

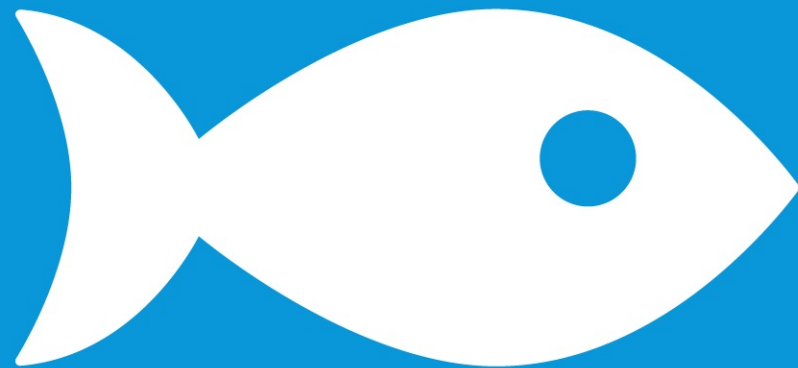


SDG 14: Life Below Water

University of Applied Sciences Burgenland



14 LIFE BELOW WATER



**Interpretation
of life below water**



Main goal: to conserve and sustainably manage the use of oceans, seas and marine resources for sustainable development

Many people, especially from the small island states and on the coasts of many poorer countries, make a living from fishing. However, in recent years, large corporations have “fished out” many fishing areas and fishermen have lost their livelihoods. Climate change is leading to changes in ecosystems due to the acidification of the oceans. Plastic waste swims in the sea, many fish and birds eat it and die from the non-digestible plastic residue. The UN therefore wants to stop the pollution of the oceans by chemicals and plastic, promote sustainable fishing through political measures, strengthen the rights of poorer island states and stop overfishing so that marine biodiversity is preserved.

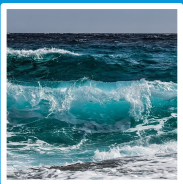
Why are microplastics dangerous?



Micro- and nanoplastics:

...are tiny granulates that stem, for instance, from decomposed plastic pieces, synthetic cloths, cosmetics and cleaners, etc... Once in the environment, microplastics do not biodegrade. They accumulate in animals, including fish and shellfish, and are consequently also consumed as food by humans. Studies have shown that it can lead to cancer, inflammation, and other toxic effects.

Source: echa.europa.eu



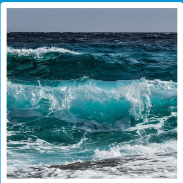
Did you know that it's estimated that global oceans contain between 100 and 142 million tons of trash, of which 60-80% are plastic particles?

Source: un.org

"I did not know that micro- and/or nanoplastics are used in most shampoos and face/body lotions. Now I am trying to buy only cosmetics and house cleaning products that explicitly state that no microplastics are included."



What is eutrophication?



Eutrophication:

...is excessive plant and algal growth due to the increased availability of sunlight, carbon dioxide, and nutrient fertilizers. It occurs naturally, however, human activities have accelerated the rate and extent of it, with dramatic consequences for drinking water sources, fisheries, and recreational water bodies.

Source: [nature.com](https://www.nature.com)



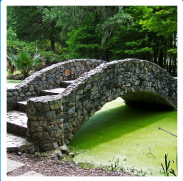
Did you know that roughly 80% of marine and coastal pollution originates on land – including agricultural run-off, pesticides, plastics and untreated sewage?

Source: [unesco.org](https://www.unesco.org)



"In the last years, there were constant news about algae slime in the Adriatic sea. First I thought it is just itchy, but finding out about its danger for biodiversity below water, I think it is frightening."

Who “owns” the sea?



Territorial seas:

In international law, the area of the sea immediately adjacent to the shores of a state (up to 22 km from the coast) are subject to the territorial jurisdiction of that state.

Source: [un.org](https://www.un.org)



