

ISSUE BRIEF

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BLUE ECONOMY IN THE BAY OF BENGAL: COMMON ISSUES, SHARED EXPERTISE?

Malaurie Le Bail & Joël Ruet

EXECUTIVE SUMMARY

The Bay of Bengal is one of the essential parts of the Indian Ocean Region (IOR) based on its high potential for geopolitical and geoeconomics' views. The IOR is a multi-polar region that contributes to more than half of the world's GDP and population, with the prime focus centered on the ocean.

Its ecosystems and natural resources form a unique asset for the region's countries and territories. Therefore, understanding and measuring the economic activity tied to this asset is essential for sustainably growing its affected economies and livelihoods.

The Bridge Tank and the French Development Agency (AFD) co-hosted three workshops from November 2021 to March 2022, with the actors from Bangladesh, India and Sri Lanka to discuss and exchange knowledge on how these countries **organize their blue economy strategies**.

In particular, the conversation delved into how they define their blue economy strategies and propose solutions:

- **Assess the physical impacts of climate change on the sustainability of coastal and ocean ecosystems and the fishery resource,**
- **Adapt to these impacts on the evolutions of coastal ecosystems, social communities and value chains.**

With the active participation of various centers from the region, collaborative discussions demonstrated **a high level of know-how, technicality and knowledge in terms of collecting information on climate, sea-level rise, fishery resources and implementing projects to address local issues.**

KEY POINTS

- ▶ Common outcomes across the three countries have been identified, which provide a common basis for further discussion and identifying projects with a regional common resource dimension and/or global public good:
 - a large amount of scientific and think tank activity in the region and technical know-how,
 - a major challenge to have these contributions coordinated at the regional level and not progress in a silo,
 - questions on the way research may translate into policy making at the national and regional level.
- ▶ It is necessary to understand how the blue economy is formalized at the national level and how it gets translated at the very bottom level, as well as the regional level. There is no monitoring, verification and transparency tool to support the deployment of an effective and efficient blue economy.
- ▶ What sort of an impact on the larger population will climate transition have on the blue economy policies?
- ▶ The multiplicity of stakeholders is an issue for coordination improvement across the value chain of the blue economy leading to fragmentation of the decision and actions.

In cooperation with the French Development Agency (AFD)



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NB: The elements presented in this document do not represent the opinions nor engage the responsibility neither of the editors from The Bridge Tank nor of the Agence Française de Développement.

OBJECTIVES & MAIN OUTCOMES

Along with the research and operational departments of the French Development Agency (AFD), The Bridge Tank engaged in a discussion with marine, coastal and fisheries resource management bodies, technical experts, influential national and regional think tanks and research centers.

Exchanges focused on the bottom-up way in Bangladesh, India and Sri Lanka:

- **Define their blue economy strategies and propose solutions,**
- **Assess the physical impacts of climate change on the sustainability of coastal and ocean ecosystems and the fishery resource,**
- **Adapt to these impacts on the evolutions of coastal ecosystems, social communities and value chains.**

INTRODUCTION: CO-DEFINING 'BLUE ECONOMY' – MAPPING ITS ACTORS & ENGAGING WITH THEM

As the blue economy is an encompassing, even disputed concept, we anchored our work on the definition developed by the UNFCCC: "all economic activity relating to oceans, seas and coasts, from fishing to renewable marine energy to coastal tourism"¹.

We, however, mainly focused on activities, practices and debates around a sector dozens of millions of people rely on directly or indirectly in the region, the **fishery sector**.

Issues around this sector soon revealed a common denominator in the blue economy in the Bay of Bengal concerning every administrative, economic and social layer of Bangladesh, India and Sri Lanka. On this basis, a red thread emerged:

- 1- A global vision of the **economic stakes** of the whole value chain of marine activities in the Bay of Bengal, focusing on resilient coastal ecosystems.
- 2- An understanding of the pressing **social needs and challenges** of public policies for the blue economy in the Bay of Bengal on food security, job creation and adaptation to climate change in fisheries activities.
- 3- A collective inventory of **data gathering** and treatment systems, logistic and financial resources, gaps for sustainable economy activities (value chains, social & nature resilience), implementation and acceleration.

¹ <https://unfccc.int/blog/everything-you-wanted-to-know-about-the-blue-economy-but-were-afraid-to-ask#:~:text=When%20we%20talk%20about%20the,marine%20energy%20to%20coastal%20tourism>

Over the course of this work, which had begun in the spring of 2021, The Bridge Tank, mandated by AFD, analyzed the key actors and their scientific, economic, political or project scale engagements and then organized a series of three workshops.

The objective was to **assemble knowledge on the region and pre-constitute a network of experts to engage the conversation** to contribute and explore **practical leads towards developing a roadmap on behalf of AFD, as a part of its Indo-Pacific strategy, particularly in the Bay of Bengal.**

The process gathered participants from scientific, technical, economic, society and government (ministries and agencies) organizations from Bangladesh, India and Sri Lanka, as well as from France.

Our [first workshop](#) was held on November 26, 2021, to understand the main challenges. Our [second workshop](#) held on January 21, 2022, aimed at deepening this understanding, identifying solutions and starting a strategic conversation between the AFD and local stakeholders. As demands grew around the first two workshops to equally introduce some elements of the French know-how, our [final workshop](#), held on March 16, 2022, aimed at identifying technical coordination tools, blueprint projects and policy ambitions in the sector, including the willingness/possibility of regional cooperation with the contribution of the French know-how in the maritime field.

Methodology - The voice of national actors on concrete and adapted solutions

The logic of this work of bottom-up identification was to bring up the know-how existing at the local level and to adapt to complementary actions that could be provided by a developing agency. In particular, the idea was to have the series of webinars serve, although temporary, as a **public good platform to accompany national actors to dialogue with each other and move forward on the resolution of issues on a largely common resource.**

Of equal importance was to draw **inspiration from successful experiences in the blue economy sector.**

This work was made possible with the keen and repeated intervention of the national experts. After surveying the actors involved, we identified about sixty structures (ministries, departments within ministries, research centers, think tanks, universities, chambers of commerce, NGOs and consultancy companies). We engaged in a constructive dialogue throughout our **three workshops with 21 structures in the Bay of Bengal.**

We approached organizations and speakers in the same way: an open-source survey of their activity and expert skills, bilateral meetings

between the organization/expert and The Bridge Tank to share and co-assess the spirit of our work and how the organization/expert could contribute. From this, and as an outcome of the responses and interactions, we fine-tuned the approach nationally:

In **Bangladesh**, the majority of the experts we met are scientists specialized in the blue