

# LIFE BELOW WATER

## The Role of Dietitian-Nutritionists in Contributing to the United Nations Sustainable Development Goals

### GOAL #14

Target: Conserve and sustainably use the oceans, seas and marine resources for sustainable development (1).

## GLOBAL TARGETS

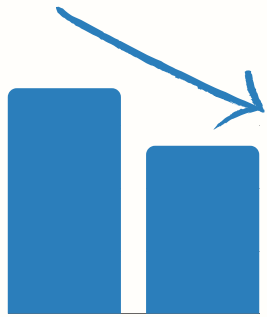
- ▶ By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities
- ▶ By 2020, conserve at least 10 percent of coastal and marine areas, consistent with national and international law and based on the best available scientific information
- ▶ Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels

- ▶ Provide access for small-scale artisanal fishers to marine resources and markets

Seafood is integral to human nutrition and health. It is an important source of protein for more than 35% of the world's population (2), is rich in nutrients such as vitamin D, selenium, and iron (3), and omega-3 fatty acids that support brain development and functioning (3). It is recommended to eat one to two 3-ounce servings of fatty fish a week to reduce the risk of heart disease (3). Fish intake is also associated with a lower risk of Alzheimer's and depression (3). Clearly, seafood impacts human health and nutrition dramatically, and its influence goes far beyond its high nutrient content.

## How Does Life Below Water Support Nutrition?

While the health benefits of marine resources may be well known, it is important to recognize that the consumption of these species has a significant impact on life below water. Fishing decreases ocean wildlife populations (4), and this is exacerbated by by-catch. By-catch is the act of catching species that are not intentionally being fish; they are often discarded or thrown back injured, and this has a ripple effect on other species (5). Shark populations are decreasing because of shark by-catch in commercial large vessel fishing and as their numbers decline, their main food sources, like stingrays, raise. Stingrays are predators to smaller fish that humans catch and consume and so results a reduced availability of fish for human consumption (4). In comparison to commercial, large-vessel fishing contributes the most to overfishing.



The proportion of fish stocks within biologically sustainable levels declined from 90% in the 1970s to 67% in 2015<sup>(6)</sup>

Only up to 35% of fish populations are sustainably fished, and 60% are being fully fished (2). This means that fish populations are being sourced at a rate faster than they can reproduce, and faster than is possible to meet global fish demands. Ocean acidification is another dire concern. The process, also known as 'ocean dead zones', occurs when carbon dioxide dissolves in ocean surfaces, changes the water's pH and makes it more acidic and inhabitable for marine life (7). Ocean acidification is a threat to ecosystems and marine food security (7). A major contributor to ocean acidification is carbon dioxide emissions (8), and the current food system contributes to 26% of greenhouse gas emissions (9). One of the leading causes of carbon dioxide emissions is deforestation (9), and in Latin America for example, commercial agriculture accounts for 70% of deforestation (10).



Ocean acidity has increased by **26%** since pre-industrialized times<sup>(6)</sup>

Fishing activities also contribute largely to ocean pollution and debris. Commercial fishing and recreational boating contributes over 85% of ocean debris (11). Plastic pollution poses major risks to marine life due to ingestion and entanglement, even more significantly than chemical pollution (12). This includes not only fishing equipment, but also plastic bags and utensils that are prevalent in the current food system. The current food system is running at the expense of the oceans and marine life. It is contributing to decreased biodiversity, overfishing, ocean acidification, and pollution - which is unsustainable for earth and its inhabitants. According to the United Nations progress report in 2019, there is little progress being made globally to improve the sustainability of life below water. Though the percentage of oceans now deemed as protected marine areas are rising, ocean acidification continues to rise and will reach a rate of 100-150% by the end of the century (1).

## SUSTAINABLE FISHERIES ACTION NETWORK (I3)

In June 2017, Norway established an action network for sustainable fisheries as part of the United Nations Decade of Action on Nutrition. The network shares knowledge and experiences on effective policies and actions for sustainable aquaculture practices and is working on developing policies that create sustainable, resilient, food systems for healthy diets and supportive environments. Their work can serve as a framework and model for other countries around the world.



## Framework for Action

To reach the United Nations Sustainable Development Goal for Life Below Water action must be taken at the health-system, policy, and academic levels. Dietitian-nutritionists can be leaders in this by creating demand for more sustainable resources and practices. Establishing trusting relationships with colleagues and clients is key to success at all levels.

### Academic Level

Sustainability is an emerging concept that is becoming more relative to nutrition and dietetics. However, there is confusion among professionals about seafood sustainability (14). To increase dietitian-nutritionists' knowledge of sustainable foods, such information should be incorporated into nutrition and dietetic education at all levels. Doing such will facilitate understanding and ease of incorporation of these concepts into practice and dietitian-nutritionists will be better prepared to work toward achieving United Nations Sustainable Development Goal #14. More research regarding sustainable aquaculture practices that are specific to nutrition and dietetics will help support this process (13).

