National Environmental Policies For the EPA State of Environment Report

DECEMBER 2020

Clean Technology Centre,
at Cork Institute of Technology

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Executive Summary

In the recently published EPA report, *Ireland's Environment 2020 - An Assessment*[1], the need for an overarching environmental policy for the country was identified, as follows:

> *A key message from our assessment is that Ireland needs an overall integrated national environmental policy position, or it risks existing environmental protection measures failing or competing with each other. Such a policy position could set out an ambition for protecting Ireland's environment in the short, medium and long-term with the aim of having a clean, healthy environment, that is valued and protected by all. It should be a national vision to which all government departments, agencies, businesses, communities and individuals can sign up to play their part in protecting our environment.*

This report examines national environmental policies across a number of countries, as well as a review of other related policies at an EU and international level.

Policies from the following countries and international levels were reviewed:

- Sweden
- Scotland
- The UK
- Finland
- Belgium
- Slovenia
- Malta
- Denmark
- The EU
- The United Nations

In summary, the approaches taken in the overarching environmental policies from countries that have been reviewed include the following:

- All have set out a long-term vision, some in very simple terms, others more specific and detailed.
- Some countries have focused on the environment only, while others include all three sustainable development pillars. Denmark has focused only on energy. Slovenia has a very broad scope for its vision across society.
- Some countries are very advanced in their work (Sweden, Scotland), while others are at an earlier stage (Slovenia, Malta).
- Some countries have specific quantifiable targets, while others do not.
- Some countries have performance being measured annually, while others do not.

[1] Brendan Wall, Annette Cahalane and Jonathan Derham (eds) *Ireland's Environment – An Integrated Assessment 2020*, EPA, 2020, Wexford.
http://www.epa.ie/irelandsenvironment/stateoftheenvironmentreport/

- Some countries include co-production and the involvement of stakeholder groups and social groups in the development of the vision and in its assessment.
- While focusing on in-country goals, many of the countries also aim to not increase adverse environmental effects elsewhere on the globe, acknowledging that the effects of every country's actions reach far beyond its national borders.
- Reference is also made by many of the countries in relation to international and regional cooperation, solving shared global problems, and global responsibility.

Approaches that have been well developed and are well underway by countries with a long and successful history of environmental protection are of special interest and may be of specific value to Ireland in terms of replicability, such as those in Sweden, Scotland, Belgium and Finland. The approach of the United Kingdom is also notable, in the way that the vision is specifically focused on environmental and well-being issues and there is no confusion as to how it is interlinked with the SDGs.

Our recommendations for consideration for Ireland in drawing up a national environmental policy are as follows:

- Set out a concise, overall vision for Ireland's environment, to be aimed for in the long-term, such as by 2050.
- It is recommended that the focus of the vision should be environmental, rather than including the social and economic pillars of sustainable development. While there will be some overlap and connection, this vision should be considered at a remove and independent from the UN Sustainable Development Goals (SDGs). An environmental policy gives the opportunity to be more specific in relation to a nations needs and hopes beyond the generalised aims of the SDGs.
- Set up an overarching, representative steering group or expert panel to implement the vision. This could be led, for example, by the Department of the Taoiseach. Belgium, for example, set up an interdepartmental, ad hoc working group, made up of experts from different federal public administrations.
- Fully involve stakeholder groups and social groups in the development of the vision and in its assessment. Consider the use of a citizens' assembly (in the way that the Citizens' Assembly 2016 - 2018 considered 'how the state can make Ireland a leader in tackling climate change'.) There is a societal role in articulating this policy, as we are all stakeholders in it.
- Based on a set of clear principles, lay out the objectives to be addressed. Some objectives might be given priority. Responsibility for achieving the objectives will need to be assigned, and this will likely be across various government departments and agencies and local/regional authorities.
- Set out a series of long-term, medium-term, and short-term actions or policy instruments under each of these objectives. Incorporate existing actions and instruments (such as, for example, the Climate Action Plan, the Biodiversity Action Plan, Harnessing Our Ocean Wealth - The Integrated Marine Plan for Ireland, and the Waste Action Plan for a Circular Economy). Identify and devise additional actions and instruments, where needed. Highlight responsibility for their implementation.

- Produce a series of indicators and quantifiable targets associated with these actions/ instruments.
- Set out to measure, either annually, or at stated periodic intervals, indicators which will illustrate Ireland's performance against these targets.
- Allow a mechanism for changes to be made to the vision, objectives, principles, policy instruments and actions, if necessary, over time, to reflect upon policy development or environmental changes.

The objectives/goals that have been included in the policies reviewed are set in the following areas:

- A carbon-neutral society, reduced climate impact, reduced emissions of greenhouse gases, net zero emissions of greenhouse gases, resilience through climate adaptation
- A rich diversity of plant and animal life, sustainable populations, a restored and resilient natural environment, healthy sustainable ecosystems, reintroduced native species, enhanced biosecurity
- Clean and healthy air, reduced air pollution, natural acidification only
- A balanced marine environment, clean and healthy seas, biologically diverse seas and oceans, good environmental status in seas, increasing and better managing protected marine areas
- Flourishing lakes, rivers, streams, and coastal areas, thriving wetlands
- Clean, healthy, and plentiful water; protected groundwater
- Clean and healthy soils, sustainably managed
- Sustainable forests, increased woodland
- A varied agricultural landscape
- Restored and protected peatlands
- A well-preserved mountain landscape, in terms of biological diversity, recreational value and natural and cultural assets
- A protective ozone layer
- Zero eutrophication
- A non-toxic environment, reduced dangerous substances
- A safe radiation environment
- Using and managing land sustainably
- A resilient society that adapts its economy to economic, social and ecological challenges; a society that preserves its environment; sustainable local communities that support economic, social and cultural well-being, as well as the well-being of the environment; lifestyles that respect the carrying capacity of nature

- A good built environment, sustainable urban development, protected cultural environments, more green infrastructure, high quality & accessible natural spaces
- Reduced global impact of consumption of goods and services, support lifestyles based on non-material consumption, a carbon-neutral and resource-wise country, maximising resource efficiency and minimising environmental impacts at end of life, reduced emissions associated with imported products, a more circular economy, reduced water loss, greater water efficiency and less personal use, reduced waste, zero avoidable waste
- A fairer, healthier, more inclusive society; an inclusive and united society; equal prospects for well-being; a society supported by public authorities assuming their social responsibility; a participatory society and strengthened democracy; a non-discriminatory, equal and competent society; a society that works
- Human health – nature and the environment impact positively on health, wellbeing and protect us from adverse environmental effects
- Foster people's respect for biodiversity and raise their awareness of its importance; enhanced beauty, heritage and engagement with the natural environment
- An economy that thrives while securing wellbeing for its people and the planet, opportunities for all to prosper, sustainable work, quality jobs and fair work for everyone, socially responsible business, conserving and growing natural assets and resources, using resources from nature more sustainably and efficiently
- Help developing nations protect and improve the environment, protect and improve international biodiversity

Introduction

A detailed assessment of the Irish environment published in 2020 showed that 'the overall quality of Ireland's environment is not what it should be, and the outlook is not optimistic unless we accelerate the implementation of solutions across all sectors and society'.[2]

In particular, the assessment took the view that Ireland needed an 'overall integrated national environmental policy position' to prevent current measures failing or impeding each other. Such a vision would take a three pillared approach, acting on the Irish environment in the short, medium and long-terms. It would articulate a single concept whereby the nation would come together, united with a shared focus so that all government departments, agencies, businesses, communities and individuals can act collectively to protect and enhance our most precious resource – our environment.

With that in mind, the Environmental Protection Agency (EPA) has commissioned the Clean Technology Centre (CTC) at Cork Institute of Technology (CIT) to take on a study investigating such vision and approaches undertaken elsewhere.

In this report, the authors briefly outline the long-term environmental visions developed and acted upon by Sweden, Scotland, the UK, Finland, Belgium, Slovenia, Malta, Denmark, the EU, and the United Nations. All these countries/entities have written and published a single long-term intergenerational vision to which they strive. Sweden, for example, has set a date of 2045 by which it aims to (in its simplest expression) 'hand over to the next generation a society in which the major environmental problems in Sweden have been solved, without increasing environmental and health problems outside Sweden's borders.'[3] The vision is then expanded to include more detailed positions around ecosystems, biodiversity, human health, material cycles, natural resources, energy and consumption patterns.

Many of the visions outlined in this report are based on a set of principles or conceptual foundations upon which actions should be taken. For example, the five Finnish guiding principles are: global responsibility, cross-generational thinking, the limited carrying capacity of nature, cooperation and the creative use of knowledge and expertise.

Some countries focus on more specific environmental aspects and others take a broader sustainable development view encompassing economy, society and environment. The Scottish vision is based upon the United Nations Sustainable Development Goals (SDGs), including the broad areas of: society, global issues, resources, climate action, nature, and economy. The Danish approach outlined herein focuses only on energy.

All of the approaches in the report employ a three tiered methodology whereby a long-term goal is broadened into a set of medium-term tasks, which are supplemented by a series of many focused, short-term, immediate actions. These actions aim to achieve specific and

[2] Brendan Wall, Annette Cahalane and Jonathan Derham (eds) *Ireland's Environment – An Integrated Assessment 2020*, EPA, 2020, Wexford.
http://www.epa.ie/irelandsenvironment/stateoftheenvironmentreport/

[3] Swedish Environmental Protection Agency, *Sweden's Environmental Objectives, An Introduction*. SEPA, 2018, Stockholm.

measurable targets which are continually monitored and reported upon. Usually a pan-government approach is taken and the policy is often led by the Prime Minister's office.

The visions and policies, plans and actions outlined in this report offer Ireland potential for replicability, especially those that have been underway for some time and in those regions which have a track record and long-term commitment to environmental protection.

1. Sweden

Introduction

Sweden's national policy on environmental protection is based around a series of objectives, which were first developed in 2018: 'goals that are crucial to welfare and are intended to guide the sum total of Swedish efforts to safeguard the environment.'[4] [5]

Sweden has characterised its objectives into three types:

- The generational goal – this defines the overarching long-term direction of the environmental actions being undertaken.
- 16 environmental quality objectives – these facilitate and make the generational goal more tangible.
- A series of milestone targets the government sets out for priority areas. Progress can then be measured against these targets regularly.

Generational Goal

Sweden's environmental policy aims to 'hand over to the next generation a society in which the major environmental problems in Sweden have been solved, without increasing environmental and health problems outside Sweden's borders.' This goal is intended to bring about change at all levels of society.

The goal sets a time parameter within which the country must act – one generation – and also specifies the level of ambition of the policy.

The aim of the policy is to ensure a vision that:

- Ecosystems have recovered, or are on the way to recovery, and their long-term capacity to generate ecosystem services is assured.
- Biodiversity and the natural and cultural environments are conserved, promoted and used sustainably.
- Human health is subject to a minimum of adverse impacts from factors in the environment; at the same time the positive impact of the environment on human health is also promoted.
- Materials cycles are resource-efficient and as far as possible free from dangerous substances.
- Natural resources are managed sustainably.

[4] http://www.swedishepa.se/Environmental-objectives-and-cooperation/Swedens-environmental-objectives/#

[5] Swedish Environmental Protection Agency, *Sweden's Environmental Objectives, An Introduction*. SEPA, 2018, Stockholm.

- The share of renewable energy increases and use of energy is efficient, with minimal impact on the environment.

- Patterns of consumption of goods and services cause the least possible problems for the environment and human health.[6]

Objectives for a Better Environment

There are 16 environmental objectives for Sweden and these are to be achieved without increasing the environmental and health problems in other countries.

There are a number of 'specifications' for each objective, outlining the state of the environment to be achieved. The current status of each objective is also given a status (as reported by the Swedish EPA in May 2020) as to whether or not it will be achieved by the policy instruments already decided or planned. If the policy instruments are not suitable, they can then be changed.

The 16 objectives are:

1. **Reduced Climate Impact** – Sweden is to have zero net emissions of greenhouse gases by 2045, if not sooner. Detailed specifications for climate impact are also in place.

   *Status[7]: Objective **will not be achieved** by the policy instruments already decided or planned.*

2. **Clean Air** – air quality must be sufficient not to represent a risk to human health or to animals, plants or cultural assets. Detailed specifications for clean air are also in place.

   *Status: Objective **will not be achieved** by 2020 by the policy instruments already decided or planned.*

3. **Natural Acidification Only** – the acidifying effects of deposition and land use must not exceed the limits that can be tolerated by soil and water. Deposition of acidifying substances must not increase the rate of corrosion of technical materials located in the ground, water main systems, archaeological objects and rock carvings.

   *Status: Objective **will not be achieved** by 2020 by the policy instruments already decided or planned.*

4. **A Non-Toxic Environment** – the occurrence of man-made or extracted substances in the environment must not represent a threat to human health or biological diversity. Concentrations of non-naturally occurring substances will be close to zero and their impacts on human health and on ecosystems will be negligible. Concentrations of

[6] http://www.swedishepa.se/Environmental-objectives-and-cooperation/Swedens-environmental-objectives/The-generational-goal/

[7] All statuses here, as of May 2020, as reported by the Swedish EPA.

naturally occurring substances will be close to background levels. Detailed specifications for toxicity are also in place.

*Status: Objective **will not be achieved** by 2020 by the policy instruments already decided or planned.*

5. **A Protective Ozone Layer** – the ozone layer must be replenished so as to provide long-term protection against harmful UV radiation. Detailed specifications regarding the ozone layer are also in place.

   *Status: Objective **will be achieved** by the policy instruments already decided or planned.*

6. **A Safe Radiation Environment** – human health and biological diversity must be protected against the harmful effects of radiation. Detailed specifications regarding radiation are also in place.

   *Status: Objective **is close to be achieved** by the policy instruments already decided or planned.*

7. **Zero Eutrophication** – nutrient levels in soil and water must not be such that they adversely affect human health, the conditions for biological diversity or the possibility of varied use of land and water. Detailed specifications regarding the eutrophication are also in place.

   *Status: Objective **will not be achieved** by the policy instruments already decided or planned.*

8. **Flourishing Lakes and Streams** – lakes and watercourses must be ecologically sustainable and their variety of habitats must be preserved. Natural productive capacity, biological diversity, cultural heritage assets and the ecological and water-conserving function of the landscape must be preserved, while at the same time safeguarding recreational assets. Detailed specifications regarding lakes and streams are also in place.

   *Status: Objective **will not be achieved** by 2020 by the policy instruments already decided or planned.*

9. **Good Quality Groundwater** – groundwater must provide a safe and sustainable supply of drinking water and contribute to viable habitats for flora and fauna in lakes and watercourses. Detailed specifications regarding groundwater are also in place.

   *Status: Objective **will not be achieved** by 2020 by the policy instruments already decided or planned.*

10. **A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos** – the North Sea and Baltic Sea must have a sustainable productive capacity, and biological diversity must be preserved. Coasts and archipelagos must be characterised by a high degree of biological diversity and a wealth of recreational, natural and cultural assets. Industry, recreation and other utilisation of the seas, coasts and archipelagos must be compatible with the promotion of sustainable development. Particularly valuable areas must be protected against encroachment and other disturbance. Detailed specifications regarding the marine environment and coast are also in place.

*Status: Objective **will not be achieved** by 2020 by the policy instruments already decided or planned.*

11. **Thriving Wetlands** – the ecological and water-conserving function of wetlands in the landscape must be maintained and valuable wetlands preserved for the future. Detailed specifications regarding wetlands are also in place.

    *Status: Objective **will not be achieved** by 2020 by the policy instruments already decided or planned.*

12. **Sustainable Forests** – the value of forests and forest land for biological production must be protected, while at the same time safeguarding biological diversity, cultural heritage and recreational assets. Detailed specifications regarding forests are also in place.

    *Status: Objective **will not be achieved** by 2020 by the policy instruments already decided or planned.*

13. **A Varied Agricultural Landscape** – the value of the farmed landscape and agricultural land for biological production and food production must be protected, while at the same time preserving and strengthening biological diversity and cultural heritage assets. Detailed specifications regarding agriculture are also in place.

    *Status: Objective **will not be achieved** by 2020 by the policy instruments already decided or planned.*

14. **A Magnificent Mountain Landscape** – the pristine character of the mountain environment must be largely preserved, in terms of biological diversity, recreational value and natural and cultural assets. Activities in mountain areas must respect these values and assets, with a view to promoting sustainable development. Particularly valuable areas must be protected from encroachment and other disturbance. Detailed specifications regarding mountain landscape and coasts are also in place.

    *Status: Objective **will not be achieved** by 2020 by the policy instruments already decided or planned.*

15. **A Good Built Environment** – cities, towns and other built-up areas must provide a good, healthy living environment and contribute to a good regional and global environment. Natural and cultural assets must be protected and developed. Buildings and amenities must be located and designed in accordance with sound environmental principles and in such a way as to promote sustainable management of land, water and other resources. Detailed specifications regarding the built environment are also in place.

