking it among the top 15 OECD member countries (Annex I.A).
- Iceland has a strong industrial base, mostly energy-intensive aluminium smelting. Industry accounts for about 25% of GDP, slightly above the OECD average. Services, including tourism, account for almost 68% of GDP.
- Iceland is a major fishing country: the fishing industry accounts for about 7% of GDP. Marine products represented more than 25% of total exports of goods and services in 2012 (measured in value); the share has been in decline since 2000.
- Tourism is one of the fastest-growing sectors of the economy. In 2010, its contribution to GDP reached 6%, compared with an OECD average of 4.7%. The number of visitors grew strongly, especially following the financial crisis in 2008 and the significant devaluation of the Icelandic króna. In 2012, 673 000 people visited Iceland, more than double the country's population (Chapter 5).
- International trade plays a significant role in the economy. The current account reflects a greater increase in exports than in imports as a share of GDP. In 2012, exports in Iceland amounted to some 59% of GDP, while imports represented about 53%, above the OECD averages of about 29% for both exports and imports (Annex I.A).
- The unemployment rate was 6% in 2012, below the OECD average (8%) (Annex I.B).
- Both income inequality (as measured by the Gini coefficient) and relative poverty are low compared to many other OECD member countries (Annex I.B). However, the unchanged share of population at risk of relative poverty reflects declines in both low-income households' incomes and in the median income (OECD, 2013b).

Public finance

- The fiscal balance of Iceland worsened during the banking and economic crisis to a deficit of 13.5% of GDP in 2008 (compared with an 8.5% average deficit among OECD countries). A sizeable improvement in the government's fiscal position (to -3.8% of GDP in 2012) has helped boost confidence in the financial system (OECD, 2013a). Public debt has increased sharply since 2000, from 33.8% of GDP to 81.3% in 2010.
- General government spending has generally been high in the last decade, accounting for about 47% of GDP in 2011. Environmental protection accounted for 1.3% of total general government expenditure that year, down from 1.8% in 2000 (Chapter 3).
- Icelandic taxation levels are slightly higher than the OECD average but significantly lower than in other Nordic countries. In 2011, the tax/GDP ratio stood at 35.9%, compared with an OECD average of 34.1%. The tax system relies on direct taxation of individual and corporate income more than the average for EU countries (Eurostat, 2013) (Chapter 3).
- Environmentally related taxes accounted for 2.2% of GDP in 2012, compared with an OECD Europe average of 2.5%. They consist mostly of energy taxes.

Box 1.1. **The economic and social context** *(cont.)*

The population

- In 2012, the population of Iceland was about 320 000. Population density is low: 3 inhabitants per square kilometre, compared to 109 on average in OECD Europe.
- About 63% of the population lives in urban settlements, which occupy only about 1% of Iceland's area.
- Life expectancy at birth reached 82.4 years in 2011, continuing a trend of improvement and putting Iceland in the top 10 of OECD member countries. The fertility rate was 2 children per woman in 2011.
- The population is relatively young: the share of people aged 15 and younger was 21% in 2012, among the highest in the OECD and above the OECD average of 18.5%. The elderly population (aged 65 and over) represents about 12.8% of the total, compared to an OECD average of 15%.
- About 71% of the working-age population (age 25 to 64) had at least upper secondary education in 2011, one of the lowest rates in the OECD (Annex I.B). However, the share of tertiary graduates within the same age group (32%) was above the OECD average (30.7%).

The carbon intensity of the economy, in decline since 2000, is among the lowest in the OECD. This reflects the fact that the share of renewable resources in the energy supply is the highest in the OECD. Power generation has been significantly expanded to meet booming demand by energy-intensive industry. As a result, the energy intensity of the economy has increased to four times the OECD average. Industry is by far the largest consumer of energy and source of greenhouse gas (GHG) emissions. Between 2000 and 2011, GHG emissions increased by 14%, but remained within the limits of Iceland's commitment under the Kyoto Protocol (Section 2.1).

Iceland has made progress in improving the material productivity of its economy, i.e. the economic output generated per unit of material used. Its material productivity is in line with the OECD Europe average. The amount of materials used in the economy fell sharply with the economic crisis, as did the generation of municipal waste. Municipal waste generated per capita was below the average level in the OECD in 2012. The implementation of EU waste-related legislation has helped divert waste from landfills and increase recycling, but half the municipal waste generated still goes to landfills (Section 2.2).

Glaciers, rivers and lakes cover 13% of Iceland's area, resulting in abundant freshwater supplies. This abundance, combined with the small population, results in one of the lowest intensities of water use among OECD countries. Less than 1% of the land area is artificially built, and agricultural land is scarce. Vegetation is mostly subarctic and characterised by abundant grasses, sedges and related species. In the highlands and lava fields vegetation is mainly mosses and lichens. National parks and reserves have been expanded since 2000, especially with the establishment of Vatnajökull National Park. About 20% of the land area is under some form of nature protection, among the highest shares in the OECD. About half the country suffers from acute soil erosion, partly due to overgrazing, and more than 290 species are threatened. Several activities exert pressure on Iceland's biodiversity, including hydropower and geothermal exploitation, urban sprawl and tourism development (Section 3).

