Ministry of Economic Development
of the Russian Federation



# FINAL REPORT

## "RUSSIA- INDIAN OCEAN RIM ASSOCIATION (IORA) WORKSHOP ON BLUE ECONOMY: MODERN CHALLENGES AND PERSPECTIVES FOR THE INDIAN OCEAN REGION"

**2023**
**MOSCOW**

# Background

Oceans are the world's largest ecosystem, covering about 72% of the earth's surface, with marine systems being central to global population as providing immense food, minerals, and energy resources as well as livelihood and employment opportunities.[1]

According to the experts' estimates the global value of the oceans amounts to $24 trillion, while oceans and seas provide food for 10-12% of the world's population. In accordance with the United Nations (UN) Oceans Forum data, the ocean supports the livelihoods of more than 3 billion people, most of them living in developing countries. The export value of ocean-based goods and services is estimated at $2.5 trillion, and more than 80% of merchandise trade by volume is transported by sea.[2] From the climate perspective, the oceans absorb up to 30% of the carbon dioxide produced by humans.[3]

Amidst these figures, interest to the "Blue economy" concept is steadily growing. It is embedded into a number of national development strategies. It is similarly high on the agenda of many international organizations. Thus, the UN proclaimed the aspiration to "Conserve and sustainably use the oceans, seas and marine resources" as the Sustainable Development Goal (SDG) №14. The body also announced a Decade of Ocean Science for Sustainability (2021-2030) to acknowledge the importance of sustainable development, improve the overall ocean health and raise awareness of the need to sustainably develop and manage oceans, seas, and coasts.

The benefits of developing the Blue economy strategies go beyond direct ones and provide people with a number of spillover opportunities. For instance, renewable ocean energy has enormous potential: wave energy, tidal energy, offshore wind energy, marine solar energy, and marine bioenergy. The ocean floor contains the minerals that are crucial for the "green transition", at the same time marine biotechnology allows the development of new pharmaceuticals, medicines, cosmetics, feed additives for animal husbandry, which reduce methane emissions into the atmosphere.

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[1] https://www.iora.int/en/priorities-focus-areas/blue-economy; https://www.ipcc.ch/report/ar6/wg2/chapter/chapter-3/
[2] https://unctad.org/isar/news/un-oceans-forum-chart-course-blue-deal-economic-recovery-and-sustainable-growth
[3] https://www.economy.gov.ru/material/file/f8cd89260c5d94a09124414d0bd748b9/Summary%20Blue%20economy%20Eng%20%281%29.pdf

Nevertheless, the development of the concept faces a number of challenges: climate change, pollution of the oceans, overexploitation of living resources of the ocean and biodiversity losses. The rapid degradation of the world's ocean ecosystems and the depletion of its resource base due to increased environmental and economic pressure inevitably affect the well-being and health of people living in the countries that depend on the oceans and seas.

Apart from global challenges, there are also local ones pertaining to the issue of how to adjust Blue economy strategies despite lacking international consensus on respective terminology. Comparative analysis of the level of Blue economy development is impeded by absence of sectoral unity in understanding what the "Blue economy" is. Apart from difference in "blue taxonomies", there are also divergences in governance mechanisms and measurement methodologies. Similarly, the concept provides variety of approaches in terms of priorities (sustainable development, decarbonization, conservation of biodiversity, food security, social well- being), key policy focus (spatial development, investment in science), areas of development (skills, innovation, emerging markets and technologies, clusters and coastal territories) and regulation (illegal trade).

As a result, the Blue economy became part of both IORA's and Russia's agenda. For IORA the interest was specifically emphasized at the 14th IORA Ministerial Meeting in Perth on 9 October 2014. Since that time, IORA implemented several capacity building programs covering a wide range of related areas as well as launched the IORA Working Group on the Blue Economy. Among the guiding documents adopted by IORA are Declaration on enhancing Blue Economy Cooperation for Sustainable Development in the Indian Ocean Region (2015), Jakarta Declaration on Blue Economy (2017) and the Dhaka Declaration on the Blue Economy (2019).

