



Science in the City

Building Participatory Urban Learning Community Hubs
through Research and Activation



This project has received funding from the European Union's
Horizon 2020 research and innovation programme under grant
agreement No 824466



LIFE BELOW WATER: WHY IT MATTERS

Over
3 billion
people
depend on
marine and
coastal
biodiversity
for their
livelihood



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14 LIFE BELOW WATER



The world's oceans – their temperature, chemistry, currents and life – drive global systems that make the Earth habitable for humankind. Our rainwater, drinking water, weather, climate, coastlines, much of our food, and even the oxygen in the air we breathe, are all ultimately provided and regulated by the sea. Throughout history, oceans and seas have been vital conduits for trade and transportation.

Careful management of this essential global resource is a key feature of a sustainable future. However, at the current time, there is a continuous deterioration of coastal waters owing to pollution and ocean acidification is having an adversarial effect on the functioning of ecosystems and biodiversity. This is also negatively impacting small scale fisheries.

Marine protected areas need to be effectively managed and well-resourced and regulations need to be put in place to reduce overfishing, marine pollution and ocean acidification.



What's the goal here?

To conserve and sustainably use the world's oceans, seas and marine resources.

Why?

Oceans provide key natural resources including food, medicines, biofuels and other products. They help with the breakdown and removal of waste and pollution, and their coastal ecosystems act as buffers to reduce damage from storms. Maintaining healthy oceans supports climate change mitigation and adaptation efforts. And have you been to the seaside? It's also a great place for tourism and recreation. Even more, Marine Protected Areas contribute to poverty reduction by increasing fish catches and income, and improving health. They also help improve gender equality, as women do much of the work at small-scale fisheries. The marine environment is also home to a stunning variety of beautiful creatures, ranging from single-celled organisms to the biggest animal ever to have lived on the Earth—the blue whale. They are also home to coral reefs, one of the most diverse ecosystems on the planet.



Sounds like a worthwhile thing to protect. So what's the problem?

Increasing levels of debris in the world's oceans are having a major environmental and economic impact. Marine debris impacts biodiversity through entanglement or ingestion of debris items by organisms, which can kill them or make it impossible for them to reproduce. As far as the world's coral reefs are concerned, about 20 per cent of them have been effectively destroyed and show no prospects for recovery. About 24 per cent of the remaining reefs are under imminent risk of collapse through human pressures, and a further 26 per cent are under a longer-term threat of collapse. Furthermore, improper marine management results in overfishing. The lost economic benefits from the fisheries sector are estimated to be around US\$50 billion annually. The UN Environment Programme estimates the cumulative economic impact of poor ocean management practices is at least US\$200 billion per year. In the absence of mitigation measures, climate change will increase the cost of damage to the ocean by an additional US\$322 billion per year by 2050.



What would it cost to correct this?

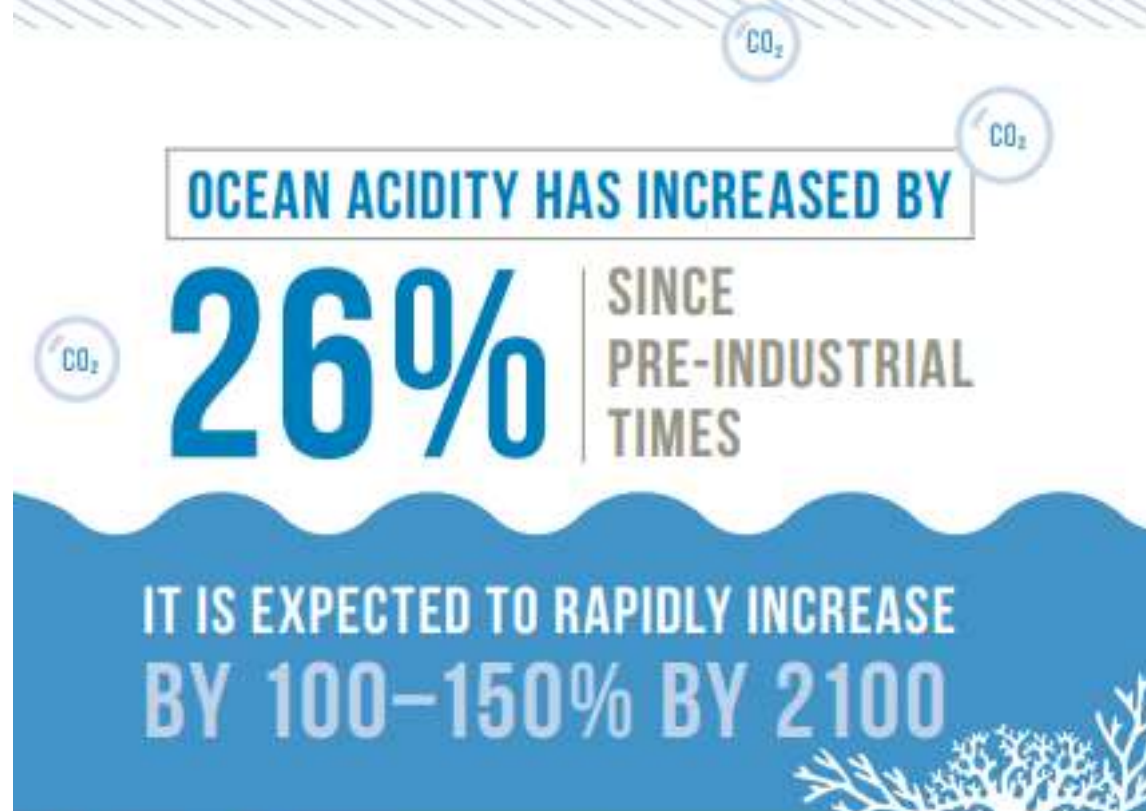
The costs of taking action largely are offset by the long-term gains. In economic terms, the Convention on Biological Diversity suggests that scaled up actions to sustain the global ocean require a US\$32 billion one-time public cost and US\$21 billion dollars a year for recurring costs.



