

A 2022 Review of Iceland's UN Sustainable Development Goals #2 and #14

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ABSTRACT

This is a 2022 review of Iceland's progress on the UN's Sustainable Development Goals (SDGs) #2 (Zero Hunger) and #14 (Life Below Water). SDG #2 primarily focuses on eradicating hunger, creating sustainable agriculture practices, and providing nutritious food for all. Within Iceland, hunger is not a critical concern, which allows Iceland to focus on progressing towards the completion of SDG #2 worldwide. Iceland has demonstrated its commitment to this goal by supporting the World Food Programme through donation and advocacy, working towards global food security. SDG #14 highlights the importance of conserving marine life and resources, which Iceland recognizes, as its economy relies on fisheries. To protect its oceans, Iceland has implemented several sustainable fishing practices, which prevent overfishing and allow for healthy marine life. Iceland also places an emphasis on addressing ocean acidification and its impacts on Iceland's fishing industry and marine population. Iceland commits to sustainable practices and creates a balance with economic affairs, showing its dedication to the furthering of its country. Iceland's global contributions and support of international organizations show strong progress to Sustainable Development Goals #2 and #14.

Introduction

As an intergovernmental organization, the United Nations (UN) was established in 1945 to create international peace and security, promote friendly relations between nations, advance socially, and defend human rights. Since then, the UN has founded various specialized agencies, such as the United Nations International Children's Emergency Fund (UNICEF), the International Maritime Organization (IMO), the World Health Organization (WHO), and the World Food Programme (WFP), to combat global issues including child welfare and development, marine pollution, health concerns, and hunger. Member states sign treaties and agreements to set and achieve initiatives that work towards solving worldwide matters. One of the 193 countries committed to the UN is Iceland, which joined in 1946 (United Nations, 2021).

In the North Atlantic Ocean, Iceland lies between both the Greenland Sea and the North Atlantic. The Icelandic government is a multi-party constitutional republic run by Prime Minister Katrín Jakobsdóttir (Government of Iceland, n.d.-a). Iceland also has a head of state, President Guðni Th. Jóhannesson. Although Iceland does not hold much global power since it is significantly smaller than most countries, is not a main export to other countries, and does not have a military, navy, or air force, it is ranked first on the Global Peace Index and ranks third on the UN Human Development Index (Institute for Economics & Peace, 2022). As a major donor and player in UN agencies and funds, Iceland has played a key role in supporting the UN. Since its acceptance, Iceland has had 18 permanent UN representatives (Government of Iceland, n.d.-a). Since then, Iceland has gradually increased their involvement, has become a member of most UN Specialized Agencies and other initiatives, and has formed numerous agreements and goals with UN agencies (Government of Iceland, n.d.-b).

In 2016, the UN created the 17 Sustainable Development Goals (SDGs) to develop an international plan of peace, sustainability, equality, and health. SDG #2, Zero Hunger and SDG #14, Life Below Water are examples of particularly relevant SDGs in Iceland. Zero Hunger aims to end world hunger while integrating sustainable agriculture,



food security, and increased nutrition (United Nations, n.d.-d). As reported by the United Nations, hunger affects over 30% of people worldwide, which is 2.4 billion people (The Global Goals, n.d.). There is a continuous rise in this rate, and it has affected people all over the world by stunting growth, increasing rates of chronic diseases, delaying development, causing behavioural problems, and causing death from starvation (Sachs, Lafortune, Kroll, Fuller, & Woelm, 2022). With hunger still present in our world, other sustainable development goals, such as quality education and health, cannot be met. We cannot survive without access to healthy food; hence, it is a human right. It should be a top priority, as without proper food, we would also be prone to disease and less functional. Studies have found that children facing hunger have less developed brains, equaling lower IQ and cognitive abilities (Tripura Foundation, 2022).

Sustainable Development Goal #2 – Zero Hunger

Iceland provides 3 million CAD annually to the World Food Programme, which works towards ending world hunger by 2030 (World Food Programme, 2016). Hunger is not an urgent matter in Iceland according to Meyer (2020), as only 2.5% of the population suffers from hunger each year; a statistic that has not changed since 2000 (see Figure 1). If Iceland gradually lowers its hunger rate, it could reach Target 2.2, End all Forms of Malnutrition, of SDG #2 by 2030 (see Table 1).