Iceland's people appear to be more satisfied with environmental quality than in the OECD as a whole. Groundwater is of excellent quality and does not need treatment before

consumption. Concentration of nutrients has been historically low, although the nitrogen and phosphorus balance has increased in line with agricultural production (Section 2.2). About 73% of the population is connected to wastewater treatment systems (including individual treatment facilities), most of which do not provide secondary or tertiary treatment. Nevertheless, the burden of disease attributable to the environment, water and sanitation is among the lowest in Europe (Section 4).

Emissions of most air pollutants declined in the 2000s and ambient air quality is generally good in the Reykjavík area. However, the annual mean concentration of small particulates continues to exceed the limit value; the use of studded tyres, which wear away the road asphalt, is a major factor. Geothermal exploitation is a major source of sulphur oxides (SO_x) and hydrogen sulphide (H_2S). Emissions of both have risen considerably since 2000. Concentrations of H_2S in the Reykjavík area have often exceeded the exposure standards, with potential impacts on human health and ecosystems (Section 4).

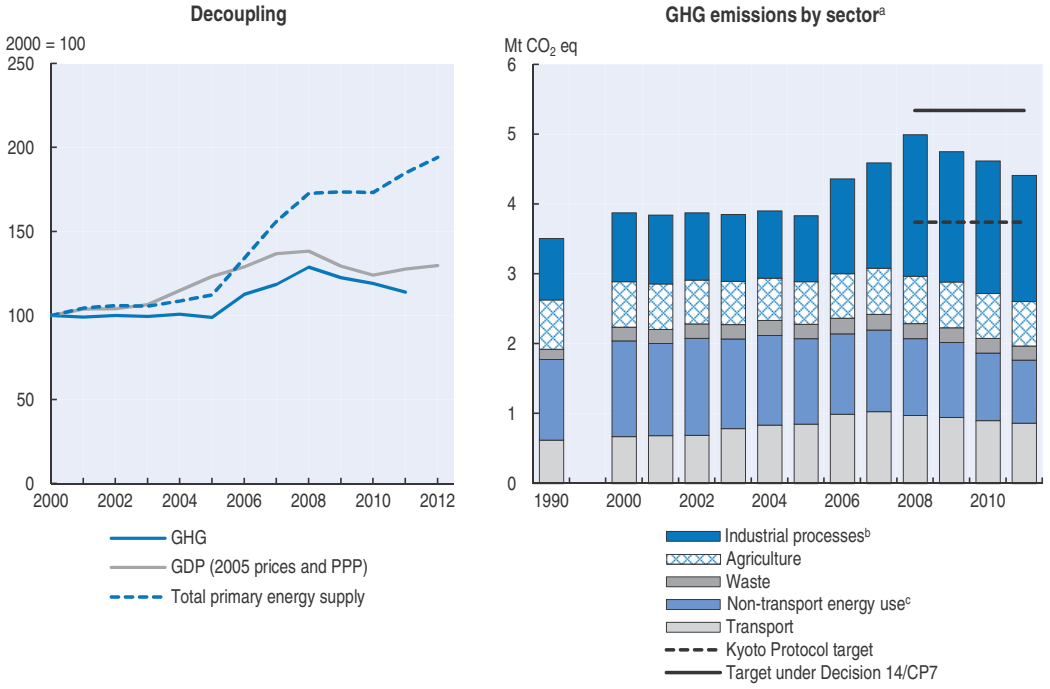
2. Transition to a low-carbon, energy- and resource-efficient economy

2.1. Carbon and energy intensities

Greenhouse gas emissions

- Iceland's GHG emission profile is unique in a number of respects: i) emissions from energy industries are negligible because of the extensive use of renewables for power and heat generation and the absence of refineries; ii) emissions from space heating and energy use in manufacturing are modest; and iii) industrial processes (mostly in the aluminium industry) are by far the largest contributor to GHG emissions.
- Overall, GHG emissions (excluding emissions and removals from land use, land-use change and forestry) have grown by 14% since 2000, at a lower rate than GDP (Figure 1.2). As of 2011, Iceland was on track to reach its Kyoto Protocol target to keep the increase in GHG emissions within 10% from the 1990 level in 2008-12, excluding carbon dioxide (CO_2) emissions from new heavy industry units (mainly aluminium smelters) that use renewable power sources and best available technology (Decision 14/CP.7) (Figure 1.2; Chapter 4).
- Aluminium production processes mainly emit CO_2 and perfluorocarbons (PFCs). Aluminium smelters in Iceland are among the least GHG-intensive in the world owing to the use of renewables-based electricity (Chapter 4). However, because of expansion in production capacity, GHG emissions from industrial processes grew by 83% between 2000 and 2011 (Figure 1.2), to reach 35% of Iceland's emissions (Figure 4.6).
- Energy use in transport, mainly by road, is the second largest single source of GHG emissions (17% of total emissions). Despite a decline since 2007, due to the economic crisis and higher fuel prices, in 2011 transport emissions were 28% above the 2000 level. CO_2 emissions from fuel use in fishing fell by 24%, reflecting a reduction in the fishing effort, improved efficiency and some switching to renewables.
- The carbon intensity of the economy (CO_2 emissions from fossil fuel combustion per unit of GDP) has continued to decline and is among the lowest in the OECD (Annex I.C). This reflects the very high share of renewables in the energy mix.

Figure 1.2. **Greenhouse gas emissions: Trend and sectoral breakdown in 2000-11**



a) Excluding emissions/removals from land use, land-use change and forestry.
b) Includes solvents.
c) Includes emissions from energy use in the following sectors: manufacturing and construction; agriculture, forestry and fisheries; and residential, commercial and institutional.
Source: OECD (2013), *OECD Economic Outlook No. 93* (database); UNFCCC (2013), *Greenhouse Gas Inventory Data* (database).