For Russia, it was 2022 when the country first released a glossary of terms and definitions related to the Blue economy. However, even beforehand the country dealt with sustainable management of economic sectors related to marine and coastal ecosystems under respective strategies on maritime activity development, and has gained substantial experience in terms of unlocking the potential of Blue economy.

On June 8, 2023 the parties met virtually within the first Russia-IORA initiative aimed at analysing and preparing an overview of respective national and regional approaches on behalf of Russia, IORA Member States and IORA Dialogue Partners. The one-day workshop helped parties get acquainted with each other's definitions, regulatory approaches, government

measures so that to consequently identify potential areas for further cooperation in the field of Blue economy.[4]

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[4] The event gathered representatives of public and private sector as well as academia from 26 countries – IORA Member States and IORA Dialogue Partners.

# Welcoming Remarks

In his welcoming remarks **Mr. Nikita Kondratyev**, Director of Department of Multilateral Economic Cooperation and Special Projects, Ministry of Economic Development of the Russian Federation, emphasized the timeliness of the workshop's conduct.

The speaker noted that Russia is underpinning the Blue economy development through sustainable management of economic sectors related to marine and coastal ecosystems. One of the priorities of the country is an update of approaches to planning the development of coastal areas. This includes conservation of aquatic biological resources and their sustainable use, development of the state environmental monitoring system and ensuring the safety of marine infrastructure.

Mr. Kondratyev underlined that in order to contribute to the Blue economy development efforts in 2021 Ministry of Economic Development of the Russian Federation published the first of its kind national analytical report with the overview of respective international sustainable governance practices. A year later the first glossary of terms and definitions related to the "Blue economy" was elaborated.

In the same 2022, the topic received special attention due to the adoption of the new Maritime Doctrine – within the Presidential Decree. As a result, the marine spatial planning as well as development of the regulatory framework came to the fore.

Mr. Kondratyev mentioned that, keeping in mind challenges and opportunities of the Blue economy model, Russia does see substantial room for cooperation with IORA partners. He emphasized that such areas as maritime transport and navigation, sustainable coastal development and tourism, sustainable fisheries, combating marine pollution, and joint ocean resource research are indeed worth discussion.

The greeting to participants of the event also came from **Ms. Rina Setyawati**, Director for Blue Economy and Fisheries Management of IORA Secretariat. She highlighted that the first Russia-IORA Workshop was held right on the World Oceans Day, which is traditionally celebrated on June 8.

Ms. Setyawati set the context for the workshop describing the evolution of IORA and key milestones on its way to become one of the most influential fora for discussing Blue economy issues as well as implementing capacity building activities. It is since 2014 that the Association has committed to promoting the sector that embraces social, economic and

environmental dimensions of growth. As of now, there are six priority pillars that the countries focus on and welcome cooperation on: fisheries and aquaculture, renewable ocean energy, seaports and shipping, offshore hydrocarbons and seabed minerals, marine biotechnology, R&D, and tourism.

IORA is not only strengthening intra-regional ties but also works hand in hand with Dialogue Partners, one of them being Russia. Potential of collaboration is yet to be unveiled to a full extent.

**Session I**

**"Implementation of Blue economy principles: national approaches"**

*With the interest to the Blue economy growing, economies are applying diverse methodologies to unveiling the potential of the sector, stemming from diverse taxonomies and metrics. The session provided a platform for sharing information regarding the national approaches towards the Blue economy, including particular development strategies, formulated goals, policies, and priority areas of development. The session highlighted interconnection in the spheres of mutual interest and areas of potential convergence.*

**Speaker 1 – Ms. Cheryl Rita Kaur**

Ms. Cheryl Rita Kaur is Research Fellow and Head of the Centre for Straits of Malacca, Maritime Institute of Malaysia (MIMA) – the national government policy research institute that stands as a national focal point for research in the maritime sector. She specializes in marine environmental/resource management, ocean governance, marine pollution, and green maritime industry practices, locally and abroad. She previously headed the Environment Division at the Institute, before moving on to focusing on the multiple research opportunities in the Straits of Malacca, as a vital sea-lane of communication with strategic maritime interests.