### Policy Level

Dietitian-nutritionists have the skills to advocate for and lead policies that promote sustainable practices that support oceans and marine life. These could be policies that contribute to the development of sustainable fisheries and seafood, and inhibit the deterioration of our oceans. Such policies could focus on decreasing greenhouse gas emissions, ocean acidification, and deforestation, creating sustainable aquaculture and fishery practices, increasing equity of local small

fisheries, decreasing overfishing and by-catch, or protecting the oceans from environmental factors like plastics and oil.

### Health-Systems Level

Individuals trust the opinions and advice of registered health professionals. When dietitian-nutritionists are working with clients they can encourage them to select seafood that is produced and sourced sustainably. For example, dietitian-nutritionists can encourage consumers to purchase seafood with the Marine Stewardship Council Blue Fish label, which identifies sustainable marine products (15). Dietitian-nutritionists can facilitate behaviour change by educating people about the importance of sustainable fisheries and helping individuals reach their sustainability goals, by using tools such as the Good Fish Guide (16). In the food service departments of healthcare facilities dietitian-nutritionists can source, or advocate for sourcing, sustainable seafood and products with minimal packaging.

### Community Level

Dietitian-nutritionists can also educate others on the benefits of choosing sustainable seafood and implementing practices that support marine life in community settings. For example, dietitian-nutritionists may start community initiatives that educate its members on such topics, or work with pre-existing community programs, such as summer camps, to implement safe ocean practices like beach clean ups.



## SODEXO CANADA- SUSTAINABLE SEAFOOD POLICY<sup>(17)</sup>

Sodexo is a food service and management company in Canada that supplies food products to hundreds of food service operations. In February 2011, they launched the Sustainable Seafood Policy as part of their "Better Tomorrow Plan". The policy recognizes that seafood is part of a nutritious diet and so the company has committed to no longer serving seafood species that are identified as being 'at risk' by December 2011 and having 100% of all the seafood sourced sustainably by the end of 2015.

They plan to achieve these goals by:

- promoting the use of Marine Stewardship Council Blue Fish label certified products
- promoting appropriate aquaculture standards for farmed fish, where they are available
- promoting the use of lesser known fish species avoiding buying immature fish

## KEY POINTS

- ▶ Seafood is an important source of protein and essential nutrients for more than 35% of the world's population
- ▶ High rates of seafood consumption are a contributing factor to overfishing and the decrease of biodiversity
- ▶ Ocean acidification is increasing as a result of land-based agriculture and activity, harming marine habitats
- ▶ As of 2019 there is little progress being made globally to improve the sustainability of life below water

## Good Fish Guide<sup>(16)</sup>

Developed by the Marine Conservation Society, the Good Fish Guide contains information on the sustainability of different varieties of seafood in the United Kingdom. The system uses a "red light" "green light" to rank a product's sustainability, and provides recipes for various species of fish so consumers can expand the varieties they consume. There is also an option to search for the most sustainable fish by season, and the tool is available as a mobile app so that the resource is easily accessible to consumers and professionals. The tool has been recommended by the British Dietetic Association and is used by a variety of populations including retailers, fishing industries, and consumers.



## Key Roles for Dietitian-Nutritionists

- ▶ Collaborate with professionals to create policies that support sustainable seafood practices
- ▶ Promote the consumption of sustainable seafood
- ▶ Implement programs that teach others about sustainable marine life resources

## Recommendations for Further Reading:

[Big Fishing: the role of the large-scale commercial fishing industry in achieving Sustainable Development Goal 14.](https://link.springer.com.ezproxy.acadiau.ca:9443/article/10.1007/s11160-018-09546-8) [https://link-springer-com.ezproxy.acadiau.ca:9443/article/10.1007/s11160-018-09546-8](https://link.springer.com.ezproxy.acadiau.ca:9443/article/10.1007/s11160-018-09546-8)

[A preliminary assessment of the indicators for Sustainable Development Goal \(SDG\) 14 "Conserve and sustainably use the oceans, seas and marine resources for sustainable development".](https://www.sciencedirect.com/science/article/pii/S0308597X18301131?via%3Dihub) <https://www.sciencedirect.com/science/article/pii/S0308597X18301131?via%3Dihub>

[How do food systems affect fish stocks and marine habitats?](https://foodsource.org.uk/55-how-do-food-systems-affect-fish-stocks-and-marine-habitats) <https://foodsource.org.uk/55-how-do-food-systems-affect-fish-stocks-and-marine-habitats>

*Text modified from original, which was created by Rachael Powell, Acadia University.*

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