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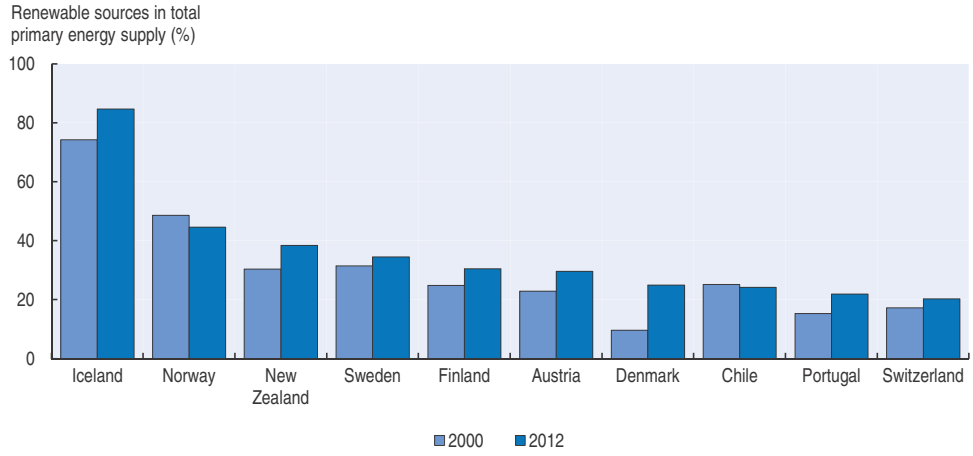
Energy use and intensity

- While the economy grew by 30% between 2000 and 2012, total primary energy supply (TPES) almost doubled (Figure 1.2). This mainly reflects booming energy demand associated with the installation of heavy industrial plants.
- As a result, energy intensity (TPES per unit of GDP) rose by 50% in the same period. It is now four times the OECD average (Annex I.A).
- Industry, mainly aluminium smelting, is the main energy user. In 2011, it accounted for 45% of all energy use, followed by the residential sector (18%), transport (9%) and fishing (8%). Energy consumption from the residential and transport sectors declined in the second half of the 2000s with the recession (Chapter 4).

Energy mix

- Iceland has a very low-carbon energy mix. Renewable energy sources accounted for 85% of TPES in 2012, far more than in any other OECD country (Figure 1.3). All electricity and 95% of heat are generated from renewables.
- Geothermal power is the primary energy source. It accounted for 67% of TPES in 2012, followed by hydropower (18%). Geothermal power is largely used to produce heat for several purposes, including heating homes, swimming pools and greenhouses; hydropower accounts for 70% of total electricity generation (Chapter 4).

Figure 1.3. **Energy from renewable sources: Top 10 OECD countries in 2000 and 2012**



Source: IEA (2013), *IEA World Energy Statistics and Balances* (database).

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- Over the last decade, net hydroelectric capacity nearly doubled and geothermal capacity more than trebled. The significant growth of the aluminium industry is the main factor underlying this increase of power generation capacity (Chapter 4).
- Iceland is dependent on imported fossil fuels (oil and coal), which accounted for 15% of TPES in 2012. Fossil fuels are used primarily in transport and fishing, and to a minor extent to produce electricity and heat in remote locations (Chapter 4).

2.2. Resource efficiency

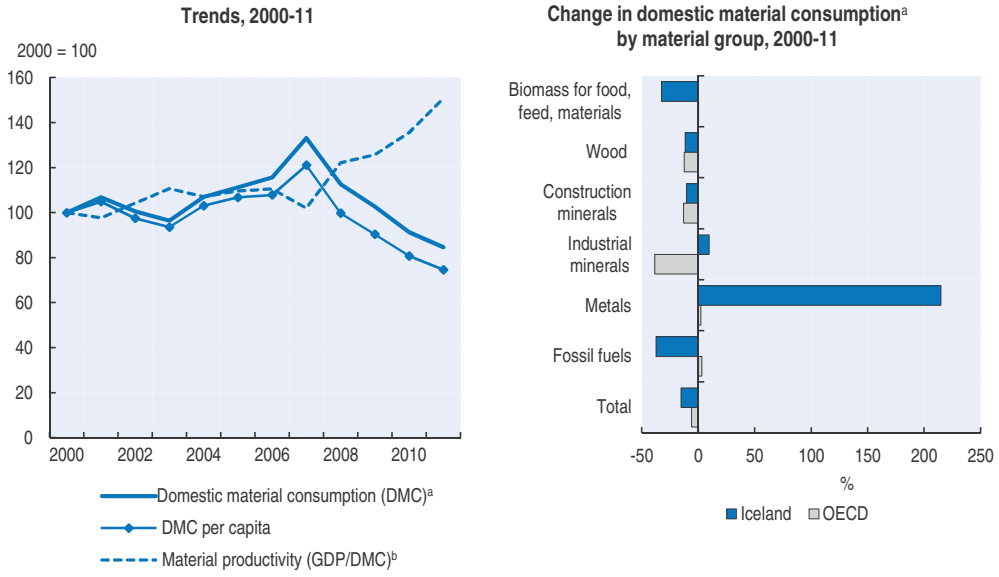
Material productivity

- Iceland has no indigenous production of oil, natural gas or coal and thus is 100% dependent on fossil fuel imports for domestic consumption; it is also highly dependent on imports of machinery and other equipment, foodstuffs, and textiles.
- Between 2000 and 2011, material productivity, defined as economic wealth generated per unit of material used, grew by 51% (Figure 1.4), more than on average in the OECD as a whole. Iceland's material productivity is in line with the OECD Europe average (Annex I.C).
- Iceland showed significant decoupling of domestic material consumption (DMC[1]) from GDP over 2000-11: the latter grew by about 28% while DMC declined by 15%. Consumption of metals grew by 215%, accounting for the largest share of total DMC. Fossil fuel consumption decreased by 37%.