Ms. Kaur emphasized the importance of effective ocean governance and cooperation for the well-being of countries in the region. She welcomed a review of approaches that would facilitate inclusive and sustainable ocean resource management and communities' well-being in accordance with international and regional frameworks.

The speaker specifically underlined the role of such activities as maintenance and upgrade of shipping routes, intra-regional and global trade, development of living and non-living resources, economic/industrial activities, infrastructure development. All these sectors demonstrate the multiplier effect which makes it difficult to measure the maritime sector's contribution to GDP and countries' development.

Malaysia is one of the IORA Member State with a strong interest in the Blue economy concept, particularly within the scope of the costal border with the Strait of Malacca and South China Sea.

Malaysia has significant experience in the realm of Blue economy agenda, which is permanently nurtured by respective unilateral and multilateral research activities. In this regard, Ms. Kaur shared the results of preliminary assessment on Blue economy potential recently conducted by Malaysia within the ASEAN activities.[5]

Among others, the study set the goal to define the value of the ocean and evaluated it in around $1.5 trillion in value added. It also revealed that there are 61 million people directly employed in the ocean economy. As for blue capital and coastal and marine ecosystem services, the region is home to a third of the world's mangrove forests, seagrass beds, and coral reefs – which together with the tidal flats and salt marshes, are estimated to be worth around $2 trillion.

During the assessment exercise Malaysia faced a number of challenges. Firstly, the necessity to collect and then manage all the data properly, which requires standardizing the methodology used to provide a baseline. Secondly, there is an absence of definition accepted by all ASEAN (and IORA) countries for further understanding of common principles behind Blue economy.

Concluding her presentation Ms. Kaur underlined the key steps countries are recommended to take. They are to harmonize policies, mainstream risk assessments, increase public awareness on the Blue economy concept. At the same time, regional partners could benefit from greater engagement of private sector and academia in policy making, as well utilization of targeted financial instruments.

**Speaker 2 – Mr. Sergey Nikonorov**

Mr. Sergey Nikonorov is Doctor of Economics and Professor at Faculty of Economics at Moscow State University. He currently fulfils the duties of the Director of the Center for Research on Economic Problems for the Arctic Development. Mr. Nikonorov has served as a member of the Public Council under the Federal Agency for Subsoil Use, and a member of the Working group on promotion of MSMEs in the field of water resources within the Scientific and Technical Council of the Federal Agency on Water Resources.

The speaker focused on distinction of the Red, Green and Blue economy concepts based on their practical and theoretical features.

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[5] See "State of Ocean and Coasts".

The Red economy is characterised by the excessive consumption of fossil fuels such as coal, oil, gas to support the production of energy and manufacturing of goods which lead to negative environmental consequences including emission of greenhouse gases, generation of both industrial waste and solid municipal waste, etc.

To the contrary Green economy concept is intended to produce sustainable results through the means of alternative energy sources (solar and wind power, nuclear and biomass energy). However, the Green economy model has a number of disadvantages, primarily increase of financial burden on companies and consumers which makes its uptake impracticable for developing countries.

Stemming from the Green economy ambition, the Blue economy suggests its own solutions. As any other economic model, this one has to deal with emerging issues embracing rapid degradation of ocean resources, lack of investment in human capital and innovation, low level of social awareness and irresponsible consumption.

In this regard, the speaker suggested considering the impact of Blue economy of the population through the lens of Human Capital Index, World Happiness Index, Happy Planet Index and Human Wellbeing Index. This step could help grasp the readiness of population and level of satisfaction with the current economic policies.

Furthermore, Mr. Nikonorov deliberated on the Blue economy model in Russia and especially highlighted the priority areas of business development: marine technologies for the safe use, exploitation and protection of the Arctic marine environment, marine food systems management, aquaculture and seafood trade, marine biotechnology and bioproducts (application of scientific and engineering principles to the processing of materials by marine biological agents for the provision of goods and services), maritime transport along the Northern Sea Route (crucial for increasing stability of navigation). On top of that, the expert shared a view that the Northern Sea Route with all its new hubs and modern ports, shipping capacities and other elements envisaged under the national Strategy 2035 opens a room of opportunities for Russia-IORA cooperation.