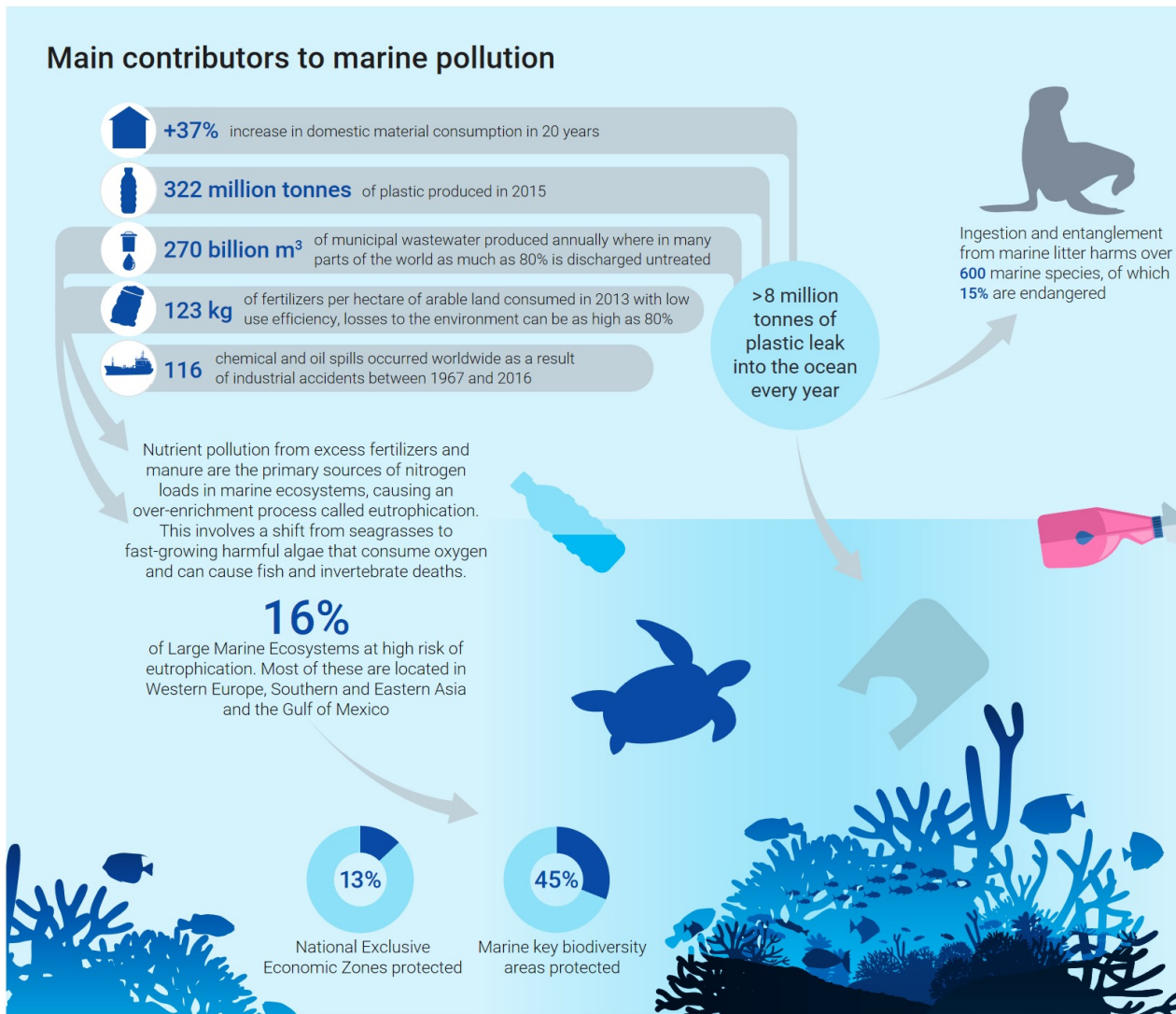
Did you know that international waters lie within the jurisdiction of the International Tribunal for the Law of the Sea and includes the responsibility to safeguard the waters and their living resources?

Source: [itlos.org](https://www.itlos.org)



“At the beginning of the pandemic, Europeans were confronted with pictures showing how water quality in Venice canals returned because of reduced human activity. While it is just one example, it shows us that there is an opportunity to revive the health of the seas. It was confirmed by the UN that the pandemic may provide marine environments the much-needed breathing space for them to start to recover.”

