OCEANS OF THE FUTURE

1.1 THE SCIENCE WE NEED FOR THE OCEAN WE WANT– THE UNITED NATIONS DECADE OF OCEAN SCIENCE FOR SUSTAINABLE DEVELOPMENT

VIDEO DURATION– 06:55

The ocean is integral for our health, our economies, our climate and our weather. It lies at the core of the food and water security of the planet. And we are beginning to learn to recognise its enormous cultural and spiritual value.

Despite this importance, however, much of the ocean is now seriously degraded. Marine pollution, overfishing, ocean hypoxia and the accelerating impacts of climate change are pushing the ocean – and the wider Earth system – towards a possible sixth mass extinction event. If we continue to ignore these problems for another decade, we may push the ocean into a destructive cycle of degradation, recovery from which may not be possible for centuries or even millennia. The scale of human impacts are so great, and the changes to the ocean and the whole planet so fast, that the pace of scientific discovery and observations is not keeping up.

Addressing these issues requires not only political will, it also requires science-based solutions at a scale we have not seen before. Recognising this challenge, the United Nations has declared the decade of 2021 to 2030 a Decade of Ocean Science for Sustainable Development. This Decade will aim to mobilize the ocean community behind the ideas of sustainability.

This decision potentially opens a new era in oceanography, with the prospect of major changes in the way the ocean community works and how it can contribute to the future of our civilization. "The science we need for the Ocean we want" has become a motto of Decade 2030.

This Decade will mobilise resources and technological innovation in ocean science needed to deliver key societal outcomes:

- A clean ocean where sources of pollution are identified and removed
- A sustainably harvested and productive ocean ensuring the provision of food supply
- A healthy and resilient ocean where marine ecosystems are mapped and protected
- A safe ocean where people are protected from ocean hazards
- A transparent ocean with open access to data, information and technologies, and
- A predictable ocean where society has the capacity to understand current and future ocean conditions

Beyond the geographical, there are many different ways of representing the world on a map. One of them is to display the size of countries in proportion to some key indicator such as population, environment or economy.

Predictably, the world map of GDP is dominated by North America and Europe while Africa almost disappears.

The world map of fish and aquaculture production is almost unrecognisable, dominated by South East Asia. But what would a world map look like if the scale of countries is instead proportional to the ocean science publications? Such a map shows that major disparities exist in the capacity around the world to undertake marine scientific research.

While some countries benefit from sophisticated, cutting-edge scientific infrastructure, technology, and human capacity for science and innovation, many countries risk being left behind.

Our ability to observe the global coastal and shelf environment is not going to improve if modern marine technologies continues to be concentrated in a few centres of excellence. Scientific capacity development is one of the core objectives of the Decade, especially for the Small Island Developing States and the Least Developed Countries. And yet, no amount of scientific innovation and sustainability-focused research will ever help the planet without the political will and actions necessary to address issues like global carbon emissions, illegal and unregulated fishing, harmful industrial fishing subsidies, habitat destruction, global reliance on a single-use plastics or proper governance of the High Seas.

The success of ocean science in achieving a healthy, sustainable and resilient ocean critically depends on concrete political actions to achieve all 17 of the UN Sustainable Development Goals, without prioritising one over another.

The Ocean Science Decade is starting during a global pandemic which is bringing much suffering around the world. But this coincidence of timing also provides perspective and an opportunity to re-think the future of the planet and our ocean. How will the world emerge from the pandemic? Will COVID-19 give us a chance to restore the health of the ocean, or will it be pushing us further towards its unsustainable use to aid economic recovery?

COVID-related reductions in fishing pressure, shipping, carbon emissions and coastal tourism have undoubtedly brought short-term benefits to marine ecosystems. However, the slowdown of the ocean economy has seriously impacted the livelihoods and food security of hundreds of millions of people reliant on the ocean.

At the same time, there are growing reports from around the world that disposable personal protective equipment (PPE) has created a new kind of plastic pollution – COVID pollution, with disposable masks floating like jellyfish and waterlogged latex gloves scattered across seabeds. Problems such as these are becoming ubiquitous after millions around the world turned to single-use plastics to combat COVID-19.

Perhaps the greatest risk resulting from the COVID-19 pandemic would be that we lose sight of the most fundamental challenge facing humanity – reducing our greenhouse gas emissions to

levels that will keep global warming below 1.5°C. How the fossil fuel sector emerges post-COVID is of tremendous significance not only for the ocean but the entire climate change agenda. Is there a chance that 'peak oil' demand could occur in 2020 compared with previous projections of more towards 2030?

Here is Peter Thomson, the UN Secretary-General's Special Envoy for the Ocean:

"When the coronavirus pandemic retreats, it is the high road to a sustainable world that we must take, not the low one returning to planet-polluting single-use plastics, profligate burning of fossil fuels and wanton denigration of nature. Human security demands that we build back better - the recovery road to a blue-green future lies ahead."

What will **Ocean Science Decade 2030** bring us?

- We should aspire to grow our ocean science capacity, and to expand it into the less developed countries that need it most.

- We should strive to take concrete action to decrease our carbon dioxide emissions and climate change, as well as take measures to reduce other critical ocean stresses.

- And we should use the unexpected perspective granted by the ongoing pandemic to transform ocean science for a better world, both for all of us and for the natural biological communities we share the planet with.