Mr. Nikonorov also emphasized the urge to create financial mechanisms supporting projects on social and environmental aspects of the Blue economy such as blue bonds and funds.

**Speaker 3 – Mr. Wannakiat Thubthimsang**

Mr. Wannakiat Thubthimsang is Specialist on Marine Resources and Ecology Management of the Department of Coastal and Marine Resources, Ministry of Natural Resources and Environment of Thailand. The Department focuses on management of marine and coastal resources, enhancement and conservation of biodiversity, restoration of ecosystem and solving problems related to the ocean pollution. The speaker's sphere of interest includes fisheries, its regulations and notifications.

The speaker presented a pilot project on Blue economy in Trat Province that the Department of Coastal and Marine Resources of the Ministry of Natural Resources and Environment of Thailand has launched with the aim to manage marine and coastal resources sustainably under the framework of the Thailand-China marine cooperation.

The first stage of "Marine and costal area utilization in Trat Province" project implemented in 2016-2018 included baseline information collection, determination of marine resource and environment along with socio-economic status, pattern of resources utilization and communities' attitude to the latter.

Starting from 2019, the second stage includes workshops and focus groups' meetings that aim to enhance the better understanding of Blue economy, activities to help communities and government achieve consensus on concerns related to the Trat province development, practical steps on rehabilitation of marine and costal resources, supporting improvement of local livelihoods, regulatory framework needed.

Another best practice in regard to the Blue economy concept that was implemented by Thailand Government is a low carbon tourism initiative on the Koh Mark Island (Eastern coast of Southern Thailand), that implied institutionalization of a low carbon "brand" and provision of rules aimed to protect this island from the carbon emission.

Both of Thailand's initiatives have faced a lot of challenges on the path of implementation – gaps in law and regulation, inadequate budget allocation and public awareness. Many of them overlap with the issues dealt with by other IORA Members.

Concluding, Mr. Thubthimsang suggested several recommendations to look deeper at: strengthen the policy on Blue economy at the national and local levels; enhance public awareness and engagement of local communities, stakeholders and government's agencies

concerned; bolster essential financial and knowledge support; and facilitate the Marine Spatial Planning (MSP) and Marine Protected Areas (MPA).

## Session II

## "Regional cooperation: barriers and opportunities"

*The session was focused on challenges and barriers the countries face in terms of developing Blue economy. The issues raised included, but were not limited to, climate change, pollution of the oceans, and overexploitation of living resources of the oceans. Major risks associated with unstable practices of marine resources exploitation and increased environmental and economic pressure were also covered. Speakers shared views on the room for the Blue economy applications (e.g. renewable ocean energy, marine biotechnology) and practical steps on a regional level that could help overcome existing challenges (e.g. regulatory, statistical or technological).*

### Speaker 1 – Ms. Nicole du Plessis

Ms. Nicole du Plessis is Science Officer at the NRF-SAEON Egagasini Node in Cape Town, South Africa. She manages the daily operations for the Secretariat of the South African Marine Research and Exploration Forum (SAMREF), a forum created to foster partnerships between researchers and the maritime industry, and the Secretariat for the South African Chapter of the Indian Ocean Rim Association Academic Group (SA IORAG), a national academic-policy platform focused on building academic networks and conducting policy-driven research in the Indian Ocean Region. She is Work Programme Lead for the NRF Ocean Accounts Framework Community of Practice, and co-lead for the NRF-SAEON My Climate Risk Regional Hub.

Ms. du Plessis made an overview of the basics of the ocean governance indicating the intrinsic role of interaction between government, society and science community. The speaker recognized the international ocean governance structure is a complex and multi-faceted one, with the United Nations Convention on the Law of the Sea keeping a central position in this matrix. Still the Blue economy concept is developed by a plethora of institutions (including IORA), and national government bodies – all contributing to the implementation of ocean governance projects and projects.