    *Status: Objective **will not be achieved** by 2020 by the policy instruments already decided or planned.*

16. **A Rich Diversity of Plant and Animal Life** – biological diversity must be preserved and used sustainably for the benefit of present and future generations. Species habitats and ecosystems and their functions and processes must be safeguarded. Species must be able to survive in long-term viable populations with sufficient genetic variation. Finally, people must have access to a good natural and cultural

environment, rich in biological diversity, as a basis for health, quality of life and well-being. Detailed specifications regarding diversity are also in place.

*Status: Objective **will not be achieved** by 2020 by the policy instruments already decided or planned.*

As can be seen, of the 16 objectives, only one (ozone layer) is being achieved by the policy instruments in place or planned. And only one (radiation levels) is close to being achieved. All other will not be achieved by the target date (usually 2020), which means that further policy instruments are required.

Implementation

The Swedish Government gathers information on the progress being made towards the objectives and how close they are to being achieved. This information forms the basis for Sweden's policy and priorities, whether or not further strategies and instruments are required to carry the work forward.

Twenty government agencies have specific responsibilities for achieving the environmental objectives. Within their respective operations, they contribute to achieving the generational goal and the environmental quality objectives, in cooperation with organisations and businesses.

Eight of the government agencies have a separate responsibility for following up on particular environmental objective or objectives and reporting on the possibilities of achieving these. The Swedish Environmental Protection Agency is tasked with guiding these government agencies and coordinating their monitoring of the environmental objectives. The Environmental Objectives Council is a platform for the heads of government agencies that are strategically important to achieving the objectives.

An All-Party Committee on Environmental Objectives submits proposals to the Government annually on how Sweden's environmental quality objectives and generational goal can be achieved through cooperation with actors in society. The aim of the All-Party Committee is to secure a broad political consensus on issues requiring long-term decisions in the most difficult areas of environmental policy, and on issues marked by conflict. The committee consists of MPs from all of the Riksdag political parties, supported by experts from county administrative boards, municipalities, the business community and stakeholder organisations.

Local and regional actions also have a major role in achieving the environmental objectives, such as the design and siting of housing, roads and other infrastructure, or the conservation and use of green spaces and cultural environments. County administrative boards have overall responsibility and a coordinating role for regional and action programmes. The county administrative boards' responsibilities also include following up the environmental objectives in their own counties. The environmental objectives are an important tool in the municipalities' efforts for sustainable development. For example, they are used in outline planning, inspection plans, waste planning, energy programmes and climate strategies.

Environmental efforts by the business community relating to production, transport and technological development are crucial to the prospects for achieving the environmental quality objectives. Environmental and other organisations also contribute by shaping public opinion and fostering an understanding of the need for change.

Many of Sweden's environmental challenges can only be solved by cooperation with other countries. Action within the EU or international action is critical for achieving success in about half of the objectives. At the same time the indirect Swedish impact on the environment of other countries must also be reduced.

Milestone targets

Some of Sweden's milestone targets are intended to identify a desired social change and specify steps towards achieving a generational goal rather than a specific environmental objective.

Milestone targets can also be added to the environmental objectives system on the basis of goals adopted within the European Union or by incorporating international agreements into the system.

The milestone targets are divided into five areas: reduced climate impact, air pollution, biodiversity, dangerous substances, sustainable urban development and waste, as follows:

Reduced climate impact

- **Emissions of greenhouse gases by 2020**
  By **2020**, emissions of greenhouse gases in Sweden, from activities not included in the EU Emissions Trading Scheme, should be reduced by 40% compared with 1990. This means that, by 2020, greenhouse gas emissions from the non-trading sector are to be around 20 million tonnes of carbon dioxide equivalent lower than in 1990. The decrease will be achieved by emission reductions in Sweden and by means of investments in other EU member states or flexible mechanisms such as the Clean Development Mechanism.
- **Emissions of greenhouse gases by 2030**
  Emissions in Sweden outside of the EU ETS should by **2030** be at least 63% lower than emissions in 1990. To achieve the goal, no more than eight percentage points of the emissions reductions may be realised through supplementary measures.
- **Emissions of greenhouse gases by 2040**
  Emissions in Sweden outside of the EU ETS should by **2040** be at least 75% lower than emissions in 1990. To achieve the goal, no more than two percentage points of the emissions reductions may be realised through supplementary measures.
- **Emissions of greenhouse gases by 2045**
  By **2045**, Sweden is to have no net emissions of greenhouse gases into the atmosphere and should thereafter achieve negative emissions. To achieve zero net emissions, supplementary measures may be included. By 2045, emissions from activities in Swedish territory are to be at least 85% lower than emissions in 1990.

- **Emissions of greenhouse gases from domestic transport**
  Emissions from domestic transport, excluding domestic aviation, are to be reduced by at least 70% by **2030** compared with 2010. Domestic aviation is not included in the goal since domestic aviation is included in the EU ETS.

Air pollution

- **Reduction of national emissions of air pollutants**
  Emissions of nitrogen oxides, sulphur dioxide, volatile organic compounds, ammonia and particulate matter (PM2.5) shall no later than in **2025** correspond to indicative emission levels for 2025 set out in Directive (EU) 2016/2284 of the European Parliament and of the Council on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC.

Biodiversity

- **Knowledge about genetic diversity**
  Mapping and monitoring of genetic diversity are to be initiated by **2020**.
- **The protection of land areas, freshwater areas and marine areas**
  At least 20% of Sweden's land and freshwater areas, and 10% of Sweden's marine areas by **2020** will contribute to achieving national and international biodiversity targets. This will take place through protection or other conservation in areas of particular importance to biodiversity or ecosystem services. This conservation will take place with ecologically representative and well-connected systems, which include reserves, area-based protective measures or environmentally sound usage. Between **2012** and **2020**, at least 1,142,000 additional hectares are to be protected as follows:
    - High nature value forests are to be protected from tree-felling. This will take place through an increase in formally protected forest land of approximately 150,000 hectares of high nature value forests in need of formal protection below the montane forest zone.
    - Voluntary set-asides by the forestry industry should have increased by approximately 200,000 hectares to a total of 1,450,000 hectares of forest land in areas that are, or may develop into, high nature value areas.
    - The formal protection of wetlands has increased by 210,000 hectares as a result of boglands and fens of high nature value being protected under the 'National plan for conservation of boglands and fens'.
    - The formal protection of lakes and watercourses has increased by at least 12,000 hectares.
    - The formal protection of marine areas has increased by at least 570,000 hectares.
    - The ecological connections have been strengthened so that protected areas and areas and biotopes conserved in other ways are well connected and integrated in the landscape, including the marine environment.

Dangerous substances

- **Information about dangerous substances in articles**
    - Regulations or agreements within the European Union or internationally are to be applied in such a way that information about substances hazardous to health and the environment is available to all parties concerned by **2020**.
    - The regulations are to be introduced gradually for different product groups, and children's health is to be given particular focus in the information.
    - Information about substances hazardous to health and the environment that are present in materials and articles is to be made available throughout the entire product life cycle through harmonised systems that cover prioritised product groups.
- **Development and application of the EU's chemical rules**
  REACH and other relevant EU regulations are to be applied by **2020** at the latest or revised if necessary so that:
    - it will to a greater extent become possible to assess and test groups of substances with similar intrinsic properties, chemical structures or areas of use.
    - the substitution principle and its application is strengthened in connection with restrictions, consideration of permits and other relevant elements of the regulatory framework.
- **Greater environmental consideration in EU pharmaceuticals legislation and internationally**
  Decisions are made within the EU or internationally by **2020** at the latest that involve existing and any new regulations for medicinal products for human or veterinary use taking greater environmental consideration.

Sustainable urban development

- **Proportion of pedestrian, bicycle and public transport**
  The proportion of personal journeys using public transport, cycling or walking in Sweden must be at least 25% by **2025**, expressed in person kilometres travelled, with a view to doubling in the long-term the proportion for pedestrian, bicycle and public transport.
- **Integration of urban greenery and ecosystem services into urban environments**
  The majority of the municipalities must utilise and integrate urban greenery and ecosystem services into urban environments in the planning, building and administration of towns and cities and densely populated areas by no later than **2025**.
- **Method for urban greenery and ecosystem services in urban environments**
  Municipalities must have access to a developed method for utilising and integrating city greenery and ecosystem services into urban environments in the planning, building and administration of towns and cities and densely populated areas by no later than **2020**.

Waste

- **Better resource management in the food chain**
  Measures are to be taken so that, by **2020**, resource management in the food chain is improved through separation and biological treatment of at least 50% of food waste from households, catering services, shops and restaurants, with the aim of recovering plant nutrients, with at least 40% treated in such a way that energy is also recovered.
- **Construction and demolition waste**
  Measures are to be taken so that, by **2020**, at least 70% by weight of non-hazardous construction and demolition waste is prepared for reuse, recycling and other material recovery.

Analysis
Sweden's approach to long-term environmental improvement is impressive.

A multi-generational environmental vision is in place to which Sweden aspires in the long term. Several (16) specific topic areas have been identified and are being developed in Sweden which encompass the full environmental sphere and for which instruments and policies have been implemented. The use of an all-party government committee is an interesting approach to achieve consensus.

Specific time-frames and measurable targets have been put into place against which Sweden can measure its progress. In the case of almost all of these, Sweden is openly admitting that targets will not be met and for which further instruments will be required. Regular evaluations provide important information on the measures and priorities needed to improve Sweden's environment. In an annual follow-up, an assessment is made of whether the policy instruments decided on and the measures introduced will be sufficient to achieve the healthy environment which the objectives describe. This shows whether existing instruments need to be changed or new instruments and measures introduced.

In September 2015, the UN General Assembly adopted the 17 Sustainable Development Goals (SDGs), the so-called 2030 Agenda. Sweden has the ambition to be a leader in implementing the 2030 Agenda – both at home and through contributing to its global implementation[8]. The SDGs are integrated and indivisible and balance the three dimensions of sustainable development: economic, social and environmental. Sweden's environmental vision is intended to achieve one dimension of its commitment to sustainable development, without compromising either of the others.

This approach is replicable for Ireland and is in line with best national and international best practice.

[8] http://www.swedishepa.se/Environmental-objectives-and-cooperation/Cooperation-internationally-and-in-the-EU/International-cooperation/

2. Scotland

Introduction

In February 2020 the Scottish Government published *The Environment Strategy for Scotland: Vision and Outcomes*,[9] laying out its long-term vision for Scotland's environmental future and identifying the outcomes which will underpin its strategies and plans for achieving the country's environmental goals and tackling climate change.

The vision is summarised by the following statement:

> *In 2045: by restoring nature and ending Scotland's contribution to climate change, our country is transformed for the better – helping to secure the wellbeing of our people and planet for generations to come.*

The aim is for Scotland to be transformed for the better. Its natural environment will be restored and resilient. Its net zero, circular economy will be inclusive and sustainable, providing opportunities for all to prosper. Scotland will have reduced the global impact of its consumption. And it will have supported the creation of an economy that thrives while securing wellbeing for its people and the planet.

The vision for Scotland has its basis in the United Nations Sustainable Development Goals (SDGs). It is focusing on six areas:

1. **Society**: Scotland's healthy environment supports a fairer, healthier, more inclusive society
2. **Global issues:** Scots are responsible global citizens with a sustainable international footprint
3. **Resources:** Scots use and re-use resources wisely and have ended the throw-away culture
4. **Climate Action:** Scotland plays its full role in tackling the global climate emergency and limiting temperature rise to 1.5°C
5. **Nature**: Scotland's nature is protected and restored with flourishing biodiversity and clean and healthy air, water seas and soils
6. **Economy**: Scotland's thriving economy conserves and grows its natural assets.

With these broad headings, more specific areas are focused on the 11 following goals, as laid out in Scotland's National Performance Framework[10]:

Society

- Children & young people: They grow up loved, safe and respected so that they can realise their full potential
- Communities: Scots live in communities that are inclusive, empowered, resilient and safe

[9] Scottish Government, *The Environment Strategy for Scotland: Vision and Outcomes,* Edinburgh, 2020.
[10] https://nationalperformance.gov.scot/

- Culture: Scots are creative and their vibrant and diverse cultures are expressed and enjoyed widely
- Education: Scots are well-educated, skilled and able to contribute to society
- Health: Scots are healthy and active
- Human rights: Scots respect, protect and fulfil human rights and live free from discrimination
- Poverty: Scots tackle poverty by sharing opportunities, wealth and power more equally

Resources, Climate Action and Nature

- Environment: Scots value, enjoy, protect and enhance their environment

Economy

- Economy: Scots have a globally competitive, entrepreneurial, inclusive and sustainable economy
- Fair work and business: Scots have thriving and innovative businesses, with quality jobs and fair work for everyone

Global Issues

- International: Scots are open, connected and make a positive contribution internationally

Environmental Strategy

There are four elements to the Scottish Environmental Strategy as shown in Figure 1.

A strategic approach to environmental policy bringing together the **Environment Strategy** and future arrangements for **Environmental Principles**, **Governance** and **Monitoring** into a single, integrated framework.

The Environment Strategy describes Scotland's long-term ambitions and priorities for action.

Scotland will propose legislation to ensure that the four EU environmental principles continue to influence the development of policy, supporting the achievement of its environmental ambitions. These principles aim to guide any significant policy and legislative developments that could have a significant environmental effect:

- Precautionary principle. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing cost effective measures to prevent environmental degradation.
- Polluter pays principle. The polluter should bear the cost of pollution control and remediation.
- Prevention principle. Preventative action should be taken to avoid environmental damage.

- Rectification at source principle. Environmental damage should, as a priority, be rectified at source.

Scotland aims to develop a proportionate system of environmental governance, to ensure the continued effective implementation of environmental law.

It has also implemented a monitoring framework to track progress in delivering its Environment Strategy – helping to inform improvements in the approach.

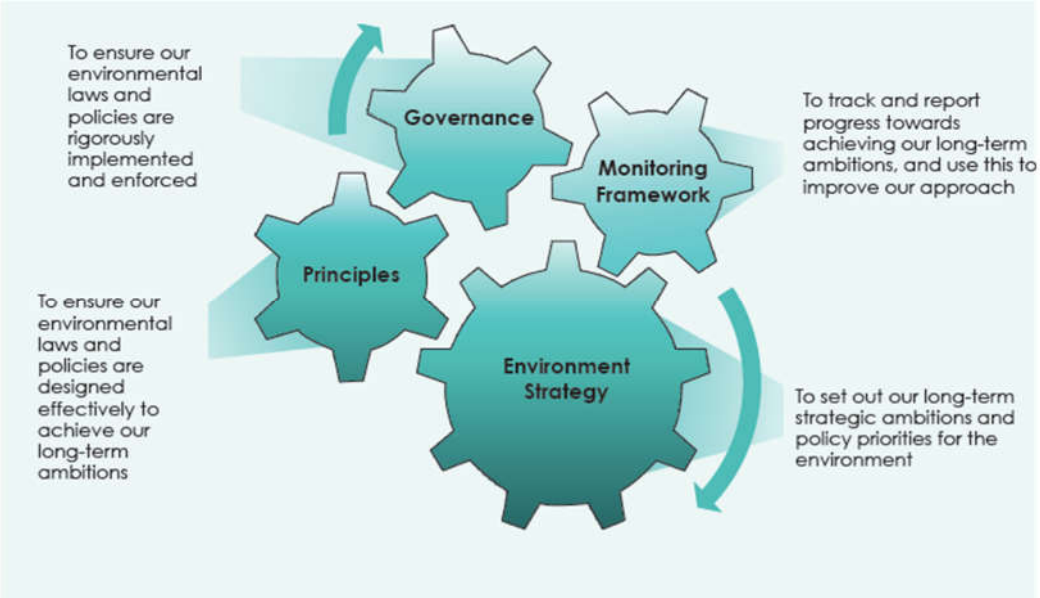

Figure 1: Scotland's strategic Approach to Environmental Policy
(Source: Scottish Government)

Environment Strategy Outcomes

To achieve its vision, Scotland has identified six outcomes it wants to achieve. Three of these are environmental based. Three relate to the relationship between the environment and wider ambitions for the economy, society and international impact.

Outcome 1

Scotland's nature is protected and restored with flourishing biodiversity and clean and healthy air, water, seas and soils.

A range of existing policies contribute to delivering this outcome, including Scotland's Biodiversity Strategy[11] and Route Map[12], the National Marine Plan[13], River Basin

[11] https://www.gov.scot/publications/2020-challenge-scotlands-biodiversity-strategy-conservation-enhancement-biodiversity-scotland/pages/3/
[12] https://www.gov.scot/publications/scotlands-biodiversity-route-map-2020/
[13] https://www.gov.scot/publications/scotlands-national-marine-plan/

Management Plans[14], the Cleaner Air for Scotland Strategy[15] and the Scottish Soils Framework[16].

Outcome 2

Scotland plays a full role in tackling the global climate emergency and limiting temperature rise to 1.5°C

Achieving this outcome means ending Scotland's contribution to climate change, reaching net zero greenhouse gas emissions by 2045 at the latest. It also means reducing Scotland's carbon footprint, including emissions associated with imported products. Finally, it means ensuring that Scotland is resilient to the future impacts of climate change through adaptation measures. Actions to deliver this outcome are currently set out in the Climate Change Plan[17] and the Scottish Climate Change Adaptation Programme[18].

