

Thank you, Moderator, Ms. Leinen

We heard the extraordinary presentation from the distinguished panellist.

And very comprehensive discussion by Mr. Cameron Diver.

They have highlighted the role of scaling up actions to increase scientific knowledge, developing research capacity and transfer of marine technology for the implementations of Goals 14

By this opportunity, I want to point out several things related to the Scaling up ocean action based on science and innovation for the implementation of Goal 14

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In many countries, billions of peoples have personal connections to the ocean.

For coastal communities, the ocean not only a source of food and livelihoods, but also an intrinsic part of their culture and heritage.

Many countries rely on the ocean for their national economy, protein supply, food, medicine, tourism and many more.

The ocean is our life.

Therefore, to ensure a healthy and equitable future, the oceans need sustainable management and comprehensive ocean research and sciences.

Disparities persist in scientific capacity between developed and developing countries and contribute to the uneven distribution of scientific knowledge. States that are most vulnerable to ocean changes often have the least scientific capacity or the least access to ocean science and technology.

The major priority gaps including:

1. Access to the information and references.
Students, researchers in all countries need access to the global reputed journals, books, open information's, and other research in ocean field to be able to contribute new knowledge.
Access to knowledge is clearly a fundamental requirement for the development of ocean science.
It is difficult to see how the development goals can be effectively achieved without ensuring that all countries (developed, developing, small islands country) have same access to the latest relevant scientific knowledge and information's.

2. Infrastructures and equipment's
Infrastructure enables many of the scientific and technical applications that address aspects of the ocean sciences.
The ocean research landscape varies between countries, with differing levels of ocean science infrastructure. Research facilities largely influenced by different types of research organizations (national, federal and/or academic).
In developing countries, many centres, and universities have existing scientific infrastructures and equipment's – but with few areas reaching international levels.
In additions, some infrastructures are scattered in different research centre or organizations.

A substantial and dynamic research infrastructure and equipment's are necessary to contribute to ocean science developments.

3. Financial support

Government funding for ocean science remains modest overall. Ocean science funding is facing sustainability challenges in several countries especially in developing countries.

To support sustainable development, continuous ocean research supported by long-term public and private funding will need to be secured.

Especially research based in countries that are most vulnerable to ocean changes and impacts and dependent on marine resources, in particular small islands developing states

4. Capacity building

Many countries may not have the domestic expertise across a vast range of scientific disciplines and technology areas. International capacity-building, collaborations, exchange scientist activities could increase scientific and technological cooperation among countries

In addition, indigenous and local knowledge holders should be included in this process and contribute to addressing these gaps

1. Engaging indigenous and local knowledge holders as partners across ocean disciplines

- The indigenous knowledge systems are important for managing the marine natural resources in Indonesia,
- science and life strategies of intangible activities carried out by the indigenous people or local communities in responding to various problems in meeting their needs.
- For example, *sasi* which is known in Eastern Indonesia which is a traditional and local knowledge designed to preserve the environment and safeguard the sustainability of natural resources.
- The existence and performance of Sasi system and other indigenous knowledge practices, should be recognised, protected, the levels should be elevated, and more engage with the sciences.

2. Increase the number of scientific cruises (expeditions) especially in outer islands, small islands help the scientist and the indigenous people in the island to identify the diversity, ocean process, resilience index of the islands, conservation, blue economy potency, and many oceans process and also ocean lives.

Countries and communities that are most vulnerable to ocean changes and impacts and dependent on marine resources, in particular small islands developing states can be supported in generating new knowledge, achieving more robust science and knowledge co-production and the capacity needed to apply science in decision making.

Support in generating new knowledge, achieving more robust science and knowledge co-production can be achieved with many steps.

The first one is for science development, including:

1. Open data, information and references to support science and technology development
2. Open infrastructures and technologies
3. Researcher mobility schemes
Collaboration and mobility are a key part of the business of science including ocean sciences. International mobility ensures a circulation of skills and ideas around the world, and 'brain circulation' in the global research system. It enable the scientists follow the best science and the best resources.
It is crucial that government, policies, and UN decade support researcher mobility
4. Cooperation and Collaborations
5. Global engagements

The society especially coastal community which are the most vulnerable to ocean changes and impact and dependent on marine resources should be included.

1. Ocean literacy

Growing evidence supports the critical role of ocean literacy as strategic ways that can tackle inequalities in people's participation in the science and technology of ocean field, especially in developing states and countries that are vulnerable to the ocean changes.

Ocean literacy can impact people and communities in several ways: by stimulating ocean science and technology learning, awareness, and interest; by actively involving coastal communities in addressing the Sustainable Development Goals and other issues such as conservation, climate change, fisheries. It is essential and prerequisite component of the ocean science.

Ultimately, ocean literacy become relevant in developing more access to science and technology.

Generally, young generations approved science literature that are engaging, entertaining and paired with a science activity.

However, many countries have limited number of engaging and entertaining ocean literature especially for young generations.

Therefore, strong commitments and creative efforts should be made to support and develop ocean literacy.

2. Citizen science

Oceans' citizen science projects are collaborations between ocean scientists and interested members of the public.

Through these collaborations, citizen scientists can help and contributed to the important oceans' scientific discoveries from conservations, aquacultures, post-harvest, biological process, and many more.

The oceans and seas are essential for human well-being. Through activities of Scaling up actions to increase scientific knowledge and develop research capacity and transfer of marine technology, we will be able to achieve goals 14 such as sustainable fishing, support small scale fisheries, conserve coastal and marine areas, increase the economic benefits from sustainable use of marine resources. Therefore, nations are able to increase the rates of employment, decreasing poverty, malnutrition, and pollution.

Blue food from the oceans obtained by sustainable fishing and aquaculture are highly nutritious. Many studies have correlated the blue food consumptions, humans' health, longevity. The blue foods such as seaweeds, marine fish, sea cucumber due to their nutrition's will certainly help to prevent stunting of many children in many vulnerable countries.

Finally, ocean-based economies provide more opportunities for the empowerment and employment of women, who make up the majority of the secondary activity's workforce in marine fisheries and aquaculture. The results of increased female employment include the strengthening of the economic vitality of small and isolated communities and the enhancement of the status of women in developing countries.

I think that's all from me

THANK YOU VERY MUCH FOR YOUR KIND ATTENTION