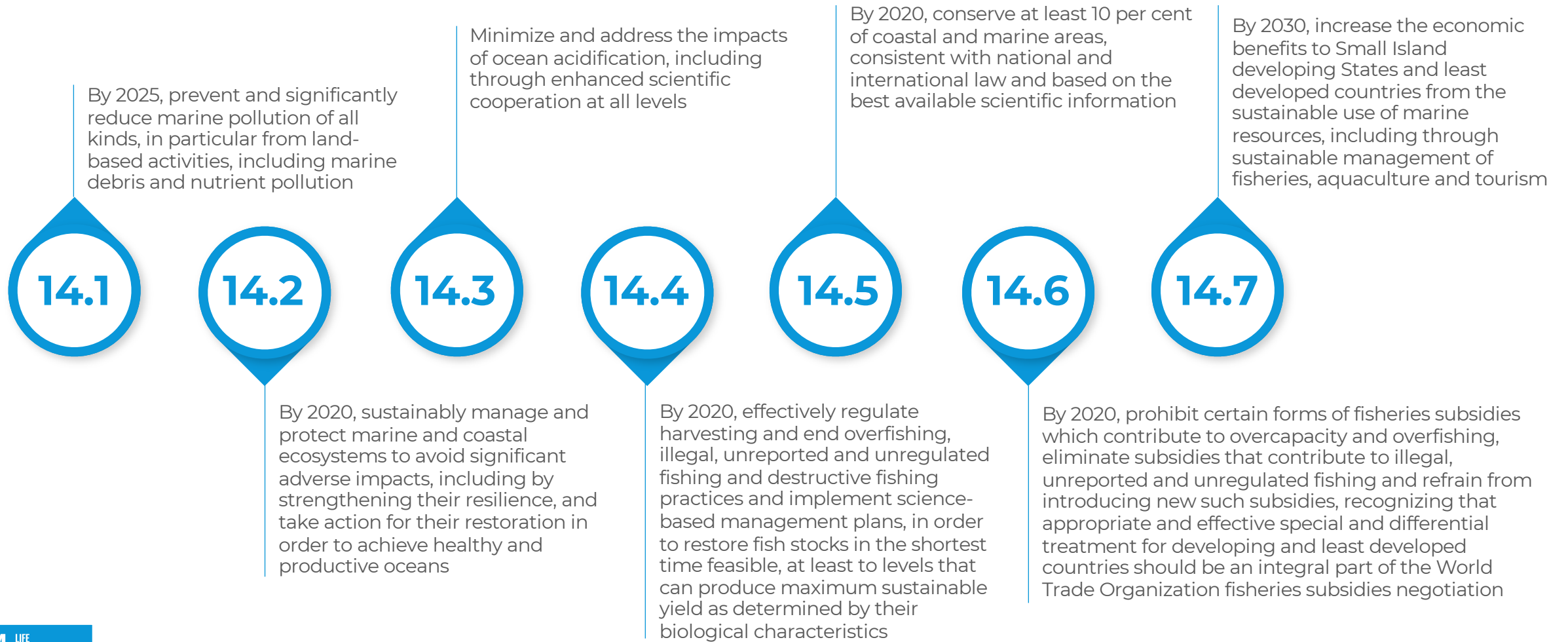
Model: Oceans and Marine Pollution



Did you know that in Europe, 1,677 out of 15,060 European species are threatened by extinction; most endangered are snails, clams and fish?