The expert shared results of the study done in 2021 to provide a systematic analysis of peer-reviewed English language articles in academic journals. From 2011 to 2020 there has been an increase in publications of IORA Members and Dialogue Partners devoted to the Blue

economy (from 1 to 52 correspondently). Even though, the rising trend could have been more impressive especially after the impetus given to the agenda by the 2012 United Nations Conference on Sustainable Development (Rio+20). However, moderate statistics could indicate the general bias of the journal databases which majorly follow and calculate English-language articles.

Speaking about South Africa, Ms. du Plessis incorporated the debate into the larger context – priorities of the African Union which are guided by 2063 Agenda and 2050 African Integrated Maritime Strategy defining the contours of Africa's Blue economy policies.

The question that the speaker posed regarded evaluation of the impact of Blue economy policies and the assessment of interaction between diverse stakeholders. The possible answer could be an Ocean Accounting Framework that would suggest a trusted standard methodology and reporting structure for monitoring and evaluating ocean programs.[6]

Summing up Ms. du Plessis called upon recognition of the maritime safety and ocean knowledge production (including research, technology and education) as sectors for development. Greater focus could be similarly made on financing mechanisms, including investment in human capital.

### Speaker 2 – Mr. Tembaletu Tanci

> Mr. Tembaletu Tanci is Director of Forestry, Fisheries and Environment Department. The Department is responsible for managing and protecting the environment and natural resources of South Africa. It also regulates the sector and advises the South African Government in terms of formulating rules and regulations for companies.

Within the presentation the expert distinguished six most important areas for the development of Blue economy in South Africa, in particular:

1. Marine transport and manufacturing (shipping, forwarding, boat building, repairs)

2. Offshore oil and gas

3. Aquaculture (new farms and fisheries)

4. Coastal and marine tourism (constructing tourism hubs across the coastline, building new infrastructure, hiking trails, coastal recreational areas, camp sites)

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[6] https://www.algoabayproject.com/ocean-accounts-framework; https://oceansea.saeon.ac.za/

5. Small harbour development (renovation and refurbishment of small harbours, feasibility assessments for potential new harbours)

6. Marine protection services and ocean governance (enforcement, remote observations, satellite surveillance).

All these directions have the same hindrances including lack of partnerships, investor appetite and trust – impeding achievement of targets and realization of the oceans economy benefits in diverse Blue economy sectors.

Additional challenges are human and natural environmental threats (pollution onshore and offshore, micro plastics, climate change and subsequent degradation of coastal areas), lagging behind investments and infrastructure (infrastructure requiring maintenance and repairs, inadequate dry-docking and port capacity, insufficient funding) and user conflicts (over mining and oil drilling, commercial fishing, MSP and MPA).

Among the enablers that could help facilitate Blue economy development, the speaker enlisted promotion of marine protection services and ocean governance, skills development and capacity building along with research and technological innovation. The positive example comes from South Africa that aspires to spread the knowledge of the Blue economy and for this reason it effectively operates the Oceans and Coastal Information Management System.

As part of the promising topics for consideration Mr. Tanci suggested Blue carbon ecosystems (via current climate change and estuaries management and restoration program) and marine litter management (via chemicals and waste economy) development.

### Speaker 3 – Mr. Kenneth Mbaga

> Mr. Kenneth Mbaga is assistant lecturer at the Dar es salaam Maritime Institute located in Dar es Salaam Tanzania. The Institute's mission is to provide high quality maritime training and produce competent experts for sustainable transport and logistics. He specializes in shipping and logistics and is involved in maritime research activities specifically on the effects of pollution on the Blue economy.

Mr. Kenneth Mbaga gave a speech underlining the need for contribution of IORA's universities in the development of Blue economy. He emphasized the importance of capacity building among students and scholars, but also those not dealing with Blue economy matters as part of their professional duties.