Waste generation and recovery

- Iceland generated 524 000 tonnes of primary waste in 2011. The industrial metal production sector was responsible for the largest share (22%) of total waste, followed by fisheries (21%). Hazardous waste represented only 2%.
- Generation of municipal waste decreased by nearly 17% over 2000-12. Waste volumes fell dramatically (by 44%) between 2007 and 2010 due to the economic crisis and its impact on household income and consumption. Waste generation has started to pick up again with the economic recovery (Figure 1.5).

Figure 1.4. **Domestic material consumption and material productivity**



a) Domestic material consumption is the sum of domestic (raw material) extraction used by an economy and its physical trade balance.
b) Material productivity designates the amount of GDP generated per unit of materials used (ratio of GDP to DMC). A rise in material productivity is equivalent to a decline in material intensity (i.e. DMC/GDP). GDP is expressed at 2005 prices and purchasing power parities.
Source: OECD (2014), *Environment Statistics* (database).

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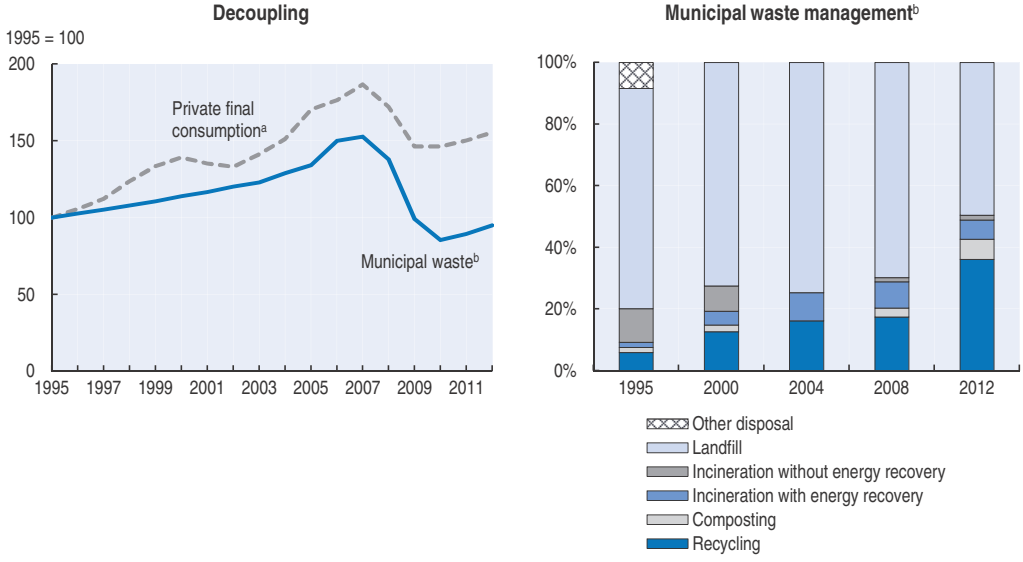
Figure 1.5. **Generation and management of municipal waste in 1995-2012**



a) Private final consumption expenditure at constant prices.
b) Waste collected by or for municipalities, including household, bulky and commercial waste, and similar waste handled at the same facilities.
Source: OECD (2014), *Environment Statistics* (database); OECD (2013), *OECD Economic Outlook No. 93* (database).

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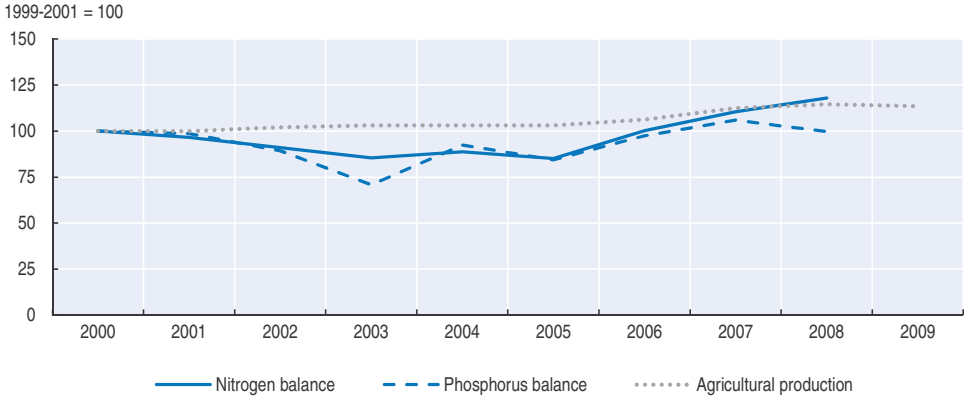
- Municipal waste generated per capita decreased by about 27% over 2000-12, reaching 340 kg, compared with an OECD average of 530 kg (Annex I.C).
- Municipal waste disposed of in landfills decreased by 45% over 2000-12; nevertheless, landfills are still the main treatment method, accounting for half of total municipal waste treatment in 2012 (Figure 1.5). Recycling, along with composting and incineration with energy recovery, to a lesser extent, accounts for the remaining share.
- The implementation of EU waste-related legislation helped divert waste from landfills and increase recycling. Iceland has implemented EU recycling policy for various types of waste, including packaging, end-of-life vehicles, and electrical and electronic equipment (Chapter 3).