Source: earth.org

Subgoals: targets

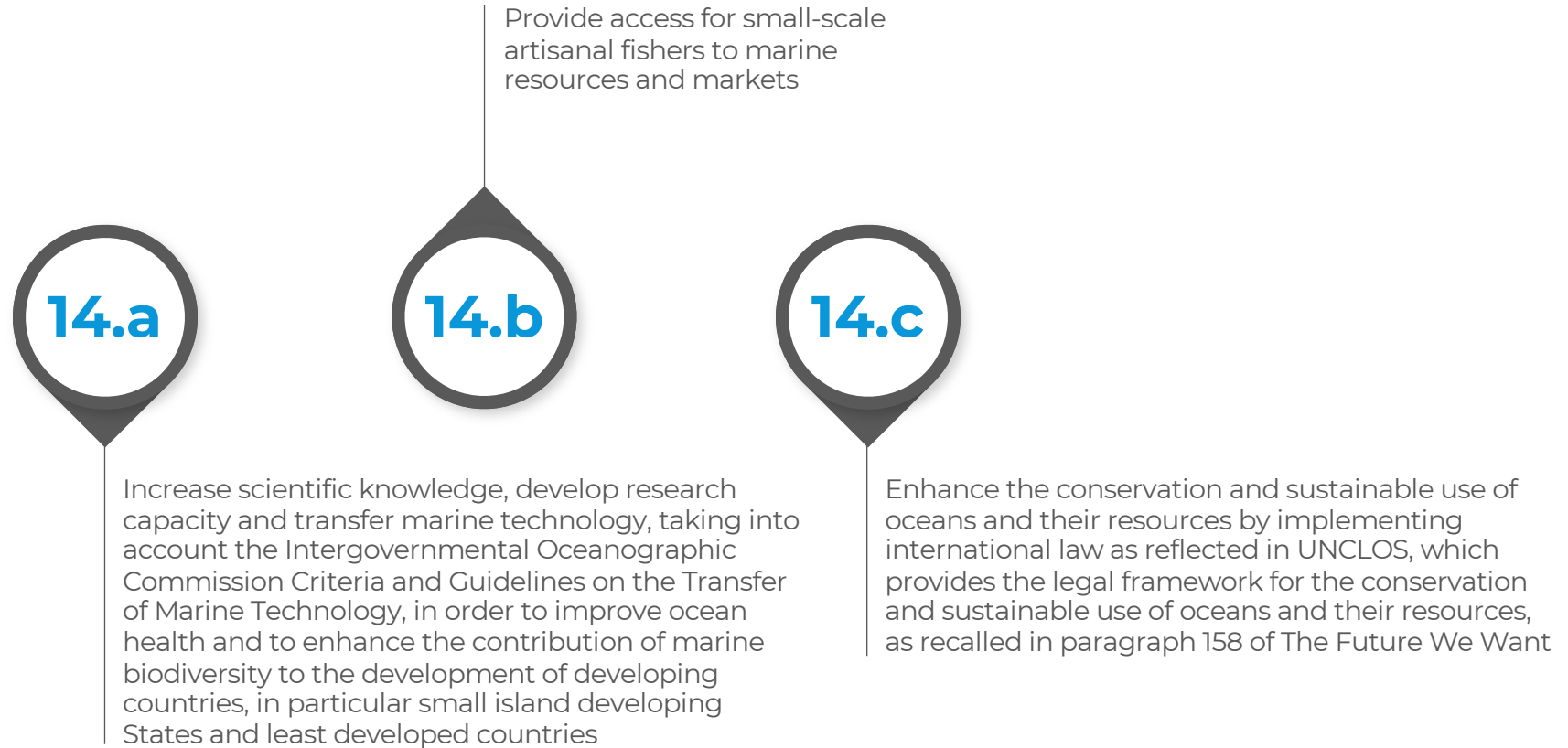


Source: un.org

Targets = Numbers, Measures = Letters



Subgoals: measures

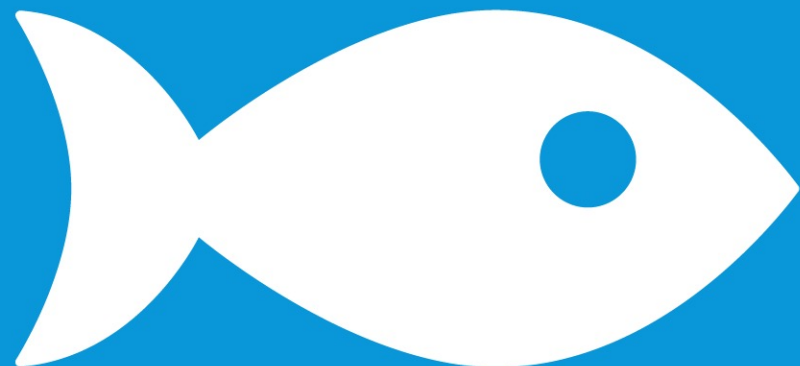


Source: un.org

Targets = Numbers, Measures = Letters



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**Current state of life
below water**

Report 2020

The Sustainable Development Goals Report 2020



Source: un.org

The Sustainable Development Goals Report 2021



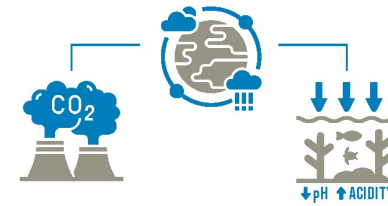
Source: un.org



CONSERVE AND SUSTAINABLY USE THE OCEANS, SEA AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT

BEFORE COVID-19

OCEAN ACIDIFICATION CONTINUES TO THREATEN MARINE ENVIRONMENTS AND ECOSYSTEM SERVICES



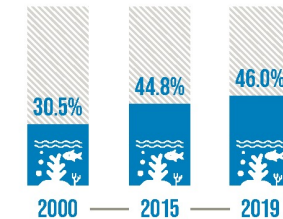
A 100-150% RISE IN OCEAN ACIDITY IS PROJECTED BY 2100, AFFECTING HALF OF ALL MARINE LIFE

COVID-19 IMPLICATIONS

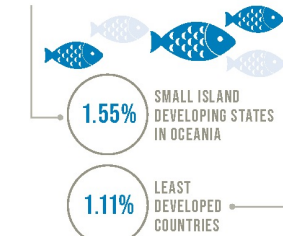
THE DRASTIC REDUCTION IN HUMAN ACTIVITY BROUGHT ABOUT BY COVID-19 MAY BE A CHANGE FOR OCEANS TO RECUPERATE