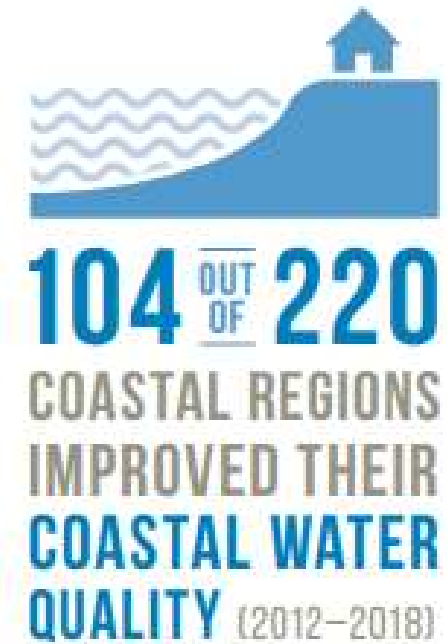
So what can we do?

For open ocean and deep sea areas, sustainability can be achieved only through increased international cooperation to protect vulnerable habitats. Establishing comprehensive, effective and equitably managed systems of government-protected areas should be pursued to conserve biodiversity and ensure a sustainable future for the fishing industry. On a local level, we should make ocean-friendly choices when buying products or eating food derived from oceans and consume only what we need. Selecting certified products is a good place to start. Making small changes in our daily lives, like taking public transport and unplugging electronics saves energy. These actions reduce our carbon footprint, a factor that contributes to rising sea levels. We should eliminate plastic usage as much as possible and organize beach clean-ups. Most importantly, we can spread the message about how important marine life is and why we need to protect it.

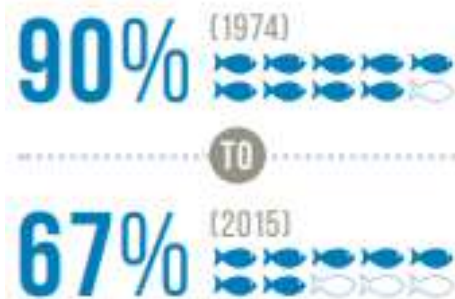




THE INCREASE IN OCEAN ACIDITY IS A NEGATIVE PHENOMENON. IT IMPACTS THE ABILITY OF THE OCEAN TO ABSORB CO₂ AND ENDANGERS MARINE LIFE.



THE PROPORTION OF
FISH STOCKS WITHIN
BIOLOGICALLY
SUSTAINABLE LEVELS
DECLINED FROM



87 COUNTRIES

SIGNED THE AGREEMENT
ON PORT STATE
MEASURES, THE
FIRST BINDING



INTERNATIONAL
AGREEMENT ON ILLEGAL,
UNREPORTED AND
UNREGULATED FISHING

17%
OF WATERS
UNDER NATIONAL
JURISDICTION
ARE COVERED BY
PROTECTED AREAS



MORE THAN
DOUBLE
THE 2010
COVERAGE LEVEL



Facts & Figures

- Oceans cover three quarters of the Earth's surface, contain 97 per cent of the Earth's water, and represent 99 per cent of the living space on the planet by volume.
- Over three billion people depend on marine and coastal biodiversity for their livelihoods.
- Globally, the market value of marine and coastal resources and industries is estimated at \$3 trillion per year or about 5 per cent of global GDP.
- Oceans contain nearly 200,000 identified species, but actual numbers may lie in the millions.
- Oceans absorb about 30 per cent of carbon dioxide produced by humans, buffering the impacts of global warming.
- Oceans serve as the world's largest source of protein, with more than 3 billion people depending on the oceans as their primary source of protein



Facts & Figures

- Marine fisheries directly or indirectly employ over 200 million people.
- Subsidies for fishing are contributing to the rapid depletion of many fish species and are preventing efforts to save and restore global fisheries and related jobs, causing ocean fisheries to generate US\$50 billion less per year than they could.
- Open Ocean sites show current levels of acidity have increased by 26 per cent since the start of the Industrial Revolution.
- Coastal waters are deteriorating due to pollution and eutrophication. Without concerted efforts, coastal eutrophication is expected to increase in 20 percent of large marine ecosystems by 2050.



Goal 14 Targets

14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans

14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels

14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics



Goal 14 Targets

14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information

14.6 By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation

14.7 By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism



Goal 14 Targets

14.A Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries

14.B Provide access for small-scale artisanal fishers to marine resources and markets

14.C Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want



Links

- [FAO Fisheries and Aquaculture](#)
- [UNEP Ecosystem Management](#)
- [Convention on Biological Diversity](#)
- [UN-OCEANS](#)
- [UNESCO Intergovernmental Oceanographic Commission](#)
- [UNDP Water and Ocean governance](#)
- [IMO](#)
- [Ocean Conference](#)
- [UN Division for Ocean Affairs and Law of the Sea](#)
- [UNDP – Oceans](#)
- [UNEP – Oceans](#)
- [Global Goals – Oceans](#)





To find out more about Goal #14 and the other Sustainable Development Goals, visit:

<http://www.un.org/sustainabledevelopment>



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