Nutrient balance and agricultural inputs

- The nutrient balance has remained roughly coupled to agricultural production (Figure 1.6). The gross nitrogen balance increased by an average of 0.8% per year between 1998-2000 and 2007-09. This was among the five highest nitrogen balance increases in the OECD. The phosphorus surplus declined by an average of some 0.5% a year in the same period, compared to an average decline of 5.4% for the OECD as a whole (OECD, 2013c).
- Nevertheless, use of nitrogen and phosphorus fertilisers dropped by 5% and 30%, respectively, in the 2000s. The amount of nitrogen fertilisers used per square kilometre of agricultural land is the second lowest in the OECD (Annex I.C).
- The quantity of pesticides sold rose by 4.6% per year between 1998-2000 and 2007-09, compared to an overall OECD decrease of 1%. The rise was mainly due to increased crop production (OECD, 2013c). Yet pesticide use per square kilometre of agricultural land is the lowest in the OECD (Annex I.C).
- The agricultural land area under certified organic management did not increase between 2002 and 2010; the share is one of the lowest in the OECD (OECD, 2013c).

Figure 1.6. **Gross nutrient balances and agricultural production in 2000-09**



Source: FAO (2014), *FAOSTAT* (database); OECD (2014), *OECD Agriculture Statistics* (database); OECD calculations.

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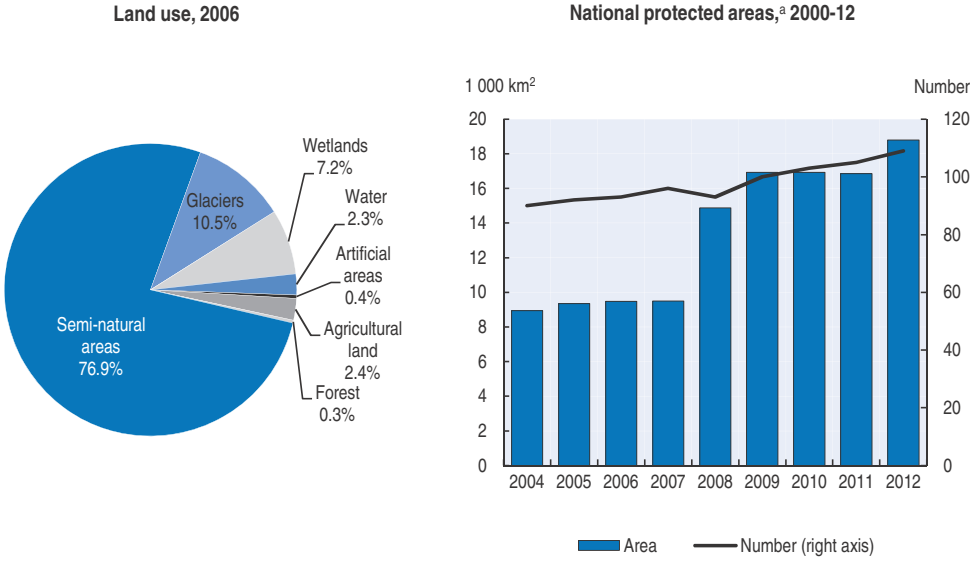
3. Managing the natural asset base

3.1. *Biodiversity and ecosystems*

Land use

- About 75% of Iceland is more than 200 meters above sea level, with most of the land being high plateaux and mountains. Glaciers, rivers and lakes cover 13% of the total area, resulting in abundant freshwater supplies. Artificial areas cover only 0.4% of the total territory, significantly less than in other European countries; only 2.4% of the land is arable (Figure 1.7). About 90% of the population lives in coastal areas, with fewer than 1 000 people living in the highlands.

Figure 1.7. **Land use and natural protected areas**



a) Nationally designated protected areas (including national parks, natural monuments, nature reserves and habitat protection, and country parks).
Source: Statistics Iceland (2014), "Geography and environment", *Statistics portal*; Statistics Iceland (2013), *Statistical Yearbook of Iceland 2013*.

- Forests cover only 0.3% of the total area (Figure 1.7). About 96% of tree cover has been lost since the first settlers ventured to Iceland over 1 100 years ago. Despite a significant afforestation effort in the last two decades, Iceland has one of the lowest levels of growing stock in forest and other wooded land in the OECD (Annex I.C).[2]
- About half the country suffers from acute soil erosion (OECD, 2001). This has resulted from the woodland clearing and sheep grazing.
- The number of participants in soil conservation activities increased over 2000-08. Representing one-third of livestock farmers, they have helped reclaim about 6 000 hectares of land per year (SCS, 2013).
- Iceland has the second lowest livestock density among OECD countries (Annex I.C). Sheep is the dominant livestock form. The number of horses increased by 5% between 2000 and 2012 as tourist interest in riding Icelandic horses has grown (Statistics Iceland, 2014a).