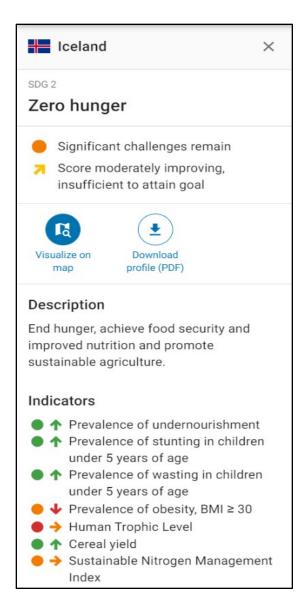


Figure 1. Iceland's SDG #2 Statistics from the Sustainable Development Report (n.d.).

Table 1. Iceland's SDG #2 Target Progress (OECD, 2014).

Goal	Target	Description	Score relative	Progress
			to zero	
2	2.1	Hunger	0.20	No progress or moving away from the SDG target
2	2.2	Malnutrition	2.35	No progress or moving away from the SDG target

2	2.4	Sustainable production	0.16	No progress or moving away from the SDG target
2	2.5	Diversity of seeds and live-stocks	1.46	No progress or moving away from the SDG target
	2.7	Food prices anomalies	0.00	Target is achieved or on track to being achieved

As a result of its environment, Iceland uses a precise method to preserve food. Since 2013, Iceland has been drying some of its food using the geothermal heat from its many natural hot springs (United Nations, 1997). These food preservatives have not only reduced hunger in smaller towns but have also helped boost the economy. Due to Iceland's cold climate, it cannot grow as much produce as other countries, so it must import goods and food. As such, the cost of food can be very high, causing families to not be able to afford food. Another downside to relying on imported food is that if imports were to experience delays or halts, hunger rates could rise substantially. Citizens believe Iceland should store more stocks of food, but the government continues to export almost half of its preserved food (Gold, 2017). Additionally, if a natural disaster were to occur in Iceland, specifically one of Iceland's 200 volcanoes, it would disrupt Iceland's exports and imports and affect their farmable land. For instance, in 2010, the Eyjafjallajökull volcano erupted, resulting in hundreds of acres of damaged farmland (Icelandic Meteorological Office, n.d.)

The Icelandic government has demonstrated its commitment and progress by signing a Strategic Partner Agreement with the United Food Nations Program (UFNP) and pledging to eradicate world hunger by the year 2030 (World Food Programme, 2016), as well as implementing several policies concerning sustainable and wholesome food production. One example is Iceland's first Food Policy, created in 2020, which lays out strategies to improve national food security, integrate sustainable consumption and production, and includes an action plan for future challenges (Government of Iceland, 2019). As stated in the Icelandic government's 2019 Implementation of the 2030 Agenda for Sustainable Development (Government of Iceland, 2019), their priorities lie in assisting vulnerable groups with access to nutrition and basic needs. As Prime Minister Katrín Jakobsdóttir expresses, "It must be ensured that hunger and malnutrition will never be a problem in Iceland, especially among the poor, the elderly and the disabled" (Government of Iceland, 2019).

Sustainable Development Goal #14 – Life Below Water

Iceland is focused on SDG #2 as well as SDG #14, Life Below Water, as it is surrounded by the ocean where fish is the main industry and the foundation of Iceland's economy. Ocean, sea, and marine resource conservation and sustainable use are all part of Goal 14. The existence of humans and life on earth relies on healthy oceans and seas. Oceans supply us with food, energy, and water, manage our climate, and cover 70% of the world (United Nations, n.d.-d). Protecting our oceans and marine life is crucial as they are the greatest ecosystem on the planet and continue to cater to the economic and environmental demands of the entire world (United Nations, n.d.-d). Though we entirely rely on our seas and the species that inhabit them, humans have taken the oceans' resources for granted and contributed to serious problems such as overfishing, plastic waste, and acidification of our oceans. These all disrupt the natural balance of fragile ecosystems found in marine life, which can have detrimental effects on the world and the surrounding species. For example, climate change causes the deterioration of coral reefs. This is because, through climate

change, the oceans' water becomes warmer, which then causes an overgrowth of algae which bleaches coral reefs, killing the coral (United Nations, n.d.-a). This then has a negative effect on the animals that rely on coral reefs for survival, such as sea turtles or starfish. This is not the only manner in which humans' actions have destroyed the world around them. The United Nations State of World Fisheries and Aquaculture 2019 reports that "over 34.2% of fisheries are over-fished, comprising 22.7% of seafood" (United Nations, n.d.-d). Each year, between 5 and 12 million metric tons of plastic are thought to infiltrate the ocean, resulting in financial losses to the fishing sector of roughly \$13 billion besides the cleanup expense (United Nations, n.d.-d). Without fisheries and marine life, the planet would be without 57 million jobs and its main supply of protein, which feeds over 50% of the people in the least developed nations (Food and Agriculture Organization of the United Nations, 2020).