GLOBAL MARINE KEY BIODIVERSITY AREAS COVERED BY PROTECTED AREAS INCREASED



SUSTAINABLE FISHERIES CONTRIBUTE TO GDP



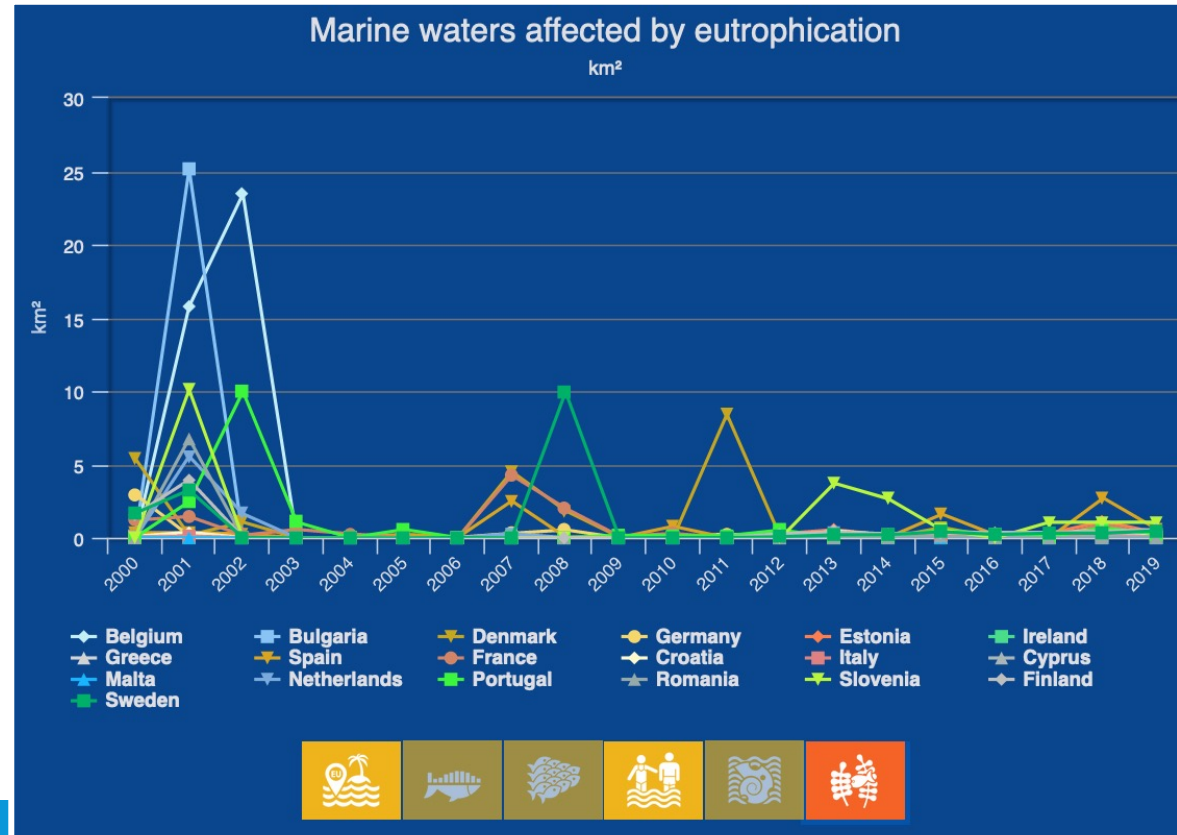
10x THE GLOBAL AVERAGE

97 COUNTRIES SIGNED THE AGREEMENT ON PORT STATE MEASURES, THE FIRST BINDING INTERNATIONAL AGREEMENT ON ILLEGAL, UNREPORTED AND UNREGULATED FISHING



Source: un.org

Some European statistics



Source: ec.europa.eu

Did you know that eutrophication is rather low at European vacation coasts?

Source: ec.europa.eu



"My family loves to visit Croatia in the summer and it's a beautiful sea, but it is not comparable with the quality of fresh water of Austrian lakes (even safe to drink)."



Implementation in Austria as of 2020

Target	National indicators (selected)	Trend
14.1	a) Index of coastal eutrophication b) Concentration of floating plastic debris in the sea	Not applicable to Austria
14.2	National exclusive economic zones of the marine and coastal ecosystems managed using ecosystem-based approaches	Not applicable to Austria
14.3	Ocean acidification	Not applicable to Austria
14.4	Fish stocks within sustainable levels	Not applicable to Austria
14.5	Protected marine areas	Not applicable to Austria
14.6	Implementation of international measures to combat illegal, unreported and unregulated fishing	UN level
14.7	Sustainable fishing practices	Inter-regional development assistance

Source: Statistics Austria. 8-year trend 2010–2018 (if figures missing, at least 7-year trend) in 4 categories (↑↗↘↓) if there is a clear target (quantitative/normative); ✓ (part of the) indicator target achieved; : calculation of trend not possible. More information about methodological questions can be found in the National Indicator Report 2020.

- > Even landlocked countries like Austria have an influence on oceans and seas through the use of marine resources and pollutant inputs via rivers.
- > Austria is in the process of implementing an ambitious set of measures to phase out microplastics in products.
- > At present, there is no national data available on this SDG. International reviews do not currently account for this issue in landlocked countries.



Did you know that Austria has its own info portal for checking the quality of tap water: trinkwasserinfo.at? In contrast to many other countries, Austria can meet its drinking water requirements entirely from protected groundwater resources.