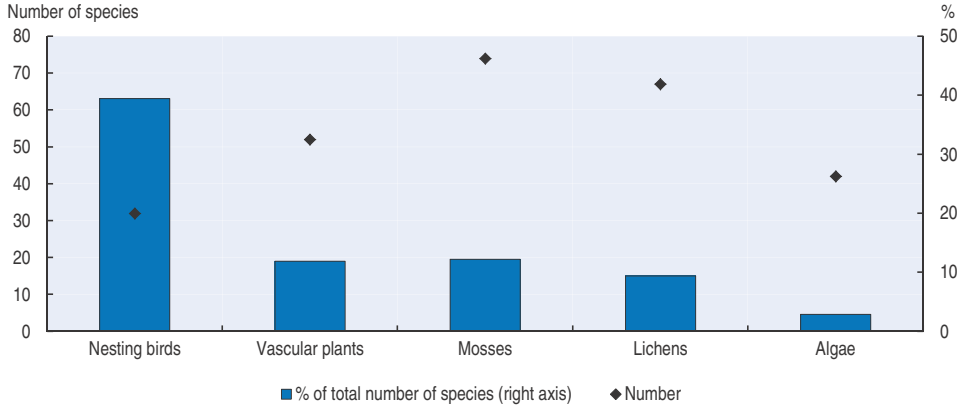
Protected areas

- About 20% of the total area is under some form of nature protection. This is among the highest shares in the OECD (Annex I.C) and exceeds the Aichi biodiversity target of establishing a system of protected areas and other area-based conservation measures covering at least 17% of terrestrial areas and inland waters by 2020.
- The total area under protection doubled between 2007 and 2012, mainly due to the establishment of Vatnajökull National Park in 2008. This park extends over 14% of the total land area; most of which is covered by the Vatnajökull glacier (Statistics Iceland, 2014b).
- Protected areas include a variety of legal designations. Three national parks make up over half the total protected area; 24 sites are designated for geological purposes and partial value for biological diversity; and the remaining areas are protected due to their biodiversity. The Nature Conservation Strategy aimed to designate 25% of the country's area as protected by 2013.

Ecosystems and species

- Vegetation covers 60% of the total area. It is mainly dry-land, low-growing vegetation and includes sparse birch woodlands. Vegetation is mostly subarctic and characterised by abundant grasses, sedges and related species. In the highlands and lava fields vegetation is mainly mosses and lichens.
- According to the 2007 Red List of Iceland, more than 290 species are threatened, including vascular plants, mosses, lichens, marine algae and birds. Nearly 40% of the bird species nesting in Iceland (mainly seabirds) are threatened, as are 12% of the country's moss species (Figure 1.8). However, Red List data have not been regularly updated and are incomplete.

Figure 1.8. **Species on the 2007 Red List of Iceland**



Source: MENR (2009), *Umhverfi og auðlindir. Stefnum við í átt til sjálfbærrar þróunar?* [Environment and Natural Resources. Are We Moving on the Right Path?].

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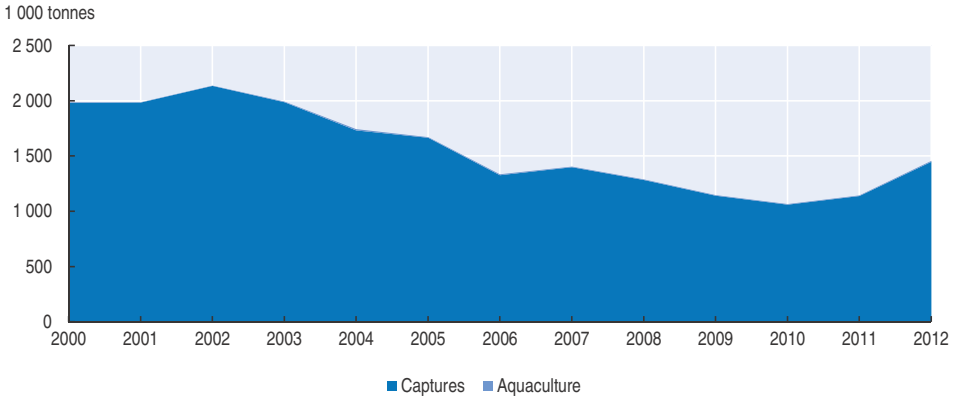
- Two seal species are found on Icelandic shores (the harbour seal and the grey seal), but their populations have declined over the past decade. Several whale species are found in Iceland's seas, including seven toothed whales and five baleen whales.
- Several activities exert pressure on Iceland's biodiversity, including hydropower development, geothermal exploitation, urban sprawl, tourism development, overgrazing and invasive species (Chapters 4 and 5).

- With a total catch of about 1.5 million tonnes in 2012, Iceland is a major fishing country. Total fish production decreased between 2000 and 2012 by some 27%, mainly due to fluctuations in the catch of pelagic species (Figure 1.9). Scientifically based total allowable catches and an individual transferable quota system form the foundations of Iceland's successful fisheries management (OECD, 2011b) (Chapter 3).

Figure 1.9. **Fish production in 2000-12**



Source: FAO (2014), *FAO Global Capture and Aquaculture Production* (databases).