As stated above, marine life is at the heart of Iceland's economy and is deeply rooted in Iceland's cultural history. Since Iceland was first settled, fishing has had a significant influence on its history and culture because it provided an essential source of food and a foundation for the country's economy. Iceland is in the 18th place among leading fishing nations in the world, with nearly all its fish exported; making up 1.3% of the total world's catch (Business Iceland, n.d.) (see Figure 2). Iceland is a major participant in UN ocean-related conferences and has chaired several events, including the 2017 Law of the Sea Convention and the 2017 UN Ocean Conference (Government of Iceland, n.d.-c). In a global context, Iceland's adoption of the Global Programme of Action for Protecting the Marine Environment (United Nations, n.d.-b) and the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea (United Nations, n.d.-e) are both regarded as noteworthy accomplishments, according to the UN (United Nations, n.d.-d). Iceland also continues to support the UNFSS Aquatic and Blue Food Coalition, which was launched at the Food Systems Summit in September 2021, and will "continue to lend its support to this effort and provide leadership" (United Nations, n.d.-c). As described by the World Fishing and Aquaculture Institute, Iceland's marine industry generates 25 to 30 percent of the country's GDP and makes up about 5% of the total workforce in Iceland (Gestsson, 2014). As overfishing and the depletion of marine resources have become increasingly urgent challenges in Iceland, it has become a high priority to conserve because of Iceland's close ties to the marine industry. This is the reason the government is utilizing its resources to safeguard and control marine life and address the impacts of climate change on the ocean. Iceland is known for its pristine natural beauty, and its waters are among the cleanest in the world. In 2022, Iceland was one of ten countries to receive the highest Yale University Environmental Performance Index (EPI) for clean water worldwide (Environmental Performance Index - Yale University, 2022). Nevertheless, there are several areas where caution should be applied. All forms and levels of pollution in all Icelandic waters are minimal, but Iceland has other areas of challenge: incorporating sustainable and responsible fisheries, preventing ocean acidification, and expanding protected marine areas.

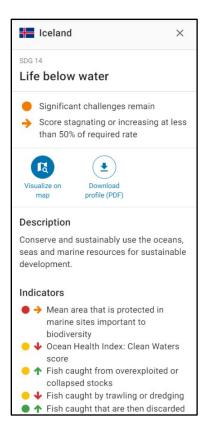


Figure 2. Iceland's SDG #14 Statistics from the Sustainable Development Report (n.d.).

Considering Iceland's high reliance on fisheries and seafood exports, the sustainable harvesting of marine resources is an economic and environmental priority. While the Icelandic government supports and works to improve its fisheries by funding them and individual businesses, overfishing has threatened to collapse the industry in the past (Centre for Climate Adaptation, n.d.). The Icelandic Government implemented a system of individual transferable quotas (ITQs) in 1990 under the Fisheries Act to prevent overfishing from putting Iceland's economy at risk again (OECD, 2017). ITQs give fishers the option to lease or sell permanent quota shares, allowing fishers to gain profits later from restricting fishing now (United Nations, n.d.-c). The ITQ system has been identified by international organizations as an example of how sustainable development principles have been successfully applied to fishing (Marine Conservation Institute, n.d.). Another example of a successful improvement is the implementation of the catch control rule, which is now applied in the cod fishery and will be expanded to other fisheries. Implementing the total allowed catch (TAC) limits the catch per vessel and also promotes sustainable fishing and decreases risks of overfishing, and both fisheries and reporting of catches are strictly supervised (Icelandic Responsible Fisheries, n.d.). The Icelandic government has also created the GRÓ Fisheries Training Programme (FTP) to work towards providing scientific and technological knowledge in its search for sustainable fisheries and aquaculture (Gro Centre for Capacity Development, Sustainability & Societal Change, n.d.). The FTP is focused on promoting aquaculture, handling and processing fish, producing sustainable fisheries, and establishing regulations to ensure long-term sustainable stock usage, aiming to address SDG 14 targets 14.4 and 14.7 (Gro Centre for Capacity Development, Sustainability & Societal Change, n.d.). The FTP also aims to work towards more comprehensive projects, including contributing to reducing hunger and poverty (United Nations, n.d.-d). Lastly, the Icelandic government finances and supports the development of sustainable fisheries and stocks by creating regulations, as well as placing measures to prevent future overfishing (Gro Centre for Capacity Development, Sustainability & Societal Change, n.d.).