Outcome 3

Scotland uses and re-use resources wisely and has ended the throw-away culture

Scotland's circular economy strategy, Making Things Last[19], and the Food Waste Reduction Action Plan[20] aim to support the delivery of this outcome. Scotland is working to embed circular economy models and practice throughout its economy and society, including through a Circular Economy Bill.[21]

Outcome 4

Scotland's thriving, sustainable economy conserves and grows its natural assets

Scotland's first ever Natural Capital Accounts[22], published in March 2019, estimated that those elements of Scotland's natural capital that can be valued are worth at least £291 billion. Scotland also developed the world's first Natural Capital Asset Index[23], which allows it to track changes in Scotland's natural capital. Scotland has several strategies to secure its economic future as well as a Just Transition Commission and Green New Deal for Scotland[24], announced in the 2019/20 Programme for Government.

[14] https://www.sepa.org.uk/environment/water/river-basin-management-planning/the-current-plans/
[15] https://www.gov.scot/publications/cleaner-air-scotland-road-healthier-future/
[16] https://www.gov.scot/publications/scottish-soil-framework/pages/0/
[17] https://www.gov.scot/publications/scottish-governments-climate-change-plan-third-report-proposals-policies-2018/
[18] https://www.gov.scot/publications/climate-ready-scotland-scottish-climate-change-adaptation-programme/
[19] https://www.gov.scot/publications/making-things-last-circular-economy-strategy-scotland/
[20] https://www.gov.scot/publications/food-waste-reduction-action-plan/
[21] https://www.gov.scot/news/circular-economy-bill/
[22] https://www.gov.scot/publications/scottish-natural-capital-ecosystem-service-accounts-2019/pages/10/
[23] https://nationalperformance.gov.scot/natural-capital
[24] https://www.gov.scot/publications/protecting-scotlands-future-governments-programme-scotland-2019-20/

Outcome 5

Scotland's healthy environment supports a fairer, healthier, more inclusive society

Many Scottish policies currently contribute to delivering this outcome, including policies on transport, planning, energy, waste, recycling, health, education, early years, access, landscape, culture and a fairer Scotland. Building on these, the government aims to explore opportunities to improve the sustainability of its society while enhancing the wellbeing of Scotland's people.

Outcome 6

Scots are responsible global citizens with a sustainable international footprint

To achieve this outcome, Scotland aims to ensure that the country lives within the sustainable limits of its single, shared planet; and, where it can, takes actions which help to make the impact of its consumption and production on other countries sustainable. As a first step, it will gather evidence on the nature of Scotland's international environmental impact.

Activities Underway

The activities underway to achieve this vision and these outcomes include:

SEPA's sector plans

To deliver its Regulatory Strategy, *One Planet Prosperity*[25], the Scottish Environment Protection Agency (SEPA) is changing the way it works to help as many businesses as possible to go beyond compliance, reducing energy and water use, waste and emissions. To support this, SEPA has prepared a series of sector plans[26], with the aim of helping businesses and their supply chains to operate successfully within the means of one planet. The sector plans already developed are: crop production, dairy processing, dairy production, finfish aquaculture, housing, landfill, leather, metals, nuclear power, oil and gas, water supply and wastewater.

Creating a Hydro Nation and tackling climate change

The Hydro Nation strategy[27] seeks to maximise the monetary and non-monetary value of Scotland's water resources, boosting both the economy and the environment. Scottish Water is helping to achieve this by growing its renewable energy portfolio. It now generates more than 200% of its electricity needs renewably and has committed to an ambitious 2040 net zero emissions target.

Expanding Scotland's forest and woodlands

In 2018-19, Scotland exceeded the woodland creation target set out in the Climate Change Plan, planting 11,210 hectares against a target of 10,000 hectares. Scottish Forestry is helping to drive the delivery of planting targets by administering the Forestry Grants

[25] https://www.sepa.org.uk/one-planet-prosperity/

[26] https://sectors.sepa.org.uk/

[27] https://www.gov.scot/policies/water/hydro-nation/

Scheme; and by working closely with public, private, community and voluntary partners to promote appropriate woodland creation across Scotland.

Evidence-based conservation of plants and fungi

The Royal Botanic Garden Edinburgh (RBGE) provides the science to support the conservation of plants and fungi. Recent work has investigated how rare mountain plants in isolated populations are jeopardised by their loss of genetic diversity. By crosspollinating plants to boost their genetic diversity, growing populations in RBGE and translocating them into secure wild sites, this work is helping to ensure rare plants can respond to environmental change, including climate change.

Adaptive measures protecting wild Atlantic salmon

Atlantic salmon populations are under pressure from climate change, due to the impacts of rising sea and river temperatures. Marine Scotland Science has developed the Scotland River Temperature Monitoring Network to help predict temperatures across Scotland's rivers. To mitigate high temperature extremes, Marine Scotland has produced a suite of tools to plan and prioritise bankside tree planting. As well as protecting Atlantic salmon, this creates wider benefits for biodiversity, climate change mitigation and natural flood management.

Healthy Parks, healthy people

The link between nature, an active lifestyle and health is well understood. Scotland's National Parks aim to deliver on this agenda by supporting high quality walking and cycling infrastructure; and by getting people active through green health partnerships, health walks, outreach and volunteer programmes. The aim is to utilise the wildlife and landscapes of the National Parks to achieve health benefits.

Re-using vacant and derelict land

The Scottish Land Commission is leading a taskforce to transform the way Scotland manages vacant and derelict sites. With one in three Scots living within 500m of a derelict site, bringing this land back into productive use – be it greenspace, community facilities, housing or commercial development – can improve Scotland's economy, environment and the wellbeing of its citizens.

Measurement of Performance

Scotland has developed 81 indicators within the 11 topic areas of its vision and these are measured annually to identify whether they are:

- Improving in performance
- Maintaining performance
- Worsening in performance
- Performance to be confirmed (don't know)
- Indicator in development

The topic areas and indicators are:

Children and Young People:

1. Child Social and physical development
2. Child wellbeing and happiness
3. Children's voices being heard
4. Healthy start (perinatal mortality rate)
5. Quality of children's services
6. Children have positive relationships
7. Child material deprivation

Communities

1. Perceptions of local area
2. Loneliness
3. Perceptions of local crime rate
4. Community ownership
5. Crime victimisation
6. Places to interact
7. Access to green and blue space
8. Social capital

Culture

1. Attendance at cultural events or places of culture
2. Participation in a cultural activity
3. Growth in the cultural economy
4. People working in culture and arts

Economy

1. Productivity
2. International exporting
3. Economic growth
4. Carbon footprint
5. Natural capital
6. Greenhouse gas emissions
7. Access to superfast broadband
8. Spend on research and development
9. Income equality
10. Entrepreneurial activity

Education

1. Educational attainment
2. Confidence of young people and children
3. Resilience of young people and children
4. Work place learning
5. Engagement in extra-curricular activities
6. Young people's participation
7. Skill profile of the population

8. Skill shortage vacancies
9. Skills underutilisation

Environment

1. Visits to outdoors
2. State of historic sites
3. Condition of protected nature sites
4. Energy from renewable sources
5. Waste generated
6. Sustainability of fish stocks
7. Biodiversity
8. Clean seas

Fair Work and Business

1. The number of businesses
2. High growth businesses
3. Innovative businesses
4. Economic participation
5. Employees on living wage
6. Pay gap
7. Contractually secure work
8. Employee voice
9. Gender balance in organisations

Health

1. Healthy life expectancy
2. Mental wellbeing
3. Healthy weight
4. Health risk behaviours
5. Physical activity
6. Journeys by active travel
7. Quality of care experience
8. Work related ill health
9. Premature mortality

Human Rights

1. Public services that treat people with dignity and respect
2. Quality of public services
3. Influence over local decisions
4. Access to justice

International

1. A positive experience for people coming to Scotland
2. Scotland's reputation
3. Scotland's population
4. Trust in public organisations

5. International networks
6. Contribution to development of other nations

Poverty

1. Relative poverty after housing costs
2. Wealth inequality
3. Cost of living
4. Unmanageable debt
5. Persistent poverty
6. Satisfaction with housing
7. Food insecurity

In 2020, the following results were noted (pre-Covid):

- For 19 indicators, performance was improving
- For 33 performance was being maintained
- For 13 performance was worsening
- For 6 performance was to be confirmed and
- For 10, the indicator was in development.

Analysis:

Scotland has a short and clear vision inter-generational statement of what it wants and where it wants to be by 2045. Thus, the timeline is clear and the recognition is that it takes a long time to achieve such a vision.

In the shorter term, the main areas of focus are being tackled on a day-to-day basis with policies in place, on areas of focus such as food waste prevention, climate action, etc.

Clear actions and measurable targets are in place and progress is being monitored annually allowing Scotland to have a clear view of whether it is going in the right or wrong direction.

As part of this vision and plan, social issues such as poverty and health are being acted upon, as well as economic issues such as fair employment.

Because Scotland has so many similarities to Ireland in scale, economic circumstances and social parallels, this model is very worthwhile as a potential Irish system.

3. United Kingdom

Introduction

In 2018 the United Kingdom Government published a 25 year plan for environmental protection.[28]

The document lays out a long-term vision for the UK's approach 'to protecting and enhancing the environment in England for the next generation.'

It details a series of long-term goals for the country and the different policies required to achieve those goals. It also provides information on how the UK will meet the goals identified.

The UK's 25 year goals

By adopting the plan, the UK aims to achieve the following:

Clean Air

This will be achieved by:

- Meeting legally binding targets to reduce emissions of five damaging air pollutants. This should halve the effects of air pollution on health by 2030.
- Ending the sale of new conventional petrol and diesel cars and vans by 2040.
- Maintaining the continuous improvement in industrial emissions by building on existing good practice and a successful regulatory framework.

Clean and plentiful water

This will be achieved by:

- Improving at least 75% of UK waters to be close to their natural state as soon as is practicable by:
    - Reducing the damaging abstraction of water from rivers and groundwater, ensuring that by 2021 the proportion of water bodies with enough water to support environmental standards increases from 82% to 90% for surface water bodies and from 72% to 77% for groundwater bodies.
    - Reaching or exceeding objectives for rivers, lakes, coastal and ground waters that are specially protected, whether for biodiversity or drinking water as per River Basin Management Plans.
    - Supporting The Water Services Regulation Authority's (OFWAT) ambitions on leakage, minimising the amount of water lost through leakage year on year, with water companies expected to reduce leakage by at least an average of 15% by 2025.
    - Minimising by 2030 the harmful bacteria in designated bathing waters and continuing to improve the cleanliness of the UK's waters, also making sure that potential bathers are warned of any short-term pollution risks.

[28] UK Government. *A Green Future: Our 25 Year Plan to Improve the Environment,* London, 2018.

Thriving plants and wildlife

The UK aims to achieve a growing and resilient network of land, water and sea that is rich in plants and wildlife.

At sea, this will be achieved by:

- Reversing the loss of marine biodiversity and, where practicable, restoring it.
- Increasing the proportion of protected and well-managed seas, and better managing existing protected sites.
- Making sure populations of key species are sustainable with appropriate age structures.
- Ensuring seafloor habitats are productive and sufficiently extensive to support healthy, sustainable ecosystems.

On land and in freshwaters, this will be achieved by:

- Restoring 75% of the UK's one million hectares of terrestrial and freshwater protected sites to favourable condition, securing their wildlife value for the long-term.
- Creating or restoring 500,000 hectares of wildlife-rich habitat outside the protected site network, focusing on priority habitats as part of a wider set of land management changes providing extensive benefits.
- Taking action to recover threatened, iconic or economically important species of animals, plants and fungi, and where possible to prevent human-induced extinction or loss of known threatened species in England and the Overseas Territories.
- Increasing woodland in England in line with an aspiration of 12% cover by 2060: this would involve planting 180,000 hectares by the end of 2042.

A reduced risk of harm from environmental hazards such as flooding and drought

The UK aims to reduce the risk of harm to people, the environment and the economy from natural hazards including flooding, drought and coastal erosion by:

- Making sure everyone is able to access the information they need to assess any risks to their lives and livelihoods, health and prosperity posed by flooding and coastal erosion.
- Bringing the public, private and third sectors together to work with communities and individuals to reduce the risk of harm.
- Making sure that decisions on land use, including development, reflect the level of current and future flood risk.
- Ensuring interruptions to water supplies are minimised during prolonged dry weather and drought.
- Boosting the long-term resilience of homes, businesses and infrastructure.

Using resources from nature more sustainably and efficiently

The UK aims to ensure that resources from nature, such as food, fish and timber, are used more sustainably and efficiently by:

- Maximising the value and benefits the UK gets from its resources, doubling resource productivity by 2050.

- Improving the approach to soil management: by 2030 to have all of England's soils managed sustainably, using natural capital thinking to develop appropriate soil metrics and management approaches.
- Increasing timber supplies.
- Ensuring that all fish stocks are recovered to and maintained at levels that can produce their maximum sustainable yield.
- Ensuring that food is produced sustainably and profitably.

Enhanced beauty, heritage and engagement with the natural environment

The UK aims to conserve and enhance the beauty of its natural environment and make sure it can be enjoyed, used by and cared for by everyone, by:

- Safeguarding and enhancing the beauty of the UK's natural scenery and improving its environmental value while being sensitive to consideration of its heritage.
- Making sure that there are high quality, accessible, natural spaces close to where people live and work, particularly in urban areas, and encouraging more people to spend time in them to benefit their health and wellbeing.
- Focusing on increasing action to improve the environment from all sectors of society.

In addition, the UK seeks to manage pressures on the environment by the following actions:

Mitigating and adapting to climate change

The UK aims to take all possible action to mitigate climate change, while adapting to reduce its impact through:

- Continuing to cut greenhouse gas emissions including from land use, land use change, the agriculture and waste sectors and the use of fluorinated gases. The UK *Climate Change Act 2008* commits to reducing total greenhouse gas emissions by at least 80% by 2050 when compared to 1990 levels.
- Making sure that all policies, programmes and investment decisions take into account the possible extent of climate change this century.
- Implementing a sustainable and effective second National Adaptation Programme.

Minimising waste

The UK aims to minimise waste, reuse materials and manage materials at the end of their life to minimise the impact on the environment by:

- Working towards the ambition of zero avoidable waste by 2050
- Working to a target of eliminating avoidable plastic waste by end of 2048.
- Meeting all existing waste targets – including those on landfill, reuse and recycling – and developing ambitious new future targets and milestones.
- Seeking to eliminate waste crime and illegal waste sites over the lifetime of the plan, prioritising those of highest risk. Delivering a substantial reduction in litter and littering behaviour.
- Significantly reducing and where possible preventing all kinds of marine plastic pollution – in particular material that came originally from land.

Managing exposure to chemicals

The UK aims to ensure that chemicals are safely used and managed, and that the levels of harmful chemicals entering the environment (including through agriculture) are significantly reduced. This will be achieved by:

- Seeking in particular to eliminate the use of Polychlorinated Biphenyls (PCBs) by 2025, in line with commitments under the Stockholm Convention.
- Reducing land-based emissions of mercury to air and water by 50% by 2030.
- Substantially increasing the amount of Persistent Organic Pollutants (POPs) material being destroyed or irreversibly transformed by 2030, to make sure there are negligible emissions to the environment.
- Fulfilling the UK's commitments under the Stockholm Convention as outlined in the UK's most recent National Implementation Plan.

Enhancing biosecurity

The UK aims to enhance biosecurity to protect wildlife and livestock and boost the resilience of plants and trees. This will be achieved by:

- Managing and reducing the impact of existing plant and animal diseases; lowering the risk of new ones and tackling invasive non-native species.
- Reaching the detailed goals to be set out in the Tree Health Resilience Plan of 2018.
- Ensuring strong biosecurity protection at UK borders, drawing on the opportunities leaving the EU provides.
- Working with industry to reduce the impact of endemic disease.

Policies to achieve the goals

The UK has developed a series of six policy groups to achieve its 25 year goals.