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3.2. Water resources

- With abundant water and a small population, total abstraction is less than 1% of total available freshwater resources, among the lowest intensities of water use in the OECD. However, gross freshwater abstraction per capita is relatively high, exceeding the OECD Europe average (although Iceland's data are relatively old and not fully comparable) (Annex I.C).
- The rivers and lakes have suffered no significant pollution. Regular sampling of 20 rivers between 2003 and 2007 showed that the mean concentrations of nutrients was low (below 0.3 mg per litre for nitrogen and below 0.04 mg/litre for phosphorus).
- Iceland expects to have fully transposed the EU Water Framework Directive (WFD) and implemented the river basin management plan by 2015 (European Commission, 2011). Work is under way to identify heavily modified and artificial water bodies and assess their ecological status, in accordance with the WFD (EAI, 2014).
- The quality of freshwater and groundwater is extremely good. No rivers or coastal water bodies are considered at risk of not reaching good chemical status. Only one lake (Tjörnin) and one groundwater body are considered at risk.

4. Improving the environmental quality of life

4.1. Environment, well-being and health

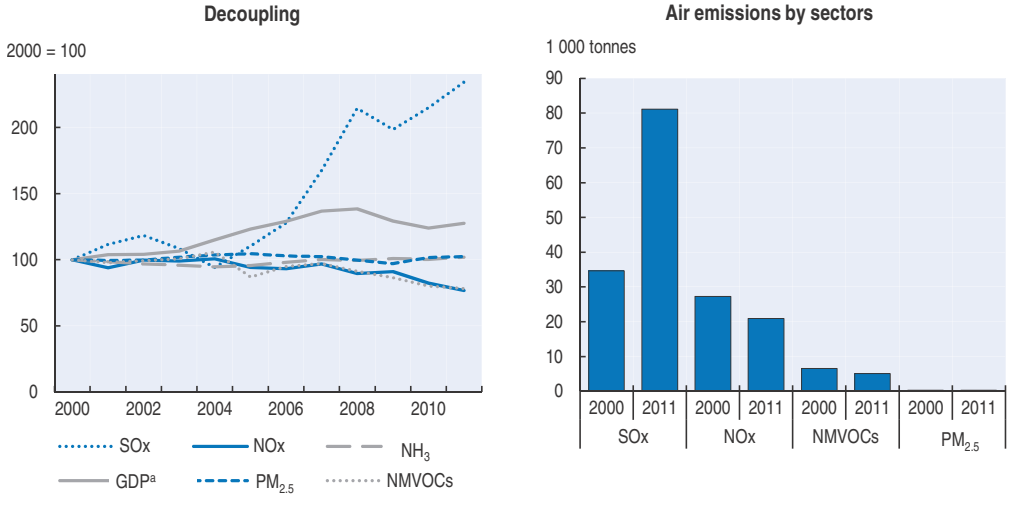
- More than half the Icelandic people are satisfied with the administration's efforts to preserve the environment, a level that has not changed significantly since 2008 (Gallup, 2014).
- Some 97% of residents say they are satisfied with water quality. This figure is higher than the OECD average of 84% and suggests Iceland has been successful in providing good quality water to its inhabitants (OECD, 2014).

- Icelanders are also generally satisfied with air quality. The level of satisfaction reached almost 90% in 2012 (Gallup, 2014).
- Icelanders are very active in terms of political participation; over a given 12-month period, 61% of the people take part at least in one civic activity such as contacting a politician, attending a demonstration or writing a petition. This level is significantly higher than the European average of 25% (Eurofound, 2013).
- The latest assessment by the World Health Organization (WHO) indicates that the burden of disease attributable to environmental factors is 14%, unchanged from the previous assessment. This is among the lowest levels in Europe (WHO, 2007; 2009).
- The share of the burden of disease associated with water, sanitation and hygiene corresponds to the world's lowest rate. WHO estimates that fewer than 100 deaths per year can be attributed to outdoor air pollution (WHO, 2009).

4.2. Air emissions and air quality

- Emissions of all major air pollutants except SO_x have declined or remained stable since 2000, showing a relative decoupling from economic performance. Emissions of nitrogen oxides (NO_x) and non-methane volatile organic compounds (NMVOCs) have decreased by more than 20% (Figure 1.10).[3]
- Mobile sources (including road vehicles and fishing vessels) are the main sources of NO_x and NMVOCs. The reduction of emissions from these sources is mainly due to the diffusion of vehicles with catalytic converters, improved fuel quality, and improved efficiency of vehicles and vessels.
- Between 2000 and 2011, emissions of small particulates ($PM_{2.5}$) increased slightly, by 0.8% (Figure 1.10), while emissions of PM_{10} grew by 33%. The use of studded tyres, which wear away the asphalt, is the main source. Soil erosion, traffic on gravel roads, volcanic ash and weather conditions contribute to increasing PM emissions and concentrations.

Figure 1.10. **Air pollutant emissions in 2000-11**



a) At 2005 prices and purchasing power parities.
Source: OECD (2014), *OECD Environment Statistics* (database); OECD (2013), *OECD Economic Outlook No. 93* (database).