Despite Iceland's clean water resources, concerns about ocean acidification are growing because of the country's expanding urban population, growing tourism economy, and new infrastructure that all increase CO₂ emissions, a major cause of ocean acidification. As mentioned in several public statements, the Icelandic government recognizes ocean acidification and has acknowledged the steps they need to take to prevent it, such as fully transferring to sustainable energy (Government of Iceland, n.d.-d). The marine environment and fish exports would suffer because of ocean acidification (Icelandic Meteorological Office, n.d.). According to marine biology doctoral student Hrönn Egilsdóttir, "ocean acidification may prove a much more dire problem than global warming" (University of Iceland, n.d.). As coral reefs are the breeding site for fish that Iceland relies on, Egilsdóttir and many Icelanders think that the state of the coral reefs is a critical concern for Iceland. Egilsdóttir also expresses that "Because there is much at stake for Iceland, [the government] should react immediately and lead other nations by good example..." (University of Iceland, n.d.). Iceland's ocean acidification levels have remained relatively consistent for the last few decades, with only a slight decline in water pH, according to annual evaluations of the coastal and marine environments done by The Marine and Freshwater Research Institute (Marine Conservation Institute, n.d.). Additionally, Iceland's CO₂ per capita emissions have been decreasing since 2008, which is a clear indication that the Icelandic Government's actions are effective (Ritchie, Rosado, & Roser, n.d.). Lastly, Iceland has joined the Alliance to Combat Ocean Acidification and maintains its dedication to the Paris Agreement's Ocean Commitment (Government of Iceland, n.d.-d).

Another major challenge pertaining to SDG 14 is the lack of protected marine areas. As of 2018, 0.427% of the marine sector within the Icelandic national jurisdiction was protected (Marine Conservation Institute, n.d.). A total of 3,250 km² of 763,239 km² was fully protected, which is equal to < 1% (Marine Conservation Institute, n.d.). This statistic has not significantly increased since 2016. Furthermore, only 49.9% of Iceland's exclusive economic zone (EEZ) has been mapped, and 12% with high-resolution equipment (Routley, Douglas, & Fernandes, 2020). To increase this statistic, a 13-year project (2017-2029) to map the Icelandic EEZ is being led by the Marine Research Institute of the Icelandic Government (United Nations, n.d.-c). Icelandic officials place a strong emphasis on finishing mapping the seabed to introduce scientific information on how to conserve delicate marine environments. The OSPAR (The Convention for the Protection of the Marine Environment of the North-East Atlantic) Agreement database lists Iceland as having 14 protection zones in the ocean inside its EEZ (OSPAR Commission, n.d.). Using fishing equipment is forbidden in the protection zones, as well as other non-protected zones. There are no current policies relating to the expansion or protection of marine areas, and as such, Iceland recognizes this challenge as one of its greatest.

Summary

Iceland has an optimistic but realistic perspective for completing the SDGs and has been mainly transparent to not only their citizens, but to the UN and the rest of the world regarding their challenges and achievements. Iceland frequently expresses their integration of the SDGs into society. Iceland contributes thoroughly to both SDG #2 (Zero Hunger) and SDG #14 (Life Below Water). Iceland's efforts towards progressing in SDG #2 include donating millions annually to worldwide organizations such as the World Food Programme and ensuring national food security through policies such as the 2020 Food Policy. Hunger rates are very low in Iceland; the government utilizes sustainable geothermal agriculture and food preservation methods. For SDG #14, Iceland highlights sustainable fisheries and marine conservation efforts, as the Icelandic economy relies heavily on the marine industry. To prevent issues such as overfishing, the Icelandic government has implemented methods such as individual transferable quotas (ITQs), which contribute to SDG targets 14.4 and 14.7. Although Iceland has some of the cleanest waters worldwide, there have been recent concerns of ocean acidification due to rising CO₂ emissions. The Icelandic government remains dedicated to acting on these issues to ensure ocean health. The Icelandic government frequently conveys pride in having reached SDG targets despite being a small nation, mostly through speeches at the United Nations General Assembly (Government of Iceland, n.d.-d), or directed toward the citizens of Iceland (UNA Iceland, n.d.). However, they clarify their objectives are ongoing and that considerable work remains before they can claim to have met the requirements of the Global Goals.



Acknowledgments

I would like to thank Ms. Katie Church for her time and dedication not only to our class, but to her teaching career and our school. Thank you for your consistent and personalized support of every student you teach.

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