1: Using and managing land sustainably

- Embedding an 'environmental net gain' principle for development, including housing and infrastructure
- Managing and incentivising land management
    - Designing and delivering a new environmental land management system
    - Introducing new farming rules for water
    - Working with farmers to use fertilisers efficiently
    - Protecting crops while reducing the environmental impact of pesticides
- Improving soil health and restoring and protecting peatlands
    - Developing better information on soil health
    - Restoring vulnerable peatlands and ending peat use in horticultural products by 2030
- Focusing on woodland to maximise its many benefits
    - Supporting the development of a new Northern Forest
    - Supporting larger scale woodland creation
    - Appointing a national Tree Champion
- Reducing risks from flooding and coastal erosion
    - Expanding the use of natural flood management solutions
    - Putting in place more sustainable drainage systems
    - Making 'at-risk' properties more resilient to flooding

2: Recovering nature and enhancing the beauty of landscapes

- Protecting and recovering nature
    - Publishing a strategy for nature
    - Developing a Nature Recovery Network
    - Providing opportunities for the reintroduction of native species
    - Exploring how to give individuals the chance to deliver lasting conservation
    - Improving biosecurity to protect and conserve nature
- Conserving and enhancing natural beauty
    - Reviewing National Parks and Areas of Outstanding Natural Beauty
- Respecting nature in water use
    - Reforming the approach to water abstraction
    - Increasing water supply and incentivising greater water efficiency and less personal use

3: Connecting people with the environment to improve health and wellbeing

- Helping people improve their health and wellbeing by using green spaces
    - Considering how environmental therapies could be delivered through mental health services
    - Promoting health and wellbeing through the natural environment
- Encouraging children to be close to nature, in and out of school
    - Helping primary schools create nature-friendly grounds
    - Supporting more pupil contact with local natural spaces
- Greening towns and cities
    - Creating more green infrastructure
    - Planting more trees in and around towns and cities
- Making 2019 a Year of Action for the environment
    - Helping children and young people from all backgrounds to engage with nature and improve the environment.
    - Supporting the 2019 Year of Green Action

4: Increasing resource efficiency and reducing pollution and waste

- Maximising resource efficiency and minimising environmental impacts at end of life.
    - Achieving zero avoidable plastic waste by the end of 2042
    - Reducing food supply chain emissions and waste
    - Reducing litter and littering
    - Improving management of residual waste
    - Cracking down on fly-tippers and waste criminals
    - Reducing the impact of wastewater
- Reducing pollution
    - Publishing a Clean Air Strategy
    - Curbing emissions from combustion plants and generators
    - Publishing a Chemicals Strategy
    - Minimising the risk of chemical contamination in water
    - Ensuring they continue to maintain clean recreational waters and warning about temporary pollution

5: Securing clean, healthy, productive and biologically diverse seas and oceans

- Introducing a sustainable fisheries policy as the UK leaves the Common Fisheries Policy
- Achieving good environmental status in UK seas while allowing marine industries to thrive

6: Protecting and improving the global environment

- Providing international leadership and leading by example
    - Tackling climate change
    - Protecting and improving international biodiversity
- Helping developing nations protect and improve the environment
    - Providing assistance and supporting disaster planning
    - Supporting and protecting international forests and sustainable global agriculture
- Leaving a lighter footprint on the global environment
    - Enhancing sustainability
    - Protecting and managing risks from hazards
    - Supporting zero-deforestation supply chains

Putting the Plan into practice

The UK aims to put its 25 year plan into practice by the following measures:

- Consulting on setting up a new independent body to hold government to account and a new set of environmental principles to underpin policy-making.
- Developing a set of metrics to assess progress towards the 25-year goals.
- Refreshing the 25 Year Environment Plan regularly to ensure that collectively it is focusing on the right priorities, using the latest evidence, and delivering better value for money.
- Strengthening leadership and delivery through better local planning, more effective partnerships and learning from the four pioneer projects.
- Establishing a new green business council and exploring the potential for a natural environment impact fund.
- Work closely with a large range of stakeholders over the coming year to identify their contribution to the goals set out in this Plan.

Analysis

The UK has set out a clear inter-generation vision for where it wants to be by the year 2043 (25 years after the 2018 plan was initiated). There is a clear and achievable time span for the major changes it wants to achieve in the UK's environment.

A clear and ambitious range of environmental areas is covered in the plan and the UK has laid out six main policy areas to cover these. The UK has taken an environmental approach only in this plan, it does not include social and economic elements.

The scope of the plan is quite ambitious but until its implementation and monitoring is well under way, the efficacy of the 25 year plan cannot be fully analysed. A clear and resourced

set of short term actions needs to be implemented in the UK, backed up by short-term and medium-term policy instruments year on year for the plan to succeed.

Since it is at the early stages, its replicability is not yet proven. Because the UK is of such a different scale to Ireland and since it is also in a process of major political change, it is difficult to assess the applicability of the plan to Ireland.

However, the list of indicators that the UK has developed is very comprehensive and it merits consideration if a national list of indicators is being developed for Ireland.

4. Finland

Introduction

Finland's vision for sustainability is laid out in the policy *The Finland We Want by 2050*, adopted in 2014 and updated in 2016.[29] The policy aims to lay out a long-term, intergenerational, economic, social and environmental path for Finland. It provides a long-term strategic framework for a whole-of-society commitment to sustainable development.

In early 2016, the Prime Minister's Office assumed responsibility for coordinating the national implementation of Agenda 2030 and the national sustainable development policy, as part of the secretarial duties of the Finnish National Commission on Sustainable Development.[30]

Finland's plan for the 2030 Agenda, submitted to parliament in 2017, is the framework for implementation, national follow-up and review up until 2030. The plan focuses on two key areas:

i. A carbon-neutral and resource-wise Finland;
ii. A non-discriminatory, equal and competent Finland.

It also outlines both domestic and international commitments, and makes an explicit commitment to policy coherence to support sustainable development.[31] The development policy, which is an integral part of Finland's foreign and security policy, contains four priority areas based on the 2030 Agenda and SDGs:

i. Gender equality and the empowerment of girls and women;
ii. Supporting economies in developing countries in creating jobs, sources of livelihood and wellbeing;
iii. Democratic and functioning societies;
iv. Better food security and access to water and energy; and the sustainability of natural resources

Five Principles of Sustainable Development

Finland is basing its move towards sustainable development upon five main guiding principles.

1. Global responsibility

The effects of every country's actions reach far beyond its national borders. The world's challenges are also Finland's challenges, and it hopes to assume the role of a pioneer in solving shared global problems. Accepting global responsibility requires a sense of fairness: through its actions, Finland must ensure that others also retain their potential for sustainable development and the resulting security and peace that comes with it.

[29] Finnish Commission on Sustainable Development, *The Finland we want by 2050 – Society's Commitment to Sustainable Development*, 2016, CSD, Helsinki.
[30] Prime Minister's Office Finland, *National report on the implementation of the 2030 Agenda for Sustainable Development FINLAND*, 2016, PMO, Helsinki.
[31] ibid.

2. Cross-generational thinking

The consequences of actions must be assessed far into the future. Instead of promoting short-term interests, Finland will weigh the effects that its decisions will have on future generations. A cross-generational perspective requires Finns to grasp large-scale issues, understand the interwoven consequences of their solutions and take responsibility for their actions.

3. The limited carrying capacity of nature

While the number of people on the planet continues to rise, the amount of natural resources available to each person is decreasing. As a result, the capacity of nature to produce and sustain the functions that are vital to the well-being of people and all other species has been exceeded. Finland's activities will adapt to the carrying capacity of nature and its natural regeneration so that humanity's chances for a good life, both now and in the future, can be safeguarded.

4. Cooperation

Sustainable development requires everyone to work together. All people must be prepared to make sustainable choices and make their voices heard. Finland aims to solve its differences together and have trust in the fact that its society works. Well-being that lasts for one's entire lifespan and social security create the basis for a sustainable society.

5. Creative use of knowledge and expertise

Research lays the foundation for solving the greatest challenges faced by society and humanity. A prerequisite for prudent action over the long-term is to combine skills, knowledge, expertise and creativity. Finland aims to constantly develop both experience-based knowledge and evidence-based scientific knowledge in an open manner. It seeks to utilise existing information and skills more effectively in finding sustainable solutions. To find new solutions, cooperation, initiative, trial and error are also necessary.

Eight Objectives

In order to make its vision for 2050 a reality, Finland has laid out eight objectives.

These objectives look at sustainable development from the perspectives of the well-being of people and the environment, a healthy and sustainable economy and the promotion of sustainable lifestyles. The objectives are based upon the principles of sustainable development: global responsibility, cross-generational thinking, the limited carrying capacity of nature, cooperation, and the creative utilisation of knowledge and expertise.

The objectives are:

1) ***Equal prospects for well-being.*** All members of society will be guaranteed equal prospects for health, education and employment. Finland aims for a high standard of education/general knowledge along with social mobility. Sustainable development will be integrated into primary education, the education of all specialised fields and lifelong learning. Inequality will be reduced by ensuring an adequate livelihood and basic social security, with equal access to all welfare services. Cultural rights will be recognised and

supported and Finland will strengthen cultural values, also supporting indigenous Sámi people to practice their own culture in accordance with sustainable development. Finland will also strive to eliminate extreme poverty and reduce inequality and discrimination in the world.

2) ***A participatory society for citizens.*** Finland will strengthen democracy and promote equal opportunities for all persons to influence their own lives and common issues. It will especially support the participation of young people in society. It will make administration more transparent: open and public information increases the trust of citizens and their chances of influencing societal issues. Finland will promote cultural activity, diversity, equality and tolerance so that all citizens, including different minorities, can fully take part in developing its society. Finland will actively participate in international cooperation that promotes peace and security, human rights and sustainable development.

3) ***Sustainable work.*** Finland aims to increase jobs and improve the productivity, profitability and quality of work in a sustainable way. The goal is a high employment rate. Finland will promote the creation of jobs in the green economy. It will develop the education and social security systems in accordance with the need for new expertise, the needs of the employment market and the measures necessary to secure an adequate livelihood. Finland will support the employment of young people, harness the expertise of immigrants and provide employment opportunities for those with a reduced capacity to work. Finland will promote entrepreneurship and innovation and develop the service sector. It will help the industrial sector in its regeneration process, aiming at more value-added and high-productivity jobs. It will improve the quality of employment by increasing the opportunities for employees to have an influence on their work and work environments, and by providing opportunities for flexible working methods and schedules.

4) ***Sustainable local communities***. Finland will create sustainable and safe communities where jobs, housing, comprehensive services, sustainable transport systems, the use of information and communication technology, and green areas support economic, social and cultural well-being, as well as the well-being of the environment. It will strengthen local communities by supporting an active civil society, and by developing meeting places, operating models and local decision-making that promote social learning and influence, so that citizens can create pleasant and healthy living environments for themselves. It will reduce the need for traffic, increase telecommuting arrangements and strengthen electronic services. Finland will prepare for changes in climate and water levels and promote local adaptation to climate change.

5) ***A carbon-neutral society.*** Finland aims to be a carbon-neutral society. To achieve this objective, it will follow a national roadmap towards a carbon-neutral society by the year 2050. The central measures to be undertaken for reaching this objective are improving energy efficiency, increasing the share of renewable energy sources, and developing the low-carbon sectors of the economy. It will develop intelligent and interconnected structures, such as transport and energy systems, that enable and promote the use of renewable energy sources and energy savings, while also encouraging people to reduce energy consumption. Finland will invest in the development of innovative energy technologies and forms of energy as well as new businesses.

6) ***An economy that is resource-wise***. Finland and Finns will promote and offer sustainable and competitive solutions, both nationally and globally. The country will increase resource efficiency, as well as create business models that boost the productivity of natural resources and test them. Finnish companies will be globally respected for their socially responsible business operations. Wise utilisation of resources and knowledge will provide a competitive advantage to companies and communities and a basis for environmental business. Finland will offer the best test market and operating environment in the world for environmental innovation and a sustainable economy. It will invest, in particular, in clean technology, high-quality research, the bioeconomy and renewable energy, as well as in the development and production of non-material goods and services. Finland will pioneer sustainable food production and forestry.

7) ***Lifestyles that respect the carrying capacity of nature***. Finland will strive to bring the global consumption of natural resources to an environmentally sustainable level by the year 2050. It will focus on encouraging both consumers and companies to reduce their ecological footprints. It will incentivise consumers to make consumption choices that conserve natural resources in housing, transport and food. It will encourage companies and communities to offer sustainably produced products and services to consumers. It will strengthen attitudes that value sustainable choices and it will support lifestyles based on non-material consumption and services that sustain such lifestyles.

8) ***Decision-making that respects nature.*** Finland will foster people's respect for biodiversity and raise their awareness of its importance, so that administration, municipalities, companies and citizens will consider it in their own decision-making and actions. The goal is to stop the loss of biodiversity by 2020. It will strengthen guidance that promotes biodiversity and the sustainable use of natural resources and that respects proprietary rights. It will increase understanding of the importance of ecosystem services for people's well-being. It will redirect environmentally harmful incentives, while considering social, economic and cultural conditions in a balanced manner. Finland will promote the use of scientific research data to support decision-making.

Implementation and Measurement

The Prime Minister's Office is responsible for the implementation of sustainability in Finland (the 2030 Agenda) and in reviewing and reporting on national progress in a report: *The Voluntary National Review of Finland*. The first VNR was submitted to the UN in 2016 and Finland is committed to reporting to the UN on a regular basis, every four to five years. The second VNR was published in 2020[32] and contains the following features:

A 23-stage process is undertaken to develop the VNR involving many stakeholders, using many sources and involving a peer review by other countries. This can be summarised in Figure 2:

[32] Prime Minister's Office, *Voluntary National Review 2020: Finland – Report on the Implementation of the 2030 Agenda for Sustainable Development*, 2020, PMO, Helsinki.

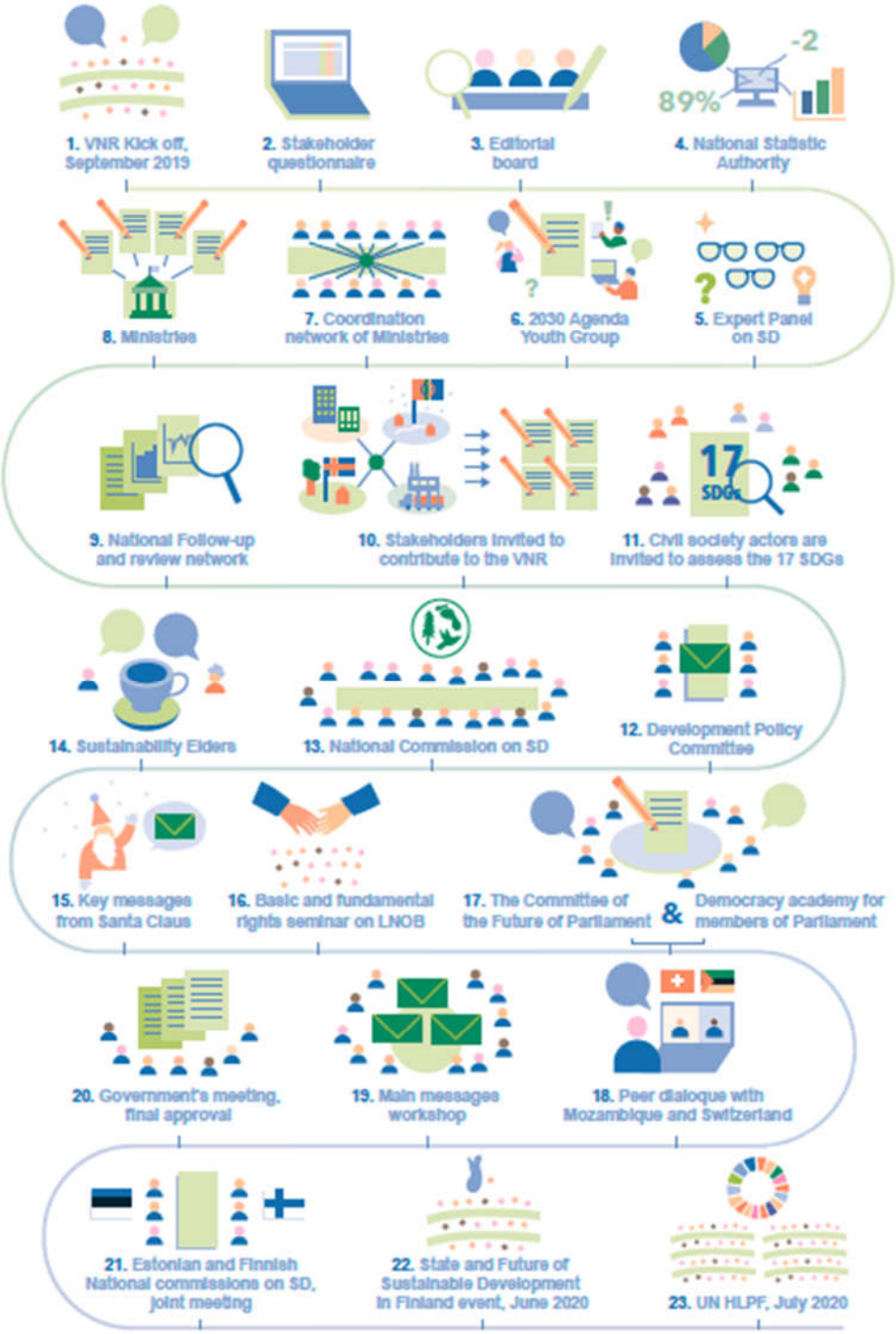

Figure 2: The process for the Voluntary National Review of Finland on sustainability (Source: Finnish Government)

The VNR reviews the progress of Finland over the previous four years.

It reviews the policy and enabling environment for sustainable development, including:

- Key changes/lessons learned
- Creating ownership of SD (whole of government and whole of society approaches)
- Private sector contribution
- Work in regions, cities and municipalities
- Dissemination and communication

It reviews the incorporation of the Sustainable Development Goals in national frameworks, including:

- Key changes/lessons learned
- The role of parliament
- Government programmes (2015-2019, and 2019-)
- Government implementation plans, 2017 and 2020
- Incorporation of the SDGs into Ministries strategies and programmes
- Incorporation of the SDGs into National Strategy on Sustainable Development
- Incorporation of the 2030 Agenda into Research and Innovation policy
- Incorporation of the 2030 Agenda into Development, Foreign and Security and Trade policy
- Linkages to the work of the European Union and the Nordic Council of Ministers

It reviews integration of the three dimensions.

