



Ocean Risk

The Ocean sustains life on Earth and millions of people around the world are dependent on the Ocean for their livelihoods. If the ocean was an economy, it would be the seventh-largest economy by GDP in the world. The United Nations' Sustainable Development Goal, SDG 14, acknowledges the Ocean's crucial role and commits member countries to 'conserve and sustainably use the oceans, seas and marine resources for sustainable development'. Yet, the Ocean is changing faster than at any time in the past 65 million years as a result of unsustainable human activities which are increasing the risks to economies, cultures, societies and our environment. Assessing, reducing and managing these risks, building resilience in Ocean ecosystems and coastal communities and developing innovative and scalable solutions must now be prioritised by Governments, policy makers and multiple other stakeholders including the financial sector.

What is Ocean Risk?

- Ocean risk is the term used to describe the economic and social challenges and risks we face from the huge environmental changes impacting our Ocean and how these increasing Ocean risks are exposing coastal communities, cities, or even countries to much greater vulnerabilities.
- Hazards include extreme weather events, sea level rise, ocean acidification and deoxygenation, all of which are increasing as a result of the continued emissions of CO₂ into the atmosphere and the consequent rise in temperatures and changes in Ocean chemistry.
- Other risks (called risk- multipliers) include those associated with land-based marine pollution such as microplastics entering our food chains and nutrient waste from industrial agriculture causing dead-zones and overfishing.
- Coastal communities in Small Island Developing States, developing countries and other low- lying areas are especially vulnerable to these emerging and intensifying Ocean threats.
 - 60% of the world's population lives within 60km of the coast.
 - 25% of global population lives less than 10 m above sea level.
- These changes also are not gender neutral - they have disproportionate impacts on women and girls.
- We all need to be aware of these increasing Ocean risks and identify where and

how the impacts of these hazards can be reduced by taking pre-emptive action that reduces exposure and vulnerability and builds resilience to these changes.

- Investing in nature is one of the most cost-effective and efficient measures that can be taken to tackle ocean risk.

The escalating costs of business-as-usual

- Ocean risk raises the potential for stranded assets. “Stranded asset” is an economic term that refers to something (a piece of equipment, resource, or infrastructure) that once had value, but no longer does due to some kind of change - such as changes in technology, markets or exposure to a hazard.
- In monetary terms, declines in Ocean health and services are projected to cost the global economy \$428bn per year by 2050 and \$1.979tn per year by 2100.
- It is projected that by 2050, 800 million people will be at risk of coastal flooding and storm surges.
- This will have lasting impacts on food security and population stability. Some West African countries could see fish stock declines by 85% with far-reaching food security and national security implications, including mass migration to cities and north to Europe, undermining social, ecological and economic resilience.
- In the last decade, insurers alone have paid out more than \$300 billion for coastal storm damage – but this is dwarfed by amounts paid out by governments and taxpayers.
- Business-as-usual cannot be allowed to continue as it not only risks destroying Ocean ecosystems and the resource base on which future economic prosperity depends, but it comes with a huge economic cost to governments and society.

Addressing Ocean Risk: What needs to happen?

- Slashing emissions in line with the Paris Agreement, establishing networks of strongly and fully protected marine reserves, ending overfishing and eliminating illegal and destructive fishing practices are all key actions needed to reduce Ocean risk.
- However, finance, investment and insurance also have a special role to play to reduce Ocean risk.
- To take cost effective action and address the escalating risks it is crucial to assess the often-overlooked value of ocean ecosystems and the associated ecosystem services they provide.
- Natural ecosystems underpin the global economy, for instance coral reefs alone have been estimated to generate USD 36 billion per year for the global tourism industry.
- It is only in recent years that various methodologies have been developed that put a monetary value on the crucial goods and services that ecosystems provide such the food we eat, the water we drink and the air we breathe. This accounting for ‘natural capital’ facilitates better decision making.
- Accelerating research and using data to better understand, analyse, predict, model and manage ocean risk will help unlock much-needed finance to fund the

protection of this valuable natural capital.

- To help increase global investment and provide a framework for sustainable policy decisions, WWF, the European Commission and partners have developed the [Sustainable Blue Economy Finance Principles](#) and are working on translating these so that they can be used to underpin investment decisions by investors and asset managers.

Nature-Based Solutions & Coastal Ecosystems – reducing risk and building resilience

- The importance of coastal ecosystems such as reefs, mangroves, seagrass beds, saltmarshes and other marine ecosystems to economies and coastal communities are huge. They provide a significant range of benefits including sequestering and storing carbon, sustaining biodiversity, supporting fisheries and providing coastal protection from extreme weather events.
- [Scientific findings](#) indicate that nature can supply up to approximately 30% of the carbon abatement necessary to stabilize global temperatures by 2030.
- Nature-based solutions such as salt marshes and mangroves have been shown to be 2-5 times cheaper than engineering coastal defence.
- [Research by the Nature Conservancy](#) estimates that mangroves reduce annual flooding to more than 18 million people. Without mangroves, 39% more people would be flooded annually, and flood damages would increase by more than 16% at an extra cost of US \$82 billion.
- Coral reefs are biodiversity hotspots protecting coasts from storm surges – they can reduce incoming wave energy by 97%, but a 1 metre loss in coral height can double the damage to coastlines.
- Despite the importance of coastal ecosystems such as mangroves and coral reefs as a natural defence against the impacts of environmental change, there has been little investment put into their protection and restoration.
- Nature-based solutions have been consistently found to be more effective than their “grey” (or built) counterparts, yet most global investment in coastal resilience has gone to ‘grey infrastructure’ such as seawalls which often has negative impacts on coastal ecosystem health.
- This type of investment in grey infrastructure may not be cost effective for risk reduction when compared to natural (such as coral or oyster reef restoration) and hybrid (such as placing artificial new, hard substrate for natural recolonization) alternatives.

The Ocean Risk and Resilience Action Alliance (ORRAA)

- Cooperation between governments, financial institutions, the insurance industry, environmental organizations and others is needed to unlock greater private investment to address Ocean risk and build resilience into the regions and communities that need it most.
- The Ocean Risk and Resilience Action Alliance (ORRAA) has been established

to do exactly that- to forge relationships between these different actors and drive financial innovation in the sphere of Ocean risk.

- ORRAA is designed to drive investment into coastal natural capital by pioneering ground-breaking finance products that provide incentives for blended finance and private investment into vulnerable coastal areas and small island developing states.
- Today there are just a handful of finance products, but more need to be piloted and scaled. The different types of finance mechanisms which are being developed to leverage public and private finance to build coastal resilience include nature-based insurance tools which provide funding for ongoing maintenance and post-storm restoration of insured coastal ecosystems i.e. natural capital.
- Other finance mechanisms include green/blue bonds which provide upfront capital for investment in coastal resilience. These are contingent on some cash flow to repay private investors.
- In some countries, debt restructuring may be an option. This provides annual cash flow through a trust fund mechanism for investments in coastal resilience, and additional fiscal space for indebted countries.
- To learn more about ORRAA, visit oceanriskalliance.org