

17 Goals to Transform Our World

In September 2015, the General Assembly of the **United Nations** adopted the **2030 Agenda for Sustainable Development** that includes 17 Sustainable Development Goals (SDGs). The Agenda aims at addressing important global issues in a **holistic** way, that is, considering the 'whole' set of interconnected global problems. It specifies goals to be achieved by the year 2030. While they are not legally binding, all countries adopted them. For details see: <https://www.un.org/sustainabledevelopment/> and <https://www.un.org/development/desa/disabilities/envision2030.html>

Several of the UN (United Nations) goals overlap. They address many topics including water, energy, climate, oceans, urbanisation, transport, science and technology. Associated with the 17 goals are 169 targets. A number of goals relate directly to **the marine**, particularly:

- **Goal 14.** Life Below Water: Conserve and sustainably use the oceans, seas and marine resources for sustainable development (<https://sustainabledevelopment.un.org/sdg14>)
- **GOAL 12.** Ensure sustainable consumption and production patterns (<https://sustainabledevelopment.un.org/sdg12>)



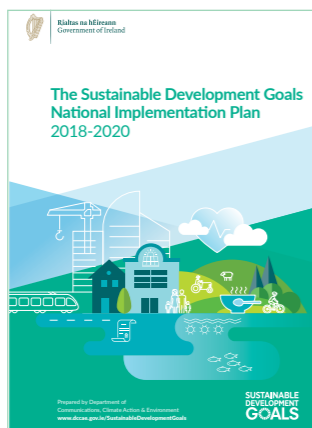
Global and national targets

Each of the goals has several associated **targets** and **indicators**. The targets detail what should be achieved by specified dates. In all there are 169 targets.

The indicators specify what should be measured to show (or 'indicate') the extent to which a target has been achieved. In all there are 232 distinct indicators.

Each of the countries involved undertook to devise a national plan for the achievement of the goals.

In April 2018 the Minister for Communications, Climate Action and Environment, Denis Naughten TD, launched Ireland's *Sustainable Development Goals National Implementation Plan 2018 – 2020*. It specified which government department was mainly responsible for each target. The plan may be found here: <https://www.dccae.gov.ie/documents/DCCAE-National-Implement-Plan.pdf>



Goal 14. Life Below Water

This goal is defined as 'conserve and sustainably use the oceans, seas and marine resources for sustainable development'.

Issues

- marine pollution – including marine litter
- overfishing
- ocean acidification
- coastal eutrophication
- marine biodiversity
- ocean science and research



Goal 14 Targets

Below are some of the targets relating to Goal 14 and the main responsible department. (See National plan pp. 106-111)

1. By 2025, prevent and significantly reduce marine pollution of all kinds (DHPLG: Dept. of Housing, Planning and Local Government and DCHG: Dept. of Culture, Heritage and the Gaeltacht)
2. By 2020, sustainably manage and protect marine and coastal ecosystems (DHPLG and DCHG)
3. Minimise and address the effects of ocean acidification (DAFM: Dept. Agriculture, Forestry and the Marine and DCHG)
4. By 2020, effectively regulate **harvesting** and end **overfishing** ... in order to restore fish stocks in the shortest time feasible, at least to levels that can produce **maximum sustainable yield**... (DAFM and DCHG)
5. Ensure that fishing and **aquaculture** are environmentally and socially sustainable. Foster a dynamic fishing industry and ensure a fair standard of living for fishing communities. (DAFM)

Goal 12. Ensure sustainable consumption and production patterns

Issues

- plan for sustainable consumption
- make efficient use of natural resources
- halve **per capita** global food waste
- manage all wastes, especially hazardous waste
- increase rate of recycling
- remove **subsidies** that encourage waste
- increase awareness and appreciation of biodiversity.



Goal 12 Targets

Below are some of the targets relating to Goal 12 and the main responsible department. (See National plan, pp. 96-101)

1. Implement the 10-year framework of programmes on sustainable consumption and production...taking into account the development and capabilities of developing countries (DCCAE: Dept. Communications, Climate Action and Environment)

2. By 2030, achieve the sustainable management and efficient use of **natural resources**. (DCCAE)
3. By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses. (DAFM and DCCAE)
4. By 2020, achieve the environmentally sound management of chemicals and all wastes ... and significantly reduce their release to air, water and soil ... (DBEI: Dept. Business, Enterprise and Innovation and DCCAE)
5. By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse. (DCCAE)
6. Remove fossil-fuel subsidies that encourage wasteful consumption ... in a manner that protects the poor and the affected communities. (DCCAE)

2019/2020 Champions Programme

The achievement of the 17 SDGs requires involvement of groups and individuals who are committed to sustainable development. The aim of the **Champions** programme is to raise awareness of the SDGs and to show through the example of the Champions that everyone in society can make a contribution to achieving the 17 Goals.