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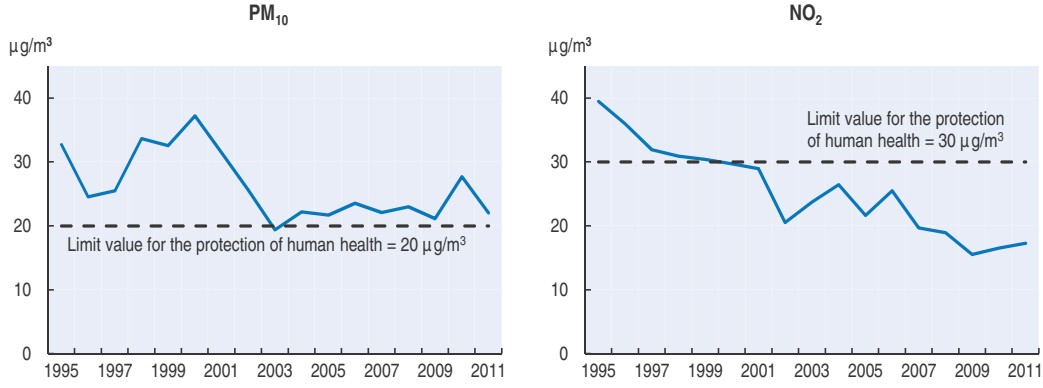
- Ammonia emissions[4] slightly increased, by 2%, due to manure deposition and management, the grazing of animals on pastures and fertiliser application. The main factor underlying the increase is the trend in livestock population: sheep and cattle account for more than 80% of total ammonia emissions, while fertiliser application plays a minor role (EAI, 2013a).
- Emissions of SO_x more than doubled between 2000 and 2011 due to increased geothermal exploitation, the largest source of sulphur emissions (Figure 1.10). Iceland's emissions of SO_x per unit of GDP are the highest in the OECD (Annex I.C).
- H_2S emissions from geothermal power plants have doubled since 2000. Concentrations of H_2S in the Reykjavík area have often exceeded the WHO standard. In weak concentrations, only the characteristic odour is detected, but in higher concentrations, H_2S can be corrosive and affect respiratory organs. The impact on human health and the environment of continuous exposure to low concentrations of H_2S over the medium and long term is still unknown (Chapter 4).
- In the Reykjavík area, concentrations of the main air pollutants (including ozone and NO_2) are generally below the EU air quality standards. The annual mean concentration of PM_{10} has declined since 2000. However, it has continuously exceeded the WHO Air Quality Guidelines (20 µg/m^3) (Figure 1.11).

Figure 1.11. **Air quality in the Reykjavík area in 1995-2011**



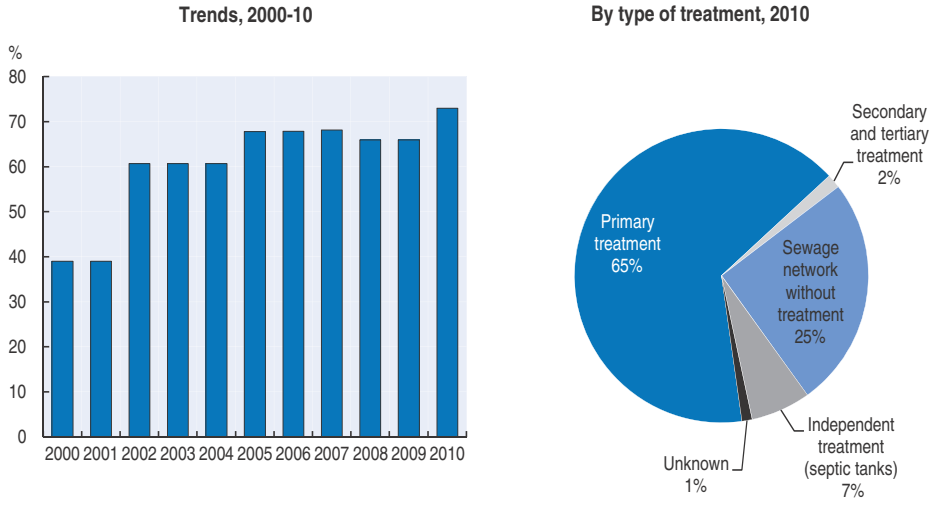
Source: MENR (2009), *Umhverfi og auðlindir. Stefnum við í átt til sjálfbærrar þróunar?* [Environment and Natural Resources. Are We Moving on the Right Path?]; country submission.

StatLink http://dx.doi.org/10.1787/888933087420

4.3. *Water supply and sanitation*

- Iceland's local water supplies come almost entirely from groundwater reservoirs and do not need any treatment before consumption. By 2008, 31 water utilities, serving 81% of the population, had implemented the water safety plan methodology (launched in 1995). This resulted in increased compliance with Icelandic drinking water regulations.
- The share of the population connected to wastewater treatment systems has increased by 87% since 2000. It was 73% in 2011, including individual treatment facilities (EAI, 2013c), among the lowest levels in the OECD (Figure 1.12; Annex I.C). Only about 2% of the population is connected to treatment plants that provide secondary or tertiary treatment (Figure 1.12). This low level is partly a consequence of the very low population density.

Figure 1.12. **Population connected to wastewater treatment facilities**



Source: EAI (2013), Report to the EFTA Surveillance Authority regarding the implementation of Directive 91/271/EU on the treatment of wastewater from agglomerations; OECD calculations.

StatLink http://dx.doi.org/10.1787/888933087439

Notes

1. DMC is the sum of domestic raw material extraction used by the economy and its physical trade balance (imports minus exports of raw materials and manufactured products).
2. The growing stock is the living component of the tree standing volume in an area of forest or wooded land.
3. Iceland is a party to the Convention on Long Range Transboundary Air Pollution but has only ratified the Protocol on Persistent Organic Pollutants. It is in the process of transposing the EU National Emission Ceilings Directive.
4. Ammonia emissions have only been estimated for the agricultural sector.

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