The expert also reiterated the urge for financing respective studies as one of the prerequisites for the Blue economy dynamic development. It is the speaker's strong belief that universities shall take responsibility for educating citizens on how the Blue economy concept affects their well-being and prospects for economic growth in the Indian Ocean region.

### Speaker 4 – Mr. Athuman Ismail Buko

Mr. Athuman Ismail Buko is currently receiving a bachelor Degree in Shipping and Logistics Management at the Dar es salaam Maritime Institute Tanzania. He specializes on Blue Economy and Maritime Law, especially the Laws governing the Sea and Pollution (UNCLOS and MARPOL). He is Chairperson of Blue Economy Club which aims to raise awareness on Blue Economy perspectives, availability of marine resources, Blue economy investments and SDGs implementation.

The speaker made an overview of the potential of fisheries sector and barriers it faces in Tanzania. The fishing industry in the country is represented primarily by small scale entities working all over the country in both fresh water and salt water, and may be characterized by low level of technology which causes extreme disproportion in supply and demand.

Currently the sector in Tanzania employs over 180,000 people, and the government is still working to increase aquaculture production and improve the industry's sustainability. However, despite these efforts, the fishing industry in Tanzania has faced various challenges such as overfishing, lack of appropriate fishing technology, and inadequate infrastructure for fish processing and marketing.

Approximately 6% of Tanzania's surface area are covered by lakes. Lake Victoria for instance is a home to Africa's largest inland fishery, but the lake has experienced issues with invasive fish, pollution, and disappearance of many endemic species. Fishing protection zones do exist in Tanzania, but they are not considered protected areas.

The scale of investments in fishing industry is generally insufficient constraining the shift from local tools, low technology like use of fishing nets, domestic boats and low water fishing practices. The large-scale fishing activity almost does not exist in Tanzania as there is no correspondent infrastructure including well-equipped vessels.

Tanzania is expected to overcome these barriers (technology, investment, proper utilization) amidst growing internal and external markets, and demand surging in DRC, Rwanda, Burundi, Malawi, Zambia and Zimbabwe.

To conclude, Mr. Buko suggested to increase investment in fisheries with the aim to enable high quality processing of fish and their products, and ensure availability of large fishing ships with well-equipped machines required for processing and refrigerating fish for storage.

### Speaker 5 – Mr. Rembesha Elias Kyogero

Mr. Rembesha Elias Kyogero is currently receiving a bachelor Degree in Shipping and Logistics Management at the Dar es salaam Maritime Institute Tanzania. He specializes on Blue Economy and Maritime Law, especially the Laws governing the Sea and Pollution (UNCLOS and MARPOL). He is Secretary General of Blue Economy Club which aims to raise awareness on Blue Economy perspectives, availability of marine resources, Blue economy investments and SDGs implementation.

Mr. Kyogero elaborated on marine-coastal tourism as part of Blue economy, its features, potential and barriers it faces. He underlined that the industry relies heavily on the quality of marine and coastal ecosystems to attract visitors, and therefore is sensitive to the impacts of marine pollution, climate change, and coastal development. Sustainable coastal and marine tourism seeks balance between economic development, on the one hand, and conservation and protection of coastal and marine ecosystems, on the other.

Tanzania is known for the attractiveness of its coastal and marine environments, making it a popular destination for tourism and recreational activities. Marine-coastal tourism has become an increasingly important industry in Tanzania valued in trillions of dollars, making it a crucial contributor to the country's economy.

Tanzania has enormous potential to attract visitors to its coastal region if provided with sufficient investment in eco-tourism which can help boost agriculture, forestry, fisheries, and coastal development. The country has large populations of marine and coastal organisms that support fishing and tourism livelihoods. Tanzania is also considered a global hotspot of marine biodiversity, which is critical to the well-being of coastal areas.

However, as noted by the speaker, it is important to take steps to protect the marine environment and ensure the sustainability of these activities for the future. The pressure from

the tourism industry and fishing, as well as larger threats such as sea level rise caused by climate change, are creating increasing environmental concerns throughout the region. Expansion of the tourism industry has led to increasing environmental degradation, for example, the emergence of plastic pollution on tourism beaches in Zanzibar. Efforts are being made to address these issues, with initiatives such as the Menai Bay Conservation Area being established to protect marine resources.