The task is challenging but achievable if everyone across society gets involved. Many organisations are already responding directly to the SDGs and in related areas such as poverty eradication, environmental protection, improving gender equality, and sustainable economic growth. BIM has been appointed to the champions programme.

Local actions

Fishery Improvement Programmes

BIM is working with fishermen and producers through local Fishery Improvement Programmes. These programmes aim to improve the long term sustainability of fisheries over time by developing and implementing science based management plans to assist fisheries to achieve maximum sustainable yield as determined by their biological characteristics. (SDG14.4)

Fishing for Litter

By June 2019, 330 tonnes of marine litter of waste were collected at participating ports and disposed of from the marine environment. This programme links in with BIM's existing **Net Recycling** programme and since 2005, has recycled 600 tonnes of fishing nets. These actions address SDG targets 14.1 and 12.5.

Extended producer responsibility (EPR)

EPR has two primary environmental goals.

- The first is to provide incentives for manufacturers to design products that have low impact on the environment and are produced in a resources efficient way — what is referred to as 'eco-design'.
- The second goal is to ensure effective **end-of-life** collection and treatment of these products for reuse or recycling in an environmentally-sound way.

If manufacturers are responsible for the collection and recycling of products they will have a strong incentive to design their products to facilitate recycling and so promote the circular economy.

The **Clean Oceans Initiative** was launched by Minister Michael Creed in January 2019 as a call to action for our seafood sector and coastal communities to take action to remove plastics and other marine litter from our oceans.

This initiative builds upon the considerable work being done by the fishing sector in the **Fishing for Litter** programme which has been running since 2015 and the Co-ordinated Local Aquaculture Management System (CLAMS) where fish farmers work together to clean piers and shores.

For further information please visit www.bim.ie

Using Journey Mapping to trace the story of materials from source to 'end of life'.

Find this and other lessons on www.sta.ie

Syllabus References

The main syllabus references for the lesson are:

Leaving Certificate Technology

- the impact of product life-cycle on the environment; incorporate recycling, re-use and waste strategies into simple product specification (p. 38)
- environmental and social considerations applied in product design and manufacture (pp. 47)

Leaving Certificate Geography

Economic activities have an environmental impact.

- the use of renewable and non-renewable resources in the economy
- environmental pollution at a local/national and global scale
- sustainable economic development (p. 26; p. 35)

Leaving Certificate Biology

- Definition and diversity of "ecosystems". (p. 11)
- Factors that control populations: competition, predation, parasitism, symbiosis. (p. 12)

Science and Technology in Action is also widely used by Transition Year classes.

Learning Outcomes

On completion of this lesson, students should be able to:

- Know what is meant by 'sustainable' and explain why sustainability is important, globally and locally
- Know what is meant by the UN Sustainable Development Goals
- Distinguish between goals, targets and indicators
- Outline some key issues associated with Goals 12 and 14
- Outline the role of Government regarding the Goals
- Outline the connections between principles of the circular economy and the SDG12.

General Learning Points

These are additional relevant points which are used to extend knowledge and facilitate discussion.

- The UN 2030 Agenda for Sustainable Development was adopted in 2015. It specifies 17 Sustainable Development Goals (SDGs) to be achieved by 2030.
- Each goal includes several targets and specifies indicators by which progress can be measured. Goals 14 and 12 have particular relevance to the marine.
- Ireland's Sustainable Development Goals National Implementation Plan 2018 – 2020 was launched in 2018.
- The Champions programme was launched in 2019 to promote wider public engagement. BIM was selected as one of the SDG Champions.

Student Activities

- African students produced posters summarising each of the 17 SDGs (Sustainable Development Goals). They can be found at <http://www.maurotoselli.com/sustainable-development-goals-sketchnotes.html> and https://en.wikipedia.org/wiki/Sustainable_Development_Goals
Examine the poster for Goal 12. Learn more about the goal at <https://www.un.org/sustainabledevelopment/> and then produce your own poster to summarise the content.
- Goal 14 commits governments to "regulate harvesting and end overfishing ... in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield.."
(a) What are Fishery Improvement Plans? Explain how you might think they can improve sustainability?
See: http://www.bim.ie/media/bim/content/our-services/grow-your-business/wild-capture-fish/BIM,RSS_FIPS_Leaflet.pdf
(b) Find out and summarise what is the difference between 'sustainable yield' and 'maximum sustainable yield'. Which is better for the fish stock and which is better for the environment?
- What is meant by 'the circular economy'? See: http://ec.europa.eu/environment/circular-economy/index_en.htm and <https://fishyfilaments.com/> (closed loop circular economy).
- Investigate the potential of algae in removing excess nitrogen from coastal marine environments. (Search the Internet for "Nutrient Bioextraction Initiative".)
How does this support the Circular Bio-economy, one of the targets of the Government's Climate Action Plan?