It reviews the *Leaving No One Behind* (LNOB) principle (that Finland's sustainable development policy must reduce inequality worldwide and strengthen the evaluation of the human rights impact of all foreign policy) in relation to:

- Key changes/lessons learned
- Promotion of the LNOB principle in national context
- How Finland is implementing all the SDGs
- LNOB in national follow up and data disaggregation

It reviews the institutional mechanisms to support SD in relation to:

- Key changes/lessons learned
- Governmental mechanism
- Societal mechanisms
- Monitoring and reviewing mechanisms

It also reviews structural issues.

The VNR reviews Finland's performance for all the 17 SDGs, giving rankings for each one. A government assessment and a civil society assessment are both given and these often differ.

The rankings are:

- Finland has achieved the target
- Finland has not achieved but is close to achieving the target.
- Finland has not achieved the target
- Finland has made good progress towards the target
- Finland's progress towards the target is stable or has stagnated
- Finland has moved away from the target

The VNR reviews the means of implementation of SD in Finland including:

- Key changes/lessons learned
- SD in the State Budget
- Finland's official development funding
- Tax initiative and taxation capacity building
- Investments on innovations and technologies enhancing SDGs
- Allocation of funding from two central research funding instruments

The VPN also lays out the next steps to implement sustainable development in Finland.

Analysis

Finland's approach to long-term intergenerational sustainable development is impressive. By having a long-term vision, Finland knows the direction to which it wants to go and has a clear and simple goal in mind which has been publicly communicated and has achieved top-level political approval.

This vision is based on a set of clear sustainable development principles, incorporating all three pillars of sustainable development. It also commits to the country not achieving sustainability 'on the back' of other regions, incorporating the 'Leave No One Behind' principle.

A series of policy commitments and instruments have been put in place to achieve short-term and immediate progress, driving actions on the ground in a wide range of spheres.

The progress towards the vision is measured against a clear set of measurable targets and the involvement of both government and civil society in measuring progress shows a high level of confidence and transparency.

Finland involves civil society in reviewing its own policies; it has both a government assessment and a civil society assessment of performance.

As in the case of Scotland, Finland offers Ireland a level of replicability due to the size, scale and nature of the Finnish economy and its society. The approach in Finland offers a level of transferability of the lessons learned there and the applicability of the approach they have taken.

5. Belgium

Introduction
The Belgian Interdepartmental Commission for Sustainable Development (CIDD) (an ad hoc working group, made up of experts from different federal public administrations) approved its draft federal long-term strategic vision for sustainable development in 2012 and it was approved in 2013.[33, 34]

This federal level Belgian vision is based on an inter-generational horizon of 2050, going well beyond the electoral cycle. The Federal Long-Term Strategic Vision (LTV) for Sustainable Development lays out how Belgium can achieve, by 2050, within its ecological limits, a higher quality of life, accompanied by social justice and economic development.

This vision sets out four ambitious challenges of the society in which the Belgian people want to live:

1) An inclusive and united society;
2) A resilient society that adapts its economy to economic, social and ecological challenges;
3) A society that preserves its environment;
4) A society supported by public authorities assuming their social responsibility.

These four challenges were then translated into **55 themes and objectives** such as the fight against poverty, public health, mobility, energy, climate change and development cooperation. In addition, the long-term vision also contains **a series of indicators** which will make it possible to measure the achievement of the set objectives.

The long-term 2050 vision guides the cycle of Federal Sustainable Development Plans (PFDD). It serves as a frame of reference for the activities of the Interdepartmental Commission for Sustainable Development (CIDD), the Federal Institute for Sustainable Development (IFDD) and the Federal Planning Bureau.

An inclusive and united society
Belgium's 2050 vision is:

> *In 2050, our society will be inclusive – a society where everyone will have equal access to all areas of life, taking into account the particularity of rural areas and cities. In this way, integration will be facilitated, by removing all discriminations relating to gender, culture, origins, etc. The social bond will be woven between generations, cultures and social categories. Conflicts will be managed to ensure basic security for all as well as social cohesion. Solidarity and volunteering will be encouraged. Conditional prerequisites for the well-being of citizens will be met, namely: peace, education, income, health, decent housing, a stable ecosystem, sustainable resources and social justice. In promoting the well-being of each individual, it will be essential that an inclusive society fights against*

[33] OECD, *Policy Coherence for Sustainable Development 2018*, OECD, Paris.
[34] See also: https://www.developpementdurable.be/fr/politique-federale/strategie-federale/la-vision-strategique-federale-long-terme-vlt

poverty and social inequalities, in particular on health matters. Our public health system will be adapted to prevent, wherever possible, chronic diseases, while preserving the best possible standard of living for all through appropriate education and employment, respectful of living and health conditions.

Under this heading there are **three main target areas** containing **11 specific focal points,** as follows:

Social cohesion and the fight against precarity:

1) Women and men will exercise their rights equally.
2) Everyone will have income from work or assets and will have access to services of general interest.
3) Each citizen will have the means to develop a capacity for social integration.

Health:

4) Public health has been improved and will be maintained at a high level.
5) Quality health care will be accessible to all.
6) The effects of environmental degradation on health will be taken into account.
7) Morbidity / mortality from chronic diseases will be reduced.

Employment:

8) The job market will be accessible to all and offer a job decent to every citizen of working age.
9) The level of employment will be as stable and high as possible and will respect the principles of decent work.
10) The level of unemployment will be reduced.
11) Working conditions will be adapted throughout career to ensure a better quality of life and a longer work span.

A resilient society that adapts its economy to economic, social and ecological challenges

The vision for this topic is stated as follow:

In 2050, we will live in a resilient society. Production activities and consumption will be based on efficient use of natural resources while respecting the limits of our planet, contributing to improved social and economic development. In Belgium all stakeholders - public authorities, companies, society civilians and each individual citizen - will contribute to a fair transition towards an economically sustainable model in which human well-being and minimal impact on the environment are prioritised. Economic development and environmental degradation will be fully decoupled. In this development the creation of good-quality decent jobs is central, while ensuring sufficient supply of goods and services that meet basic needs. In this vision Belgium's economic competitiveness is guaranteed while maintaining the environmental and social performance of all its goods and services over their full life cycles. Forms of low energy low carbon, especially renewable energies, will be greatly developed. Product efficiency will

be significantly increased. The accessibility of energy services, both spatially and financially, will be significantly developed for everyone. Sustainable mobility and transport will contribute to economic and social development and will be respectful of the environment thanks to an integrated multimodal system. This will produce a greatly reduced account of greenhouse gas emissions through externalising environmental costs and careful planning. Dietary patterns will not negatively affect health or the environment thanks to healthy products, integrated agriculture and reduced food waste.[35]

Under this heading there are **four main areas** with **19 specific focal points** as follows:

Consumption and production patterns

12) The economic development of society will be measured by taking into account its environmental impact.
13) The prices of goods and services will incorporate as much as possible environmental and social externalities.
14) The environmental and social performance of all goods and services placed on the market will be taken into account across their life cycle.
15) Consumers and producers will assume their social responsibility by adopting sustainable consumption and production patterns.

Energy

16) Low-carbon and renewable forms of energy will be predominant.
17) Electricity production will be highly decarbonised (from 96% to 99%).
18) The energy efficiency of products will be greatly increased.
19) The use of biomass for energy purposes will safely operate.
20) Security of energy supply will be guaranteed.
21) Energy services will be accessible to all.

Mobility and transport

22) Everyone will have access to a mode of transport whose emissions of greenhouse gases and pollutants have the lowest possible impact on biological diversity and quality of life.
23) Public transport modes will take precedence over those for the individual. For the transport of goods, rail transport and rivers will be the most widely used.
24) Mobility and transport will be carried out under the most efficient conditions.
25) Mobility and transport will be safe, aiming to eliminate any deaths.
26) Means of transport will produce the lowest possible levels of emissions, pollutants and noise; they will consume little energy and will be based on fossil-free alternative sources.
27) All environmental externalities (greenhouse gases, pollution, noise, etc.) and societal externalities (accidents, congestion etc.) will be integrated in transport prices as much as possible.

[35] l'Institut Fédéral pour le Développement Durable. *En 2050: Une vision stratégique fédérale à long terme pour un développement durable.* 2013, Développement Durable, Bruxelles.

Food

28) Everyone will have access to safe, healthy and nutritional food.
29) The environmental and social impact of food production and consumption will be significantly reduced. Waste along the food chain will be reduced substantially.
30) Belgian society will reduce the negative impacts of eating habits on food sovereignty in developing countries.

A society that preserves its environment

The Belgian 2050 vision for this topic is stated as:

> *By 2050, the goal of a healthy environment will have been achieved. Belgium will have achieved in a fair manner its transition to a low carbon and resource efficient society. It will have taken the necessary measures to prevent or, failing that, correct the environmental impacts due to human activities. Global warming will have been limited and will remain limited to 1.5°C to 2°C in the long term. Water and air pollution will be controlled and will not have any significant impact on health, biodiversity and ecosystems. The goods and services provided by ecosystems will be restored, valued and used with care in a sustainable manner, thus contributing to the preservation of biodiversity. Biodiversity itself will be valued, conserved, protected and restored and Belgium will function in sustainable prosperity while encouraging social economic and territorial cohesion and by safeguarding our cultural heritage.*

Under this heading there are **four main areas** with **13 specific focal points** as follows:

Climate change

31) Belgian greenhouse gas emissions will be reduced domestically at least 80% to 95% in 2050 from their 1990 level.
32) Belgium will have adapted to the direct and indirect impact of the consequences of climate change.

Natural resources

33) The quantity of non-renewable raw materials consumed will be significantly decreased. Primary materials will be exploited only when recovery is no longer possible.
34) Renewable raw materials, and in particular fresh water, will be exploited without endangering the ability of future generations to utilise these resources.

Outdoor and indoor air

35) Emissions of pollutants, such as nitrogen oxides, fine particles, persistent organic pollutants, heavy metals, nitrates and phosphates will be considerably reduced. Pollution of air (indoor and exterior), water and soil will no longer have a significant impact on health nor on the environment.

Biodiversity

36) Access to natural resources and the fair and equitable sharing of benefits arising from their use will be ensured and will contribute effectively in the conservation of biological diversity, and the fight against scarcity.
37) The goods and services provided by ecosystems will be restored, valued and used with care and in a sustainable manner, directly contributing to the preservation of biodiversity.
38) The spread of new invasive alien species will be stopped. Those already established will be sharply reduced.
39) Belgian marine areas will be protected, restored and enhanced, in particular through the establishment of protected areas, the connection between natural habitats, and the restoration of degraded ecosystems.

A society supported by federal public authorities assuming their social responsibility

The 2050 vision for Belgium in this regard is:

> *In 2050, federal public authorities, as major players in society, will be the guarantor of the general and collective interest. They will have developed cross-cutting policies to make the transition to sustainable development, in particular regarding the functioning of the public and public finances, science policy and cooperation development. As an extension of existing efforts, a new governance policy will be put in place. This ensures that the federal public authorities fulfil a role of stimulus and regulation in relation to precise and agreed objectives. They will create partnerships with all the actors of civil society (social partners and non-governmental organizations) as well as innovative mechanisms for financing to respond quickly to changes in society. The federal public authorities will also play a watching role to anticipate the impact of public policies and new societal challenges for all citizens and in particular the most disadvantaged.*

Under this heading there are **four main areas** with **16 specific focal points** as follows:

Public Authorities

40) The federal public authorities will guarantee the democratic functioning of their consultation and consultation bodies.
41) The federal public authorities will provide all users, regardless of their social and cultural condition, with a service that meets their expectations, taking into account the general interest.
42) International collaboration will be oriented towards sustainable development. Public policies, including at international and European level, will be developed in line with the objectives of the long-term vision term of sustainable development.
43) The institutions of federal public authorities will contribute to sustainable development by improving their environmental and social performance.

Public finances

44) Debt, resulting from both social developments environmental and economic developments, will remain at sustainable levels, that is, not penalizing future generations.
45) Belgium will balance its trade and financial relations with other countries.
46) Public finances will consist of no longer seeing the result of past state action only in terms of public debt (i.e. liabilities) but will also value assets (in the broad sense) corresponding to the State's contribution to the state of the various 'capitals' – physical, training, R&D, environmental etc.
47) Taxation will integrate external costs, by having shifted from work towards environmental and social externalities.
48) Tax and social fraud will have disappeared.

Science policy

49) Research & development budgets will reach at least 3% of GDP and will increase year on year.
50) The results of the research will be taken into account in policy development, involving stakeholders and users of these results from the start: in identifying problems, and in the formulation of research questions and objectives.
51) Strategic research will address societal challenges and sustainable development.

Cooperation development

52) Policy measures in various relevant areas (trade, regulation financial, migration, agriculture, etc.) will not impact negatively on sustainable development outside Belgium and in particular on the least developed countries.
53) In the context of the overall post-2015 development framework, cooperation development will also support the fight against poverty in the poorest countries, and the most vulnerable and most fragile and within these countries.
54) Official Development Assistance (ODA) will remain effective in reaching the poorest countries and populations, while in line with the principles of aid effectiveness.
55) Belgian development cooperation will continue to adapt to international development so that it plays a role where it is needed and efficient. It will continue to support developing countries – by giving priority to those most in need and most vulnerable – to face future environmental risks and to ensure a transition to companies low-carbon and as climate-resilient as possible.

Regional Approach in Flanders

Although the main 2050 vision for Belgium is being acted upon at a national level, Flanders also has its own 'Vision 2050'. In this the region has identified seven transition priorities as flagship initiatives cutting across policy areas and requiring involvement of different ministers:

1) The circular economy;
2) Smart living;

3) Industry 4.0;
4) Lifelong learning and a dynamic professional career;
5) Healthcare and living together in 2050;
6) Transport and mobility; and
7) Energy.

The focus is on addressing regional challenges and achieving significant progress in key opportunity areas rather than trying to implement an all-encompassing approach. This makes the transition towards a sustainable path more manageable and concrete for stakeholders and public opinion while facilitating co-operation among departments and, ultimately, faster and better results. It also facilitates continuous learning amongst all stakeholders, although respective responsibilities for results could be clearer.[36]

Analysis

Belgium has taken the federal route to develop a long-term sustainable development vision by 2050. On a day-to-day level environmental issues are normally managed regionally.

The Belgian vision is more detailed and more multi-faceted with four visions being developed to create one over-arching ideal society.

Like the previous regions described in this report, this is an intergenerational and ambitious approach, acknowledging that it will take a lot of time and effort.

The eleven challenges for Belgium offer a more mid-term approach, giving the country an opportunity to achieve intermediate results.

The country has set 55 shorter-term objectives to which it can implement policy measures and instruments to meet more quickly. As each of these is further developed, how they are measured against definite quantifiable targets will inform the country as to whether the current measures are adequate or need to be improved upon.

Again, Belgium is taking a 'whole of society approach' rather than the environmental route alone.

Again, since Belgium is of a comparable scale to Ireland some of the elements of its approach may be replicable in Ireland.

[36] OECD *Policy coherence for sustainable development,* OECD, 2018, Paris.

6. Slovenia

Slovenia showed its commitment to a more coherent and centralised policy planning for sustainable development in the *National Development Strategy 2030*, adopted in December 2017.[37]

Slovenia further outlined its long-term development plans in its *Vision of Slovenia 2050.*[38] A Public Financing Act was renewed to ensure that the sustainable development planning (implementation of Slovenia's Development Strategy 2030 through preparation of action plans) was integrated into the budgeting cycle – providing a financial base for action.[39]

The Government Office for Development and European Cohesion Policy (GODC) is responsible for the overall implementation, coordination and monitoring responsibility for the 2030 Agenda. It is supported by the permanent Inter-Ministerial Working Group on Development Policies, which meets on a monthly basis and promotes policy coherence by sharing information and solving policy conflicts. The Group is composed of two representatives from each ministry working as focal points for development policies and the 2030 Agenda, and also includes representatives of the National Statistical Office and the Institution for Macroeconomic Analysis and Development. The Government Office advises the government and manages the implementation of EU documents. This coordination mechanism aims to consider both domestic and international objectives related to SDG-implementation in close collaboration with the Ministry of Foreign Affairs.

The core project team consisted of GODC employees supported by an OECD team of foresight and policy experts. This team was extended through a cross-ministry network of experts, chaired by the GODC State Secretary – the Horizontal Team.[40]

To connect experts in government with wider experts in business and academia, the Futures Group was created, composed of individual experts in a diversity of fields and disciplines.

An ever-widening circle of public engagements aimed at reaching across the whole of society was kick started with a diverse group of 50 participants in an initial, three-day workshop, which set the base for the process of drafting a Vision of Slovenia. Participants were selected to represent a cross-section of Slovenian society. Some of them, along with the representatives of ministries and other experts, were interviewed to provide an initial understanding of the challenges and opportunities for Slovenia.

Defining and drafting the Vision of Slovenia followed the principles of agile and adaptive co-design. The same principles were later also used in setting strategic priorities and goals to avoid prescription of a detailed blueprint and fixed road map.