In these circumstances it is important for policymakers, local communities, and stakeholders in the tourism industry to work together to address these issues. Investment in marine-coastal tourism in Tanzania can provide significant economic benefits, but it is important to prioritize sustainability and responsible tourism practices to ensure the long-term viability of the industry. Proper stakeholder engagement, public-private partnerships, adherence to guidelines and procedures, waste management, and effective protection and mitigation measures are all important considerations for successful investment in this sector.

### Speaker 6 – Mr. Phalguni Sundaram Biswal

Mr. Phalguni Sundaram Biswal is representative of Youth Task Force Under Food and Agriculture Organization. Among others, he completed a program under the United Nations System Staff College (UNSSC). Served as a Young Professional & Young Scholar for Government of India and participated in a number of youth-led events where he partook as an ambassador of India.

India has been exploring the Blue economy discourse at the highest level due to its geographic and geostrategic position, putting a great focus on the Indian Ocean region – the world's third largest water body.

The speaker suggested defining Blue economy as a subset of the national economy comprising an entire ocean resources system and human-made economic infrastructure in maritime and onshore coastal zones within the country's legal jurisdiction. Development of the Blue Economy can serve as a growth catalyst in realizing the vision to become a $10 trillion economy by 2032. Additionally, the Indian Ocean Region is of strategic importance for India's economic growth as the most of the country's oil and gas is imported through the sea.

The Blue economy simultaneously plays an important role in the economic development of IORA as a whole, particularly in terms of economic survival of small-island nations which

are critically dependent on the ocean-based industries. The imminent threat that the IORA region faces in this regard is potential losses and damage that may stem from the ongoing climate change and natural disasters. Various environmental hazards accompanied with socio-economic implications require an immediate response.

A new financial mechanism could enable disaster-resilient infrastructure and services, collaborations in science and technology development, capacity building, monitoring and knowledge sharing to understand, plan, and execute climate and disaster management for the entire IORA. Alternatively countries could develop tools and technologies for regional spatial mapping and planning to guide decision-making including coordinated actions by government agencies for ocean conservation and sustainable resource utilization. This would be a way forward to ensure the development of a vibrant, inclusive, disaster-resilient, and sustainable Blue economy. Among positive examples on behalf of India the speaker mentioned Sagarmala project (port-led development through the extensive use of IT enabled services for modernisation of ports), and Make in India program (serving as a springboard for the shipbuilding industry).

# Recommendations

During the discussion speakers were asked on the recommendations that could be implemented by IORA Member States and IORA Dialogue Partners. Experts raised the following suggestions:

- converge definitions and methodologies of measuring the Blue economy, setting concrete indicators and sectors to be monitored, arrange and maintain ocean resources accounting;

- adopt and implement national ocean policies that advocate integrated ocean management and sustainable, resilient and inclusive development;

- exchange policies, procedures and incentives with a view to harmonize patchy governance approaches and achieve a cohesive maritime governance network;

- integrate environmental considerations and climate change implications into mainstream risk assessments;

- utilize financial mechanisms to the maximum extent possible, including incorporation of sustainable finance principles into decision making, development of Blue bonds and funds, financing of R&D and deployment of testbed platforms;

- support ocean knowledge sharing and raise awareness of various groups of population as potential beneficiaries of the Blue economy development;

- engage private sector, local communities and other stakeholders in the build-up of timely and up-to-date Blue economy policies;

- enhance communication on potential modalities of cooperation within the Northern Sea Route;

- be open to elaborating a broad range of overlapping issues such as marine spatial planning and introduction of marine protected areas, sustainable and responsible marine tourism, marine and coastal waste management, ensuring sustainable fisheries, developing shipping, offshore oil and gas;

- be open to elaborating such emerging issues as aquaculture, marine biotechnology, ocean energy and sea-bed mining.