True/False Questions

- | | | |
|---|---|---|
| a) Sustainability Goals 12 and 14 most directly relate to fishing and the marine. | T | F |
| b) The circular economy helps reduce waste. | T | F |
| c) Ocean acidification is indicated by increased pH. | T | F |
| d) Fossil fuel subsidies are good for the environment. | T | F |
| e) Fishing for Litter helps prevent and reduce marine pollution. | T | F |
| f) Ireland's SDG National Implementation Plan was launched in 2015. | T | F |
| g) Responsibility for achieving the targets of the 17 SDGs is shared between several government departments. | T | F |
| h) The aim of the Champions programme is to engage the wider community in addressing the SDGs. | T | F |
| i) Each of the SDGs has specific targets and indicators. Targets are specific steps towards the achievement of the overall Goal. Indicators are designed to measure progress. | T | F |
| j) Eutrophication is caused by too much oxygen in water. | T | F |

Check your answers to these questions on www.sta.ie.

Examination Questions

Leaving Certificate Biology (OL) 2010, Q. 10 c

"The great pressure put on wildlife by the growing human population has caused many species to become extinct. Habitat destruction, over-exploitation and environmental pollution have been the main causes. There is a clear need for conservation if such a trend is to be halted. Conservation has many practical outcomes from which humans will benefit in future years."

- Explain the words 'pollution' and 'conservation'.
- State the effect of any one named pollutant.
- Outline one conservation measure carried out by one of the following industries: agriculture or forestry or fisheries.
- Name one problem associated with waste disposal.
- State one role of microorganisms in waste management.

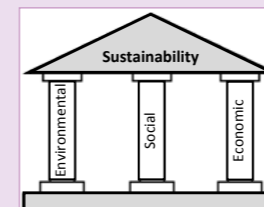
Leaving Certificate Biology (OL) 2007, Q. 10 b

Answer the following questions in relation to a marine food web.

- Name a producer.
- What does the animal plankton feed on?
- What feeds on the animal plankton?
- Why are periwinkles referred to as primary consumers?
- Starting with a producer, complete a food chain with four trophic (feeding) levels, naming each organism involved.

Leaving Certificate Technology (HL) 2017, Q. 2 d

Sustainability is a key concept in controlling the amount of waste created by society. Explain, with examples, what is meant by each of the three 'Pillars of Sustainability' given below:



- environmental sustainability
- social sustainability
- economic sustainability.

Leaving Certificate Geography (HL) 2018, Q. 13

We live in an interdependent global economy. Actions or decisions taken in one area have an impact on other areas.

Examine this statement with reference to each of the following:

- Global environmental issues
- Impact of social and political decisions.

Leaving Certificate Geography (HL) 2018, Q. 15

Sustainability is a model for future development. Discuss this statement with reference to three of the following: Resource use, Fair trade, Justice issues, Self-reliance.

Leaving Certificate Geography (HL) 2015, Q. 8 c

Examine the role of sustainable development in controlling the environmental impact of economic activities.

Did You Know?

The SDGs replace the MDGs

- The **United Nations 2030 Sustainable Development Goals** replace the Millennium Development Goals (MDGs) that were established following the summit in 2000. (The MDGs did not address the root **causes** of those issues.)
- Ireland's response to the Sustainable Development Goals is detailed in the following documents: *The Sustainable Development Goals National Implementation Plan 2018-2020* and *Climate Action Plan 2019 - To Tackle Climate Breakdown*.
 - <https://www.dccae.gov.ie/documents/DCCAE-National-Implement-Plan.pdf>
 - https://www.dccae.gov.ie/en-ie/climate-action/publications/Documents/16/Climate_Action_Plan_2019.pdf
- The main ambition of the SDGs are to **eradicate global poverty** by the end of 2030. Around one billion people live on less than \$1.25 a day. The percentage of people in the developing world living in such poverty has gone down by around 26% since 1990. (www.concern.net/news/seven-things-you-need-to-know-about-the-sustainable-development-goals)

Biographical Notes

Bren Smith

Bren Smith is the owner of Thimble Island Ocean Farm and executive director of **GreenWave**. A lifelong commercial fisherman since the age of 14, Bren pioneered the development of **3D ocean farming**, which is designed to restore ocean ecosystems, counter climate change, and create blue-green jobs for fishermen – while ensuring healthy, local food for communities and contributing to a Circular Bioeconomy.

He has won the Buckminster Fuller Prize for ecological design, the European **Sustainia** Award, and is a finalist for the **SeaWeb Seafood Champions** Award. His writing has appeared in the



New York Times and National Geographic. In 2013, Smith was chosen as one of six "Ocean Heroes" by Oceana and Future of Fish's "Ocean Entrepreneur" of the year. (See <https://www.greenwave.org/team>)

Revise The Terms

Can you recall the meaning of the following terms?

aquaculture, biodiversity, circular economy, circular bio-economy, end of life, eutrophication, extended producer responsibility scheme, harvesting, holistic, indicators, natural resources, per capita, pH, targets, the marine, United Nations.

Check the Glossary of terms for this lesson on www.sta.ie