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[37] OECD, *Policy Coherence for Sustainable Development Country Profiles: Slovenia*. OECD, 2019, Paris.
[38] Government of the Republic of Slovenia, *Implementing the 2030 Agenda for Sustainable Development 2018 Update*, OECD, 2018, Paris.
[39] Government of the Republic of Slovenia, *Slovenia Voluntary National Review on the Implementation of the 2030 Agenda,* OECD, 2017, Paris.
[40] Wilkinson, A and Šooš, T. 'Whole of society futures: growing and new and better future by prototyping Slovenia 2050'. *6th International Conference on Future-Oriented Technology Analysis (FTA) – Future in the Making Brussels, 4-5 June 2018.*

This involved three key phases for implementation: vision, strategy and action as shown in Figure 3.

Figure 3: Phases for developing the Vision of Slovenia 2050
(Source: Slovenian Government)

Phase One: Visioning and Strategic Direction- Setting (0-6 months)
The initial scoping and preparation for the participatory visioning workshop was developed in an iterative process involving the GODC-OECD core team, the Horizontal Group, and the Futures Group.

First, a comprehensive situational assessment was created by using a collated overview of recent analyses contained in relevant OECD reviews and past national strategic plans. This assessment set out the business-as-usual outlook and revealed 'blind spots'. It included a comparative analysis of Slovenia's current policy performance with other EU members. In addition, a 'chorus of voices analysis' – a syntheses of deep-dive interviews with a representative sample of different key stakeholders – provided an initial mapping of different perspectives.

The initial assessment materials were used as one of the inputs to a large-scale workshop, which convened policy shapers from within government and wider society in a strategic conversation aimed at forging a shared vision.

A strategic engagement and communications strategy was also prepared in this phase, which identified the more extensive dialogue needed to further develop and translate the shared vision into strategic priorities and relevant goals. Other outputs of Phase One included:

- A new measurable progress framework comparing OECD well-being frameworks to government institutions in Slovenia.
- A whole-of-government stress-testing capability using an analysis of megatrends, scenarios, and potential disruptors about the future European and global

environment to stress test the robustness of the country's draft vision. This was also used to stress test Slovenia's Development Strategy 2030.

- Long-term analysis provided conditional projections based on modelling by the Slovenian Government and the OECD. These projections provided a sound assessment of where business-as-usual would take the country.

Phase Two: Strategic Planning (18 months)
The key aim in this phase was to translate a whole-of-society vision into **strategic priorities** and **a timeline of actionable 2030 goals and measurable targets**.

This phase involved wider public engagement and regional consultations about the vision. Key stakeholder road shows and workshops with all ministries involved in implementation of the strategy, enabled a more widely shared and meaningful vision to be articulated.

A national, multidimensional measurement framework was developed that included internationally benchmarkable indicators based on the OECD's wellbeing framework. This also ensured links to the SDGs and added new indicators relating to culturally-specific elements of the vision.

A policy gap analysis was produced contrasting projected performance with the new vision and back-casting was used to inform an initial roadmap. The strategic priorities, goals, and targets of the national development strategy were mapped onto existing government programmes of structural reform policies to assess gaps. New structural reform policies were identified. A flexible mix of near-, medium- and long-term modelling was used to clarify trade-offs and synergies, to inform sequencing and to identify budgetary implications.

The resulting strategy was designed to anticipate shifting societal needs, disruption innovation, and sustainability risks. It prepares Slovenian society to flourish in the face of globally connected challenges and to meet its international commitments.

The key deliverables from this phase included:

- Country-specific, multidimensional measurement framework, including a set of indicators.
- Policy gap analysis and roadmap.

Phase Three: Implementation and ongoing adaptation (from October 2017-)
In this phase the national strategy is linked to the functional activities of government to enable effective implementation and to guide monitoring of the strategy on a whole-of-government basis.

Activities include:

- Building implementation capacity. Setting an 'operational manual' to meet objectives by clarifying the roles and responsibilities for individual ministries. Securing adequate resources for each of the strategy's actionable goals.

- Supporting the development of an appropriate whole-of-government management system for implementing the vision and strategy through the governmental programmes and/or wider collaborations, involving public-private-civic sector actions.
- Developing an evaluation framework based on national goals as well as international benchmarking and best practices.

The key deliverable from this phase will be a valuation framework based on international benchmarking and best practices.

The three phases are aimed to integrate intergenerational vision, long term strategy and short term actions, as shown in Figure 4.

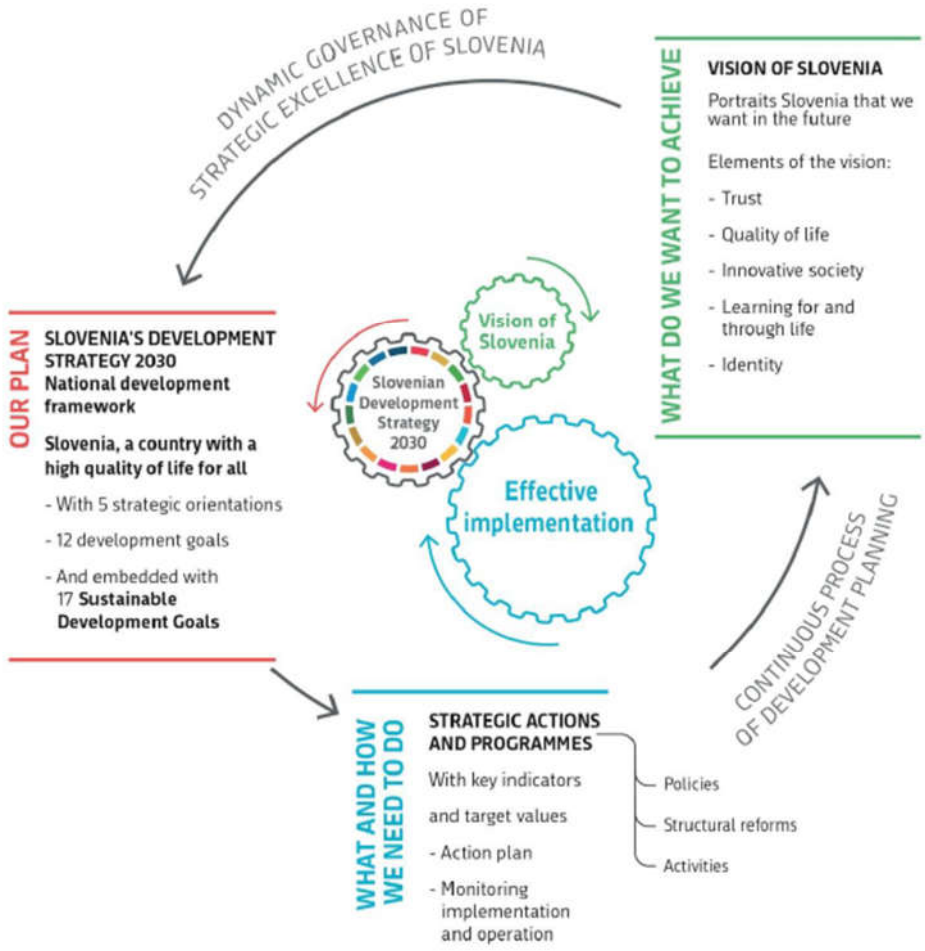

Figure 4: Process for implementing the Vision of Slovenia 2050 (Source: Slovenian Government)

In their analysis of the Vision of Slovenia, 2050, Wilkinson and Šooš state that the initiative works with 'the five principles of realistic hope'[41]:

[41] Ibid.

1) Diversity: the shift from one-to-many and many-to-one consultation processes to many-to-many participation; being open to stretching beyond the comfort zone of proven solutions in policy making; recognising that inclusiveness generates new ideas.

2) Dialogue: the art of listening. Strategic dialogue is about people talking with each other rather than discussing a report. The quality of strategic conversation is key to empathy.

3) Experimentation: today's complex and connected challenges are not solvable all in one go. Adaptation is needed. This requires both tolerance for learning with failures and persistence in making iterative progress towards goals.

4) Systems thinking: it is vital to take interconnectedness into account. Presenting a vision as a new social value creation system supports a deeper shared meaning, enables learning about the 'whole system' and can be used to find more and better places to intervene.

5) Future framing: being positive and open to learning by working with more than one future; using disciplined imagination for good design. Humble optimism is necessary to work from within this space.

Analysis

A description of how Slovenia is bringing its 2050 vision to a series of strategic priorities and a timeline of actionable 2030 goals and measurable targets is described above. This process is underway but not yet complete.

It involved three phases:

- Phase One: Visioning and Strategic Direction- Setting (0-6 months)
- Phase Two: Strategic Planning (18 months)
- Phase Three: Implementation and ongoing adaptation (18 months-completion)

In terms of societal engagement in the design of the vision, Slovenia had 50 participants representing a cross-section of Slovenian society in an initial, three-day workshop, which set the base for the process of drafting a Vision of Slovenia.

This process may be replicable for Ireland but the Slovenia 2050 vision appears to have a far broader scope than the more environmental/sustainability plans and processes described for other countries in this report.

7. Malta

Introduction

In 2018, the Government of Malta set out its vision for sustainable development for 2050.[42, 43,44] In its introduction, the priorities of Malta and the world are laid out, including issues such as global population growth, an ageing population in Europe, global economic growth, poverty, resource depletion, and mass migration (of particular concern to Malta). Such issues contextualise the need for long term sustainable development:

> *All these factors raise questions about the future of education, employment, the response to demographic changes and climate change, social equality and justice. Malta's Sustainable Development Vision for 2050 therefore sets out our aspirations and priorities for future sustainable development. This roadmap is to be followed in decision making and in drawing-up national policies and programmes.*

At the beginning, the vision lays out the current baseline situation for the country, including strong export-driven economic growth, low inflation and competitiveness, a strong tourism sector, improved R&D performance, good employment, a problem regarding early school leaving rates, low poverty except among migrant workers, relatively good health outcomes, a good environmental legal framework and improved energy efficiency along with a growth in renewable energy, improvements in transport and waste management and continuing water scarcity.

Four characteristics

Malta's sustainable development vision is based on four key normative governance principles:

Long term	*Sustainable development calls for long-term action to pursue intra- and inter-generational equality*
Integration	*Sustainable development calls for coordination and integration of economic, social and environmental polices across and between different levels of governance*
Participation	*Sustainable development calls for the incorporation of stakeholders into the decision-making process*
Reflexivity	*Sustainable development calls for reflexive processes based on continuous reflection and policy learning cycles*

Themes and Principles

The themes and principles of Malta's 2050 vision are linked to the SDGs as follows:

[42] Government of Malta, *Malta's Sustainable Development Vision for 2050*, Ministry of Environment, 2018, Valetta.
[43] Ministry for the Environment, Sustainable Development (MESDC), *Sustainable Development Strategy for Malta for 2050*, MESCD, 2018, Valetta.
[44] Government of Malta, *Voluntary National Review (VNR) on the implementation of the 2030 Agenda,* Ministry of Environment, 2018, Valetta.

Theme	Principle	SDGs
Enhancing economic growth	Circular consumption and production patterns	7, affordable and clean energy; 9, industry, innovation and infrastructure; 11 sustainable cities and communities; 12, responsible production and consumption; 14, life below water; 15, life on land
	Transition towards a low-carbon emission economy	7, affordable and clean energy; 9, industry, innovation and infrastructure; 11, sustainable cities and communities; 12, responsible production and consumption; 13, climate action; 14, life below water; 15, life on land
	Sustainable mobility	8, decent work and economic growth; 10, reduced inequalities; 11 sustainable cities and communities
	Transition towards a digital economy	8, decent work and economic growth; 9, industry, innovation and infrastructure;
	Creation of more high-skilled and high value-added jobs	4, quality education; 8, decent work and economic growth; 11, sustainable cities and communities
	Increased investments in research and innovation	8, decent work and economic growth; 9, industry, innovation and infrastructure;
Safeguarding our environment	Transition towards low-carbon energy	7, affordable and clean energy; 9, industry, innovation and infrastructure; 11, sustainable cities and communities; 12, responsible production and consumption; 13, climate action;
	Sustainable buildings and urban development	9, industry, innovation and infrastructure; 11, sustainable cities and communities; 12, responsible production and consumption;
	Protecting, conserving and enhancing natural capital	2, zero hunger; 6, clean water and sanitation; 12, responsible production and consumption; 14, life below water; 15, life on land

Social cohesion and wellbeing	Combating poverty and social exclusion	1, no poverty; 2, zero hunger; 5, gender equality; 8, decent work and economic growth; 10, reduced inequalities; 11 sustainable cities and communities; 16, peace, justice and strong institutions
	Fair and inclusive labour market	1, no poverty; 2, zero hunger; 5, gender equality; 8, decent work and economic growth; 10, reduced inequalities; 11, sustainable cities and communities; 16, peace, justice and strong institutions
	High quality education and training	4, quality education; 8, decent work and economic growth; 9, industry, innovation and infrastructure; 11, sustainable cities and communities
	Good health and wellbeing	1, no poverty; 2, zero hunger; 3, good health and well-being
	Building safe and integrated communities	1, no poverty; 2, zero hunger; 5, gender equality; 10, reduced inequalities; 11, sustainable cities and communities; 16, peace, justice and strong institutions

Implementation
Malta aims to ensure sustainability by actions at three levels:

1) The Vision
2) The Strategy: a set of strategic goals for sustainability
3) The Action Plan: actions such as policies, reforms, projects and initiatives with clear responsibilities, timelines and the allocation of required resources.

In order for sustainability to happen, Malta also requires:

- High level political commitment
- Clear assignments of responsibilities across Government
- Inter-Ministerial co-ordination
- Local councils' engagement
- Stakeholders' engagement
- Public engagement and awareness

In terms of specific actions for each principle, the following are planned:

Principle	**Actions**
Circular consumption and production patterns	Better waste management; Responsible and reuse of resources; Green public procurement.
Transition towards a low-carbon emission economy	Drastic cuts in emissions; sustainable energy; reduced emissions from transport;
Sustainable mobility	More public transport; reduced traffic congestion; better freight logistics;
Transition towards a digital economy	Affordable and accessible digital services; open government and e-democracy; using the European Digital Single Market;
Creation of more high-skilled and high value-added jobs	New IT related jobs; green jobs; changing educational systems; continuous professional development.
Increased investments in research and innovation	Government support for research; public and private investment in research.
Transition towards low-carbon energy	More sustainable and renewable energy systems; connection to the European gas grid; exploitation of solar energy (photovoltaic and solar water heaters), heat pumps, biofuels, and energy recovery from waste; greater use of ICT.
Sustainable buildings and urban development	Commitment of the construction industry to improve performance; public private partnerships; rewards and penalties; innovative financing tools; regular building audits.
Protecting, conserving and enhancing natural capital	Enhancing the role of the relevant authority; active co-operation between all parties for biodiversity; complete the Natura 2000 designation process; better mapping and assessment of ecosystems; mainstream and integrate biodiversity conservation and sustainable use into other policy areas; encourage education; actions on soil and water protection; sustainable agriculture, fisheries and aquaculture.
Combating poverty and social exclusion	Increasing the activation rate with particular focus on vulnerable groups; making work pay through quality employment opportunities; improving educational and training services; facilitating greater socio-economic mobility; curtailing fraud in social benefits and taxes; addressing regional and geographical-based imbalances and disadvantages by promoting community regeneration; promoting active ageing; promoting a more inclusive cultural framework and active cultural participation;

	greater availability of adequate and affordable housing; improving access, quality, adequacy and sustainability of social welfare, health and long-term care; and promoting a 'rights-based' rather than a 'charity-based' approach to service provision.
Fair and Inclusive labour market	Implementing the concept of sustainable working lives, which allows employees to work longer and retire healthy; facilitating workplaces to foster a physical and mental health protective environment and occupational health and safety; improving system of flexicurity and consolidating and implementing further family-friendly measures; implementing measures aimed at mainstreaming the concept of equal pay for equal work across all sectors; promoting the increase inclusion of marginalised and underrepresented groups in the labour market; consolidating legislative structures to fight precarious working conditions, labour market exploitation and any threats to the employees' personal development, without making the labour market too rigid; supporting further inactive persons to get the skills they need to re-enter and remain in employment; consolidating and implementing further support mechanisms for low-income earners; facilitate the promotion of mobility and de-segregation in the labour market; promoting private-public-social partnerships and cooperatives including social enterprises.
High quality education and training	Including lifelong learning and training in educational programmes at all levels; developing knowledge and skills for life and work, and empowering citizens to use the latest digital technologies; promoting the concepts of sustainable development and active citizenship as educational principles; ensuring efficiency and quality at all levels of education; developing practical and technical knowledge and skills in order to improve employability; encouraging lower-educated people and other vulnerable and marginalised groups to participate in education and learning in order to ease the transition into and survival in the labour market, reducing the risk of social exclusion and providing for a high quality of life; linking the education system to the economy in accordance with the needs of the labour market.
Good health and wellbeing	Respond to increasing demand and challenges posed by the demographic changes and epidemiological trends focusing on course of life, children, elderly and vulnerable groups; increase equitable access, availability and timeliness of health and social services, medicines and health technologies; improve quality of care by ensuring

	consistency of care and having qualified health personnel supported by a robust information systems; designing, developing and evaluating policies towards a sustainable health system targeting human resources, financing mechanisms, entitlement criteria for care and organisation of care delivery whilst improving governance and empowering future leadership for health and wellbeing to influence national decisions through whole-of government and whole-of-society approaches.
Building safe and integrated communities	Respect for all human rights, freedoms, and the rule of law; every member of society, no matter what his or her economic resources, political status or social standing, must be treated equally under the law; violators of human rights should be brought to justice; the judiciary which serves to protect just societies must be impartial, accountable and inclusive; maintaining the security of all individuals and their living environment; all members of society are able and motivated to participate in civic, social, economic and political activities as well as participation in decision-making and policy formulation processes; universal access to public infrastructure and facilities such as community centres, recreational facilities, public libraries, resource centres with internet facilities, well maintained public schools, clinics, water supplies and sanitations; equal access to public information in order to make popular participation possible with well-informed members of society; equity in the distribution of wealth and resources; socio-economic policies should be geared towards managing equitable distribution and equal opportunities; tolerance for and appreciation of cultural diversity; mainstreaming cultural inclusion throughout all public services (schools, healthcare facilities, correctional facilities, and nonculturally related places).

Analysis

Again Malta is taking a three-tiered approach to sustainable development. A long-term inter-generational vision of the type of country it wants to be in 2050.

Three main themes based on the three pillars of sustainable development – economy, environment, society – underpin the principles upon which actions are to be taken. These mirror the United Nations Sustainable Development Goals (SDGs).

Malta has a long list of actions to be taken, linking each one to the principles.

Malta's full implementation of these actions and a set of ambitious measurable, quantifiable targets, which are reported upon regularly, will be required for Malta to achieve its 2050 vision.

8. Denmark

Introduction – Recent Trends and Developments

Denmark has been a top performer in environmental protection for many years. It is also one of the leading countries in the world for most of the UN's Sustainable Development Goals (SDGs).[45] It has decoupled its greenhouse gas (GHG) and major air pollutant emissions from economic activity and ranks among the OECD countries with the lowest energy intensity.

Renewable energy has grown over the last decade, from 15% to 35% of total primary energy supply and the country aims to increase the share of renewables in gross final energy consumption from 30% in 2020 to 55% by 2030.

The country aims to achieve 100% green electricity by 2030 and zero net GHG emissions by 2050. Achieving this 2050 goal will require decarbonising sectors beyond energy, such as transport and agriculture. Farmland takes up more than 60% of Denmark's surface area, making the agriculture sector a key player in the protection of the environment. Denmark still faces excessive levels of nitrogen discharges into its coastal waters, of which only 1.7% are in good ecological status.

Despite its commitment to a circular economy, total waste generation in Denmark rose by 30% between 2010 and 2016. Since 2007, Denmark has had the highest levels of municipal waste per capita in the OECD, with 785kg per inhabitant in 2017.

Since 2007, Denmark's 98 municipalities have been increasingly responsible for aspects of environmental management. However, environmental rules have not always been applied in comparable ways across the country.

Denmark has a small open economy with gross domestic product (GDP) per capita well above the OECD average. Income inequality in Denmark is among the lowest in the OECD. Its population enjoys a high standard of living and a high life satisfaction.

On the environmental front, Denmark has decoupled greenhouse gas (GHG) emissions from economic growth since 2005. It also made impressive progress towards decarbonising its energy sector: its energy intensity and carbon intensity are among the lowest for any International Energy Agency country. Denmark is a top performer in the share of wind power in electricity generation.

In 2017, the Danish government approved an action plan that translates the Sustainable Development Goals (SDGs) into five priority areas: prosperity, people, planet, peace and partnerships. The action plan contains national targets and indicators to monitor progress in achieving them. A first annual progress report was published in 2018 and a more comprehensive status report will be prepared every four years.

Relative to the OECD average, Denmark outperforms other countries on most SDGs. It has already met 26 of the 94 SDG targets for which indicators are available, and is close to achieving many others. Key challenges on the road to 2030 in Denmark are linked to the greening of agricultural systems, material consumption levels and ecosystem conservation.

[45] OECD, *OECD Environmental Performance Reviews: Denmark, 2019*. Paris, OECD, 2019.

Energy Vision for 2050

It is in the area of energy – electricity in particular – that Denmark stands out. Its energy policy is laid out in broad commitments called Energy Agreements. The 2012 Energy Agreement set the framework for 2012-20 and the 2018 Energy Agreement for 2020-24. Both support Denmark's long-term vision of becoming a carbon-neutral society by 2050, a goal first set in 2011 in the *Energy Strategy 2050*.[46] A key aim of the Danish government is independence from coal, oil and gas by 2050. With this move to fossil fuel independence, Denmark will also satisfy two other important ambitions:

- Denmark will maintain a high security of supply and ensure stable, affordable energy supply. Security of supply will be a key challenge in a future, where the global demand for energy is growing in line with population growth and economic growth, and where the remaining oil and gas resources will be concentrated in few, and often politically unstable, countries.
- Denmark will contribute to limiting global climate change as agreed in Copenhagen 2009 and in Cancún 2010. Therefore, Denmark must contribute to meeting the EU objective to reduce greenhouse gas emissions in 2050 by 80-95% compared with 1990 levels. This requires the transition to an economy with low greenhouse gas emissions.

Intermediate goals include reaching 30% of renewable energy resources in gross final energy consumption by 2020 (reached in 2016) and 55% by 2030. Denmark also committed to phase out electricity production from coal by 2030. The 2018 Energy Agreement is a key step for Denmark to meet its 2050 target. Prior to this, the Danish Energy Agency estimated that without additional policies, the share of renewables would stagnate and fossil fuel consumption and GHG emissions would increase after 2020.

Denmark's energy policy may be viewed as comprising three stages (up to 2020, from 2020-2030, and from 2030-2050) as show in Table 1, with the ultimate vision of having a carbon-neutral society in 2050.

[46] Danish Ministry of Climate and Energy, *Summary: Energy Strategy 2050 – from coal, oil and gas to green energy*, DMCE, Copenhagen, 2011.

	2020	2030	2050
Overall goal			Carbon-neutral society
Share of renewables in gross final energy consumption	30%	55%	
Renewables in electricity consumption		More than100% 90% share of district heating based on sources other than coal, oil or gas	
Renewables share in the transport sector	10%		
Wind energy share in domestic electricity supply	50%		
Reduction in gross energy consumption in relation to 2010	7.6%		
Coal in electricity production*		Phased out	

Table 1: Stages to Denmark's energy policy
(Source: Danish Government)

Four Principles for the Transition
Denmark has laid out four principles upon which the transition to a fossil fuel free society is based upon:

1. Cost effectiveness: The transition must be cost effective, with initiatives providing maximum security of supply and the highest possible reduction in the use of fossil fuels. This means that focus is not on large-scale use of technologies which require high subsidies. Instead, for these technologies, focus is on research, development and demonstration, which in the long term can make them competitive, at lower levels of subsidy.
2. Minimal impact on public finances: The distribution of benefits and costs in connection with the transition must not burden public finances. Therefore, the transition is fully financed, with expenditures primarily covered by consumers of energy (companies as well as households).
3. Retaining competitiveness: The transition needs to take the competitiveness of Danish businesses into account. This requires that companies know the long-term framework within which they must operate, and must ensure that energy costs do not increase significantly.
4. Full utilisation of international frameworks: The transition must make full use of the opportunities of a globalised world and of ever closer EU cooperation. The goal is not a self-sufficient Denmark. On the contrary, Denmark must continue to exploit all the advantages of being part of an international energy market.

The strategy must also ensure that the transition does not undermine nature or environmental assets. This implies for instance, that the infrastructure must take account

of nature and people's opportunities to enjoy it. It also entails a sustainable use of biomass resources.

Three Tracks of Policy Initiatives
Denmark's Energy 2050 strategy includes a wide range of ambitious energy policy initiatives in three streams or tracks:

- Initiatives with an immediate effect on the Danish energy system (since 2011) (track 1),
- Initiatives that plan and prepare the transition to fossil fuel independence (track 2) and
- Initiatives directed towards the development and improvement of energy technologies (track 3).

Specific initiatives in each track include:

Track 1: Conversion Track		
Renewable energy • Call for tenders on 600MW offshore wind farm at Kriegers Flak • Call for tenders on 400MW smaller near shore offshore wind turbine installations • Initiatives for more onshore wind power, aiming at an additional 500MW • Fuel shift from coal to biomass at large-scale heat and power plants via revised rules on pricing of heat supplies • Allowing small-scale CHP-plants based on natural gas to shift to biomass	• Improved framework conditions for biogas production • A 10% biofuel obligation in the transport sector by 2020 • Continuation of the Wind Turbine Secretariat **Efficiency improvements** • Energy saving obligations by energy companies to target private homes and businesses • Strengthening of energy saving obligations by energy companies	• Future-proof efficiency standards for building components to ensure houses which are more energy efficient • No new oil boilers in new buildings from 2012 and in the existing building stock from 2017 • Market promotion of RE-based alternatives to oil and gas heating • Promotion of new buildings with very low energy consumption • Enhanced energy saving efforts in the public sector.

Track 2: Planning and Preparation Track		
Renewable Energy • Funds for strategic energy planning in municipalities with a view to better utilisation of local resources, including district heating • Analysis of the use and utilisation of biomass for energy • More efficient tendering of offshore wind turbines • Analysis of possibilities to locate turbines closer to roads and railways. **Efficiency improvements**	**Intelligent energy system** • New international transmission grid in connection with offshore wind farm at Kriegers Flak • Analysis of the need to expand international transmission grid • Roll-out of intelligent electricity meters • Strategy for the promotion of smart grids • Analysis of the regulation of the future gas structure. **Transport** • Technology assessment in	• Push for EU harmonisation and standardisation of technologies for electric cars. **Cross-sectoral and international** • Strategic review of existing regulations of the Danish electricity supply sector • Analysis of the existing subsidy and tax system • Push for an ambitious international climate and energy agenda • Push for a long-term vision of an EU independent of fossil fuels • Work to raise the 2020 EU

• Tighter energy efficiency standards for new buildings in 2015 and 2020 • Establishing a model for the phase out of natural gas in individual heating • Further tightening of EU efficiency standards on the energy efficiency of appliances, products and existing buildings.	order to support the right framework conditions for new transport technologies • Fund to promote establishment of recharging stations for electric cars • Further efforts to tighten EU standards on vehicle energy efficiency and CO_2 emissions	greenhouse gas reduction target to 30% • Work to double EU energy research funding.

Track 3: Technology Development Track		
Research, development and demonstration • Enhanced prioritisation and coherence in research, development and demonstration in the climate and energy area • Fund for demonstration of large heat pumps in the district heating sector	• Fund for feasibility studies regarding geothermal projects • Continued support for small electricity-producing RE technologies • Fund for demonstration projects involving solar heating • Establishment of larger test schemes	• Partnerships with enterprises and research institutions on the development of cleantech solutions • Analysis of future demand for researchers and university graduates within the green area • Technology assessments in a wide range of areas.

Draft Integrated National Energy and Climate Plan

In December 2018 Denmark submitted a Draft Integrated National Energy and Climate Plan to the European Commission.

In this the Danish Government reiterated its long-term goal of a climate neutral society by 2050, 'which means that at least as much greenhouse gas as emitted will be absorbed'.[47]

It also laid out several mid-term targets for 2030 such as its commitment to 'a reduction in non-ETS emissions in the period 2021- 2030, rising to 39% by 2030 relative to 2005'; along with 'a 55% renewables share in 2030 in Denmark'.

Some key initiatives in the plan include:

- Phase out the sale of new petrol and diesel cars in 2030.
- Zero carbon emissions and zero air pollution from buses in Denmark's cities by 2030.
- A climate- and environmentally-efficient agricultural sector, with a strong focus on research.
- Clean air in big cities through stricter environmental zones.
- Lower emissions from industry and housing.
- Behavioural campaign with climate labelling.
- Research efforts to develop carbon capture and storage technologies for use in Denmark's fields and forests.

[47] Government of Denmark, *Denmark's Draft Integrated National Energy and Climate Plan,* Copenhagen, 2018.

The plan also lays out the specific targets across several topics that have to be reached by Denmark on this journey towards 2050, allowing the country to measure its progress.

The plan further commits Denmark to 38 specific actions on transport, the climate and air proposal including the following initiatives:

The last petrol and diesel car will be sold in 2030
C1) Phase-out of sales of new petrol and diesel cars in 2030, and of new plug in hybrid cars in 2035.
C2) A commission for the transition to green cars must show the way.
C3) No registration tax in 2019 and 2020 on green cars priced below 400,000 DKK.
C4) Lower taxation on green company cars.
C5) Charging a low-emission car must be faster.
C6) Greater powers for municipalities to grant parking discounts for low emission cars.
C7) Ensuring parking spaces with charging stations for low-emission cars.
C8) Denmark's municipalities can grant low-emission cars permission to drive in bus lanes.
C9) Research into the dynamics between electric cars and the energy system.

Cleaner transport in cities and the countryside
C10) An end to carbon emissions and air pollution from buses in Denmark's cities by 2030 – starting with the first step in 2020, where new buses must be CO_2-neutral.
C11) Clean air in Denmark's big cities – bringing environmental zones up to date.
C12) Petrol and diesel out of taxi operations by 2030.
C13) Benefits for green taxis.
C14) Higher scrapping premium for old diesel cars.
C15) Putting an end to NOx fraud.
C16) All new asphalt on national roads must be climate-friendly, if an ongoing pilot project can confirm the expected effects and durability of the asphalt.
C17) More biofuel in petrol and diesel.

More environmentally-friendly shipping at sea and in port
C18) More environmentally-friendly cruise tourism in the Baltic Sea.
C19) Monitoring of sulphur emissions in Danish waters.

An efficient and modern agricultural sector
C20) Less ammonia in the air.
C21) Improvement of biogas plants.
C22) Air- and climate-friendly technology in pig farms.
C23) Stronger research efforts in agriculture.
C24) Promotion of precision agriculture.
C25) Land distribution fund focused on environment, climate and nature.
C26) Partnership with the agricultural sector.

Green transition of housing and industry
C27) Old wood-burning stoves must be scrapped in connection with transfers of home ownership.

C28) Scrapping premium for old wood-burning stoves.
C29) Stricter regulation of climate-damaging gases in cooling systems.
C30) Strategy for development of the natural gas system.

We can all play a part in helping the climate
C31) Behavioural campaign with climate labelling.
C32) Climate activities for Danes.

Towards a climate-neutral Denmark by 2050
C33) Increased research into carbon dioxide removal and storage.
C34) Use of carbon dioxide removal in climate efforts.
C35) Analysis to improve the monitoring and accounting of carbon dioxide storage in soils and forests.

An impactful climate effort
C36) Annulment of carbon dioxide allowances.
C37) More funding for climate efforts in 2026-2030.
C38) Ongoing follow-up on Denmark's efforts.

Analysis
In the case of Denmark, the vision for 2050 is energy related only and has one specific aim: to be carbon neutral.

To achieve that there are short-term (immediate), medium-term and long-term actions in place.

These are based on four principles built around cost effectiveness and the international energy market.

Policies have been put in place to support the actions being carried out and Denmark has already achieved great success in some areas of its energy framework and its sustainability. These could be replicable in Ireland.

9. EU and United Nations Policies and Visions

The EU Sustainability Vision for 2050

In 2013, the European Union adopted the **Seventh Environment Action Programme (7th EAP),** endorsing a long-term sustainability goal and converting it into a vision as far ahead as 2050.[48]

> *In 2050, we live well, within the planet's ecological limits. Our prosperity and healthy environment stem from an innovative, circular economy where nothing is wasted and where natural resources are managed sustainably, and biodiversity is protected, valued and restored in ways that enhance our society's resilience. Our low-carbon growth has long been decoupled from resource use, setting the pace for a safe and sustainable global society.*[49]

The vision reflects a greater recognition that the prosperity, health and well-being of European citizens are intrinsically linked to a resilient and healthy natural environment both in Europe and on a planetary scale, since environmental degradation elsewhere can have negative effects in Europe in many ways. The vision builds on the understanding that the ways we live, exchange, consume and produce are deeply interconnected with the environment through a complex web of interrelationships relating to what is extracted from it (e.g. natural resources, energy), what is released into it (e.g. pollutants, chemicals) or what is disrupted in its functioning (e.g. climate, ecosystems, nutrient cycles).

The 7th EAP was one of the key policy frameworks to achieve this overall goal for the EU. Beyond setting its 2050 vision, it provides a more concrete overarching framework for shorter-term objectives and targets the time horizon 2020-2030. This is shown in Figure 5.

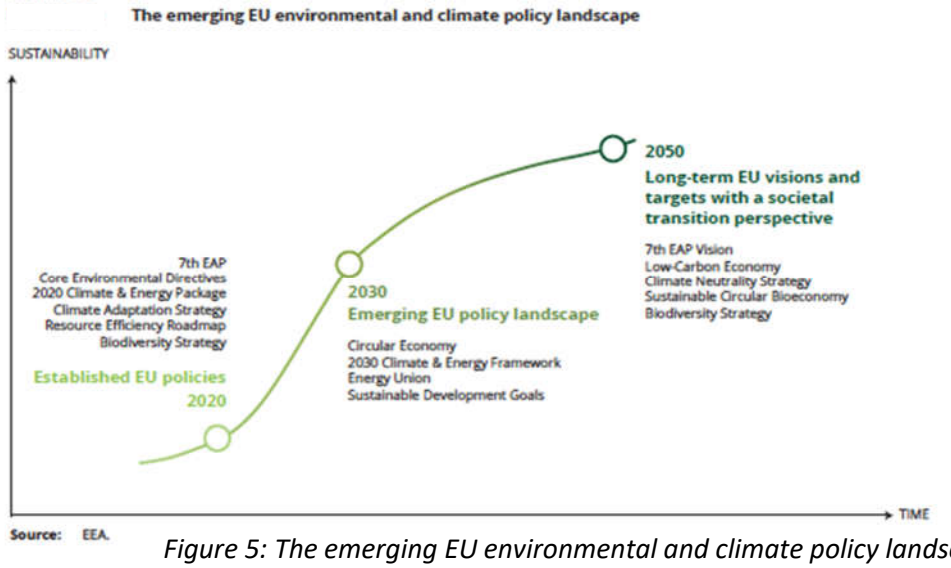

Figure 5: The emerging EU environmental and climate policy landscape (Source: European Commission)

[48] European Environment Agency, *The European Environment – state and outlook, 2020: Knowledge for transition to a sustainable Europe.* 2019, EEA, Copenhagen.

[49] EC, *Living well, within the limits of our planet: 7th EAP — the new general Union Environment Action Programme to 2020*, European Commission, 2013, Brussels, Belgium.

Addressing persistent environmental and climate challenges, such as climate change, the loss of biodiversity, the degradation of ecosystems, the unsustainable management of natural resources or the adverse effects of pollution on human health, will require fundamental changes in society and economy. By setting a distant time horizon, the vision recognises that important and sustained efforts will be required over several decades. There are no 'short term' fixes to the environment and the planet – a long-term approach is required, globally and on the scale of individual countries.

The European Commission published a proposal for an **8th Environment Action Programme (EAP)** on 14 October 2020.[50] This was in response to the publication of the EEA's *The European Environment – State and Outlook 2020 (SOER)* which made for sobering reading. It found that the current environmental, climate and sustainability challenges are of an unprecedented scale and urgency, requiring immediate and concerted action and systemic solutions. Biodiversity loss and ecosystem services degradation, climate change and its impacts, unsustainable use of resources, pollution and associated risks to human health and well-being, nature, ecosystems, and the economy all require decisive further action in the EU and globally.

The 8th EAP supports the environment and climate action objectives of the **European Green Deal**. [51] It provides an opportunity for the EU as a whole to reiterate its commitment to the 7th EAP's 2050 vision: to ensure wellbeing for all, while staying within the planetary boundaries. It calls for active engagement of all stakeholders at all levels of governance, to ensure that EU climate and environment laws are effectively implemented. It also forms the EU's basis for achieving the United Nation's 2030 Agenda and its Sustainable Development Goals.

Building on the European Green Deal, the 8th EAP has the following six priority objectives:

- Achieving the 2030 greenhouse gas emission reduction target and **climate neutrality by 2050**
- Enhancing **adaptive capacity**, strengthening **resilience** and **reducing vulnerability to climate change**
- Advancing towards a **regenerative growth model**, decoupling economic growth from resource use and environmental degradation, and accelerating the transition to a **circular economy**
- Pursuing a **zero-pollution ambition**, including for air, water and soil and protecting the health and well-being of Europeans
- Protecting, preserving and restoring **biodiversity**, and **enhancing natural capital** (notably air, water, soil, and forest, freshwater, wetland and marine ecosystems)
- **Reducing environmental and climate pressures** related to production and consumption (particularly in the areas of energy, industrial development, buildings and infrastructure, mobility and the food system)

[50] https://ec.europa.eu/environment/pdf/8EAP/2020/10/8EAP-draft.pdf
[51] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

The EU's environmental approach is also aligned with other long-term, global sustainability frameworks which have been endorsed by the EU and complement the proposed 8th EAP vision: the 2030 Agenda for Sustainable Development, the UN Sustainable Development Goals (SDGs) and the Paris Agreement on Climate Change.

The 2030 Agenda, The Sustainable Development Goals and *The Paris Agreement*

In developing its 2050 sustainability vision, the EU is in line with other international developments.

In 2015, world leaders adopted the 2030 Agenda for Sustainable Development, along with a set of 17 Sustainable Development Goals (SDGs) (see Figure 6) and 169 associated targets.[52] Universal in scope, the Agenda applies to all countries at all levels of development, taking into account their 'different capacities and circumstances'. The setting of these goals built on the experience of the Millennium Development Goals (MDGs), which, in 2000, committed world leaders to combat poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women.[53]

Following up on the Rio+20 Conference in 2012, the 2030 Agenda expanded the scope of the MDGs to address poverty eradication along with the economic, social and environmental dimensions of sustainability, as well as underlying issues related to institutions, governance, the rule of law, peace and international collaboration. In particular, the UN has stressed that the agenda should be viewed as an indivisible whole, in which all targets — be they of an economic, social or environmental nature — are equally important.

Figure 6: The Sustainable Development Goals (Source: UN)

[52] UN, *Resolution adopted by the General Assembly on 25 September 2015. Transforming our world: the 2030 agenda for sustainable development* (A/RES/70/1).
[53] https://www.un.org/millenniumgoals/

Many of the goals in the SDGs have a strong environmental dimension and have dedicated targets to measure progress on core environmental issues. In particular, SDG 13 promotes climate action, while SDGs 14 and 15 aim to advance the conservation of marine and terrestrial ecosystems and the sustainable use of their resources. Environmental sustainability is also sought in relation to agriculture (SDG 2), health (SDG 3), water (SDG 6), energy (SDG 7), tourism (SDG 8), infrastructure and industry (SDG 9), cities (SDG 11) and consumption and production patterns (SDG 12). Overall, 41 of the 169 targets address the quality of the physical and natural environment either directly or indirectly.[54]

Instrumental in shaping the 2030 Agenda, the EU has expressed its ambition to play, together with its Member States, a leading role in its implementation.[55] In 2016, the European Commission outlined its strategic approach and committed itself to integrating the SDGs in both its internal and its external policies. The first steps included the mapping of EU policies and actions for each SDG[56], the publication of an annual monitoring report on the EU's progress towards SDGs on the basis of 100 indicators, and the setting-up of a multi-stakeholder platform to support and advise the European Commission. The most recent analysis published in December 2020 indicates that many countries are leading the way in achieving the SDGs, but that the focus of environmental action varies between countries and mechanisms to support SDG progress in Europe are diverse.[57]

In January 2019, the European Commission adopted the reflection paper *Towards a Sustainable Europe by 2030* to launch a forward-looking debate among EU citizens, Member States and other stakeholders on how to best progress on the SDGs.[58]

Just months after the adoption of the 2030 Agenda, the 21st Conference of the Parties (COP 21) of the United Nations Framework Convention on Climate Change (UNFCCC) was held in Paris, on 12 December 2015. In total, 196 countries adopted the first-ever universal, legally binding global climate agreement, commonly referred to as *The Paris Agreement*, with the aim of strengthening the global response to the 'urgent and potentially irreversible threat [of climate change] to human societies and the planet'.[59] This responds in particular to the scientific evidence compiled and reviewed by the Intergovernmental Panel on Climate Change (IPCC).

The Paris Agreement sets the ambitious goal to '[hold] the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels'. Parties also agreed to '[increase]

[54] European Environment Agency*, The European Environment – state and outlook, 2020: Knowledge for transition to a sustainable Europe.* 2019, EEA, Copenhagen, p58.
[55] EC, *In-depth analysis in support of the Commission Communication COM(2018) 773: A clean planet for all — a European long-term strategic vision for a prosperous, modern, competitive and climate neutral economy,* 2018, European Commission.
[56] EC, *Behavioural insights applied to policy: European report 2016, Joint Research Centre Report*, Publications Office of the European Union, 2016, Luxembourg.
[57] See also: https://www.eea.europa.eu/themes/sustainability-transitions/sustainable-development-goals-and-the
[58] EC, *Reflection Paper: Towards a Sustainable Europe by 2030*, 2019, European Commission.
[59] United Nations *Framework Convention on Climate Change, Paris Agreement (Decision 1/CP.21*), 2015, UNFCCC, Bonn.

the ability to adapt to the adverse impacts of climate change'.[60] To accomplish these goals, the Parties aim to reach a global peak in greenhouse gas (GHG) emissions as soon as possible and to achieve net zero emissions in the second half of this century.

Analysis

International bodies through the EU and the United Nations have developed a long-term vision for the planet and its regions. They have set up indicators and targets to measure success or failure in reaching towards that vision. It is recognised that short-term, targeted and immediate actions are also needed to achieve both mid-term (2030) and long-term (2050) success in the protection of the planet and the well-being of its peoples. The three pillared approach to sustainability is also taken, incorporating environmental, social and economic concerns.

Given that these three-pronged approaches are being taken on an earth-based scale, it may also be suitable that individual countries use a similar modus operandi. Such an approach has been analysed for several countries in the preceding sections.

[60] Ibid.

Conclusions and Recommendations

In the recently published EPA report, *Ireland's Environment 2020 - An Assessment*[61], the need for an overarching environmental policy for the country was identified, as follows:

> *A key message from our assessment is that Ireland needs an overall integrated national environmental policy position, or it risks existing environmental protection measures failing or competing with each other. Such a policy position could set out an ambition for protecting Ireland's environment in the short, medium and long-term with the aim of having a clean, healthy environment, that is valued and protected by all. It should be a national vision to which all government departments, agencies, businesses, communities and individuals can sign up to play their part in protecting our environment.*

Ireland now requires a single long-term vision for its environmental path into the future; one which all government departments, agencies, businesses, communities and individuals can get behind and support.

In this report, the authors briefly outline the long-term visions developed and acted upon by Sweden, Scotland, the UK, Finland, Belgium, Slovenia, Malta, Denmark, the EU, and the United Nations. They also outline the different approaches taken and the different scales and levels of success achieved. Some visions are more recent; these have just begun to be implemented and cannot yet be fully assessed in terms of success.

Some of these countries offer best practice in the approach taken, whether in a broader scope encompassing sustainable development, to simply protect the environment, or for single issues (such as energy). All of these have a simple long-term inter-generational vision – usually focusing on a specific year, such as 2045 or 2050. They have a medium-term set of policy approaches and strategies feeding into the overarching vision – these are usually built upon a series of environmental or sustainable development principles and often look at what can be achieved by 2030. These are supplemented by many short-term, focused and immediate actions on the ground, in several different urgent environmental areas. These short-term actions are in place to achieve specific and measurable quantifiable targets which are monitored regularly and reported upon.

Approaches that have been well developed and are well underway by countries with a long and successful history of environmental protection are of special interest and may be of specific value to Ireland in terms of replicability, such as those in, Sweden, Scotland, Belgium and Finland. The approach of the United Kingdom is also notable in the way that the vision is specifically focused on environmental and well-being issues and there is no confusion as to how it is interlinked with the SDGs – it stands on its own merits.

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[61] Brendan Wall, Annette Cahalane and Jonathan Derham (eds) *Ireland's Environment – An Integrated Assessment 2020*, EPA, 2020, Wexford.
http://www.epa.ie/irelandsenvironment/stateoftheenvironmentreport/

In summary, the approaches taken in the overarching environmental policies from countries that have been reviewed include the following:

- All have set out a long-term vision, some in very simple terms, others more specific and detailed.
- Some countries have focused on the environment only, while others include all three sustainable development pillars. Denmark has focused only on energy. Slovenia has taken a very broad societal scope.
- Some countries are very advanced in their work (Sweden, Scotland), while others are at an earlier stage (Slovenia, Malta).
- Some countries have specific quantifiable targets, while others do not.
- Some countries (for example in Finland and Slovenia) include co-production and the involvement of stakeholder groups and social groups in the development of the vision and in its assessment. Finland involves civil society in reviewing its own policies; it has both a government assessment and a civil society assessment of performance. Slovenia had 50 participants, representing a cross-section of Slovenian society in an initial, three-day workshop, which set the base for the process of drafting a Vision of Slovenia. Another approach is the use of an all-party government committee, like Sweden.
- Some countries have performance being measured annually, while others do not.
- While focusing on in-country goals, many of the countries also aim to not increase adverse environmental effects elsewhere on the globe, acknowledging that the effects of every country's actions reach far beyond its national borders.
- Reference is also made by many of the countries in relation to international and regional cooperation, solving shared global problems, and global responsibility.

The objectives/goals that have been included in the policies reviewed are set in the following areas:

- A carbon-neutral society, reduced climate impact, reduced emissions of greenhouse gases, net zero emissions of greenhouse gases, resilience through climate adaptation
- A rich diversity of plant and animal life, sustainable populations, a restored and resilient natural environment, healthy sustainable ecosystems, reintroduced native species, enhanced biosecurity
- Clean and healthy air, reduced air pollution, natural acidification only
- A balanced marine environment, clean and healthy seas, biologically diverse seas and oceans, good environmental status in seas, increasing and better managing protected marine areas
- Flourishing lakes, rivers, streams, and coastal areas, thriving wetlands
- Clean, healthy, and plentiful water; protected groundwater
- Clean and healthy soils, sustainably managed

- Sustainable forests, increased woodland
- A varied agricultural landscape
- Restored and protected peatlands
- A well-preserved mountain landscape, in terms of biological diversity, recreational value and natural and cultural assets
- A protective ozone layer
- Zero eutrophication
- A non-toxic environment, reduced dangerous substances
- A safe radiation environment
- Using and managing land sustainably
- A resilient society that adapts its economy to economic, social and ecological challenges; a society that preserves its environment; sustainable local communities that support economic, social and cultural well-being, as well as the well-being of the environment; lifestyles that respect the carrying capacity of nature
- A good built environment, sustainable urban development, protected cultural environments, more green infrastructure, high quality & accessible natural spaces
- Reduced global impact of consumption of goods and services, support lifestyles based on non-material consumption, a carbon-neutral and resource-wise country, maximising resource efficiency and minimising environmental impacts at end of life, reduced emissions associated with imported products, a more circular economy, reduced water loss, greater water efficiency and less personal use, reduced waste, zero avoidable waste
- A fairer, healthier, more inclusive society; an inclusive and united society; equal prospects for well-being; a society supported by public authorities assuming their social responsibility; a participatory society and strengthened democracy; a non-discriminatory, equal and competent society; a society that works
- Human health – nature and the environment impact positively on health, wellbeing and protect us from adverse environmental effects
- Foster people's respect for biodiversity and raise their awareness of its importance; enhanced beauty, heritage and engagement with the natural environment
- An economy that thrives while securing wellbeing for its people and the planet, opportunities for all to prosper, sustainable work, quality jobs and fair work for everyone, socially responsible business, conserving and growing natural assets and resources, using resources from nature more sustainably and efficiently
- Help developing nations protect and improve the environment, protect and improve international biodiversity

Our recommendations for consideration for Ireland in drawing up a long-term national environmental policy are as follows:

- Set out a concise, overall vision for Ireland's environment, to be aimed for in the long-term, such as by 2050.
- It is recommended that the focus of the vision should be environmental, rather than including the social and economic pillars of sustainable development. While there will be some overlap and connection, this vision should be considered at a remove and independent from the UN Sustainable Development Goals (SDGs). An environmental policy gives the opportunity to be more specific in relation to a nations needs and hopes beyond the generalised aims of the SDGs.
- Set up an overarching, representative steering group or expert panel to implement the vision. This could be led, for example, by the Department of the Taoiseach. Belgium, for example, set up an interdepartmental, ad hoc working group, made up of experts from different federal public administrations.
- Fully involve stakeholder groups and social groups in the development of the vision and in its assessment. Consider the use of a citizens' assembly (in the way that the Citizens' Assembly 2016 - 2018 considered 'how the state can make Ireland a leader in tackling climate change'.) There is a societal role in articulating this policy, as we are all stakeholders in it.
- Based on a set of clear principles, lay out the objectives to be addressed. Some objectives might be given priority. Responsibility for achieving the objectives will need to be assigned, and this will likely be across various government departments and agencies and local/regional authorities.
- Set out a series of long-term, medium-term, and short-term actions or policy instruments under each of these objectives. Incorporate existing actions and instruments (such as, for example, the Climate Action Plan, the Biodiversity Action Plan, Harnessing Our Ocean Wealth - The Integrated Marine Plan for Ireland, and the Waste Action Plan for a Circular Economy). Identify and devise additional actions and instruments, where needed. Highlight responsibility for their implementation.
- Produce a series of indicators and quantifiable targets associated with these actions/ instruments.
- Set out to measure, either annually, or at stated periodic intervals, indicators which will illustrate Ireland's performance against these targets.
- Allow a mechanism for changes to be made to the vision, objectives, principles, policy instruments and actions, if necessary, over time, to reflect upon policy development or environmental changes.