Source: trinkwasserinfo.at

Main issues to solve in Austria as of 2020



Watch for pollutants such as micro- and nanoplastics and nutrients like nitrogen entering the marine ecosystems (Black Sea, North Sea) via river systems



Practice responsible consumption of fishery products



Participate in international efforts to support marine biodiversity, to mitigate ocean acidification, to guarantee sustainable sourcing, and to make environmental investments

Sources: bmk.gv.at and sdgcompass.org



Did you know that Austria is in the process of implementing an ambitious package of measures to phase out microplastics in products?

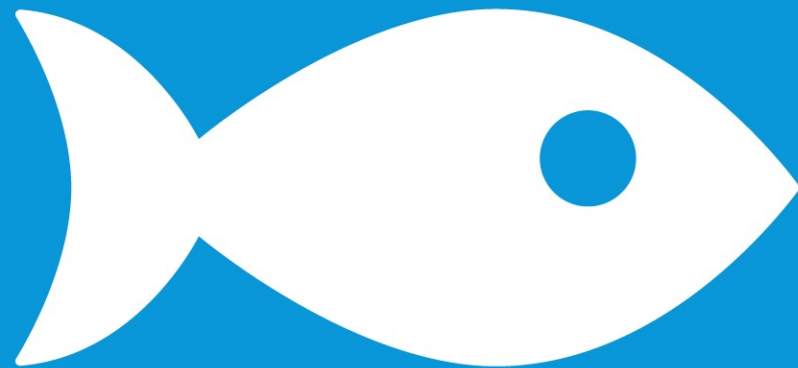
Source: un.org

Source: austria.info

"Mentioned in innumerable songs and much travelled, no river in the world flows through so many countries on its way to the sea as the Danube. This mighty river covers an astounding 2,889 km (1795 miles) from its source in Germany to the Black Sea. The Danube's course from west to east takes it through ten countries (Germany, Austria, Slovakia, Hungary, Croatia, Serbia, Romania, Moldova, Bulgaria, and Ukraine)."



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**Potential
contributions
Learning activity**

Before thinking about potential contributions...

- Imagine an organization (business).
What is the core purpose of this organization*?
- Who are this organization's internal and external stakeholders?
- How do trends concerning "life below water" impact this organization (its purpose, its stakeholders, its operation, its viability)?
- What challenges and/or costs emerge from this "impact of health issues" upon this organization?
- On the other hand, what opportunities and/or benefits arise?
- With all this in mind, what contributions** might this organization make to reach SDG 14 within its sphere of influence via inward and outward actions?

* Meant here are all sizes, all types

** Consider contributions inside the organization (referring to everything that is a resource to the organization and is directly or indirectly controlled by the organization, for instance, human resources, know how, monetary and material resources) and the outside of the organization (referring to everything outside of the organization that it can influence but lies outside of its control, for instance, policy change, partnering with other organizations, etc...)



Potential contributions by educational institutions

The purpose of educational institutions is to educate and train for life and for particular professional interests.

In terms of SDG 14, the tasks lie in protecting the oceans and marine resources through ocean literacy and action.



Did you know that Austrian university canteens offer only fish that is MSC/ASC certified and have earned the Austrian ecolabel-certification?

Source: [mensen.at](https://www.mensen.at)

Potential contributions by educational institutions, cont.

Potential inward actions:

- adjust educational programs for students to understand actions that lead to water pollution, micro- and nanoplastics in rivers and how land-locked countries still contribute to problems with “life under water” in the planet’s oceans
- implement measures to help the institution’s community reduce micro- and nanoplastics in their daily lives (i.e. ban plastic bottles in drink machines, or in give-aways, enforce green meetings)
- demand that only MSC/ASC certified fish is offered on campus

Potential outward actions:

- collaborate with other institutions on raising awareness about the need for reducing plastics everywhere
- lobby for sustainable fish procurement policies and laws for all public organisations
- co-research how to mitigate water pollution in rivers and how to eliminate micro- and nanoplastics from all waters

Potential contributions by municipalities

The purpose of municipalities is to plan, manage, and improve public work and services to the community.

In terms of SDG 14, the tasks for municipalities lie in regulating wastewater disposal and providing adequate internal policies for the protection of lakes and rivers.

Furthermore, municipalities should educate citizens on the topic of water pollution.



Did you know that Austria is producing 3.300 t of fish in aqua culture?

Source: bmlrt.gv.at



To look at the challenge internationally, visit:
nationalgeographic.com
and
theconversation.com



"When I was a kid, we loved to go the public natural pond for swimming, where we could also ice skate in winter. Nowadays, it is closed and only fishing is allowed, at least we can still go ice skating in winter."

Potential contributions by municipalities, cont.

Potential inward actions:

- adjust policy and project planning to adapt SDG 14 targets to lakes and rivers, even if indirectly
- train public staff in the topics related to “life below water,” including the responsibilities landlocked countries hold in spite of not having an ocean within their borders
- support local sustainability-oriented aquaculture producers of fish products

Potential outward actions:

- collaboratively raise awareness in the town’s industries about the importance of reducing pollution in rivers and lakes and how they can make a difference
- collaborate with different stakeholders toward elimination of micro- and nanoplastics in their daily activities
- lobby for policies and laws that minimize the production and use of plastics in human systems

Potential contributions by corporations and other organizations

The purpose of for-profit organizations (i.e. business) is to provide a service in exchange for resources (i.e. money). The purpose of non-profit organizations is to impact society in a certain way — both need to generate and/or collect adequate resources to pay for their operations and activities and/or make profit.

In terms of SDG 14, the opportunities for contribution may vary greatly between different types or sizes of organizations, but their core contributions to society for reaching SDG 14 are to eliminate the pollution of lakes and rivers, and oceans, and to responsibly use water and dispose of waste.



Did you know that — besides the obvious business impacts from SDG 14 on the fishing industry and food companies — there are wider implications for a number of sectors, including the tourism industry that relies so heavily on clean marine habitats, the plastics industry that has borne the brunt of public shaming over marine pollution, and the agricultural sector that is one of the main causes of eutrophication through fertiliser run-off?

Source: businessgreen.com

Potential contributions by corporations and other organizations, cont.

Potential inward actions:

- track the life cycle of products and materials to control for and reduce their potential discharge to the ocean
- reduce the amount of waste that could potentially enter the marine environment
- record and disclose information on the chemical and material usage within products, packaging, and processing systems to facilitate closing the loop

Source: sdgcompass.org

Potential outward actions:

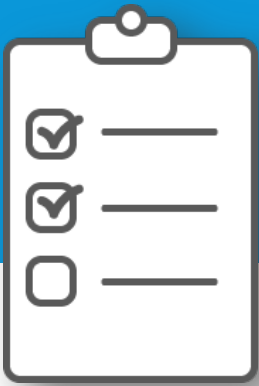
- collaborate with universities, governments and other businesses to find solutions for sustainable investments and waste management technologies that minimize the use of pristine water
- co-design with customers a disposal system that assures and facilitates proper waste management of products or services by end users, so that components of products do not end up in the oceans
- work with suppliers to eliminate micro- and nanoplastics from the supply chain

Source: theoceancleanup.com



"One of my colleagues just recently introduced me to support the project "Ocean-Clean-Up". The Ocean Clean-Up is a non-profit organization developing advanced technologies to rid the oceans of plastic and is developing a passive cleanup method, which uses the natural oceanic forces to rapidly and cost-effectively clean up the plastic already in the oceans. They have also developed the first scalable solution to efficiently intercept plastic in rivers before it reaches the oceans."

Activity: potential contributions by an organization of your choice



The purpose of xyz organization is to...

In terms of SDG 14, the tasks for this organization might be:

Potential inward actions:

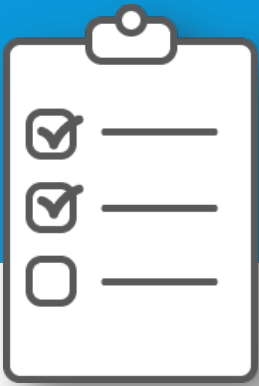
Potential outward actions:

How do inward and outward actions interact and impact each other?

Are partnerships necessary for the desired impact?



Activity: checking design of potential contributions

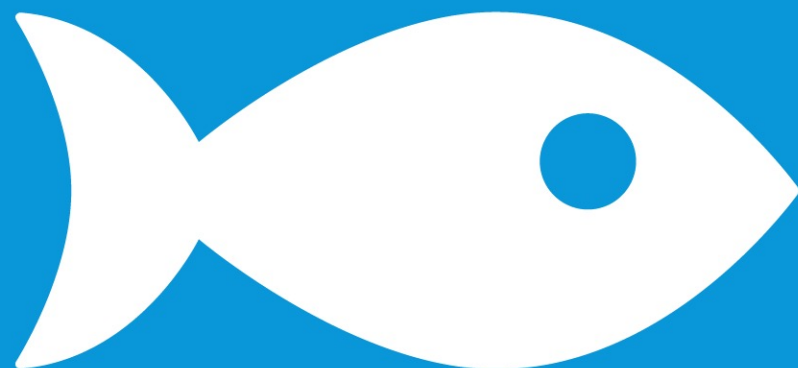


Returning to the opening questions:

- In which ways do the designed actions support the core purpose of xyz organization?
- In which ways do the designed actions serve the internal and external stakeholders of xyz organization?
- What balance between costs vs. benefits (or challenge vs. opportunity) can be noticed for xyz organization for “mitigating water pollution and/or eliminating micro- and nanoplastics in their products”?
- How do the designed inward and outward actions cohere and create synergy for xyz impact?



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**Reflection and
resources
Learning activity**

Reflection and some resources

- Why is conservation of “life under water” and sustainable handling of oceanic waters so important for life on the planet?
- How does agriculture impact oceanic waters?
- What can landlocked countries do to contribute to SDG 14?
- If you eat fishery products, where do they come from and how would you know that they are harvested sustainably?
- Where in your life can you notice plastics? How might you eliminate it from your life? What would need to happen to make that even possible?

Further Infos:

- [SDG definition of the UN](#)
- [Monitoring report](#)
- [SDG Compass](#)
- [Further SDG infos from the UN](#)
- [Federal Ministry of Agriculture, Regions and Tourism](#)
- [Resources about water pollution](#)
- [Platform water-pollution.org.uk](#)
- [Infos about oceans from the UN](#)
- [SDG material from the UNESCO](#)
- [SDG Report 2021](#)



Activity: SDG journey

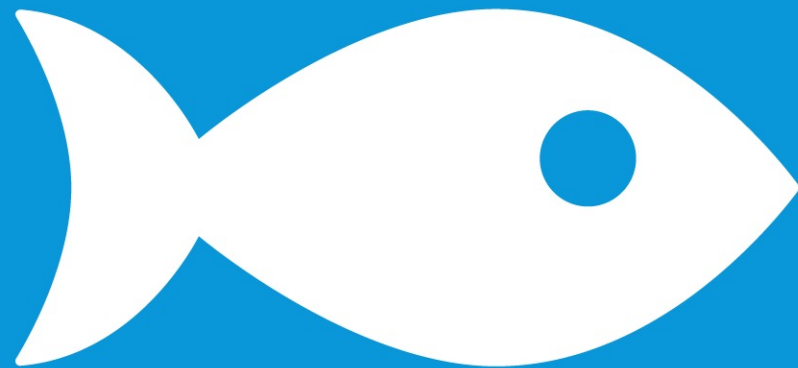
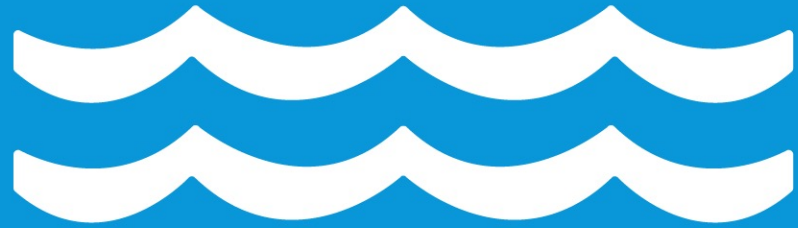
- > Put your SDG glasses on and observe your environment under the SDG 14 umbrella for a week. Yes, it is possible, even in a landlocked country! Think about your consumption of fishery products? How about microplastics in your cosmetics and cleaning materials? What companies do you buy from? Is there a river in your city? How is the water there? Where do your trash and wastewater go?
- > If appropriate and allowed, take pictures of the found circumstances and catalogue the photos (begin making a scrapbook) — they will lead to a final assignment at the end of the series. Before you venture out, it might be a good idea to inform yourself about legal responsibilities when taking photos of people: [oesterreich.gv.at](https://www.oesterreich.gv.at) (If you are not in Austria, look for the regulations of the respective country!)

Possible resource for online scrapbook (free for classrooms and non-profits): [canva.com](https://www.canva.com)



"Have you heard about CodeCheck App? There you can check the ingredients and contents of products."

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Sources**

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Sources

Slide 3:

- <https://germanwatch.org/en/node/14072> (download Arbeitsblätter)

Slide 4:

- <https://echa.europa.eu/hot-topics/microplastics>
- <https://www.un.org/pqa/73/plastics/>

Slide 5:

- <https://www.nature.com/scitable/knowledge/library/eutrophication-causes-consequences-and-controls-in-aquatic-102364466/>
- <http://www.unesco.org/new/en/natural-sciences/ioc-oceans/focus-areas/rio-20-ocean/blueprint-for-the-future-we-want/marine-pollution/facts-and-figures-on-marine-pollution/>

Slide 6:

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Slide 7:

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(scroll to and download SDG Policy Brief on Oceans, page 2)
- https://earth.org/data_visualization/biodiversity-loss-in-numbers-the-2020-wwf-report/

Slides 8 + 9:

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Slide 11:

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Slide 12:

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Slide 13:

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Slide 21:

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Slide 22:

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- <https://theoceancleanup.com/>

Slide 26:

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Slide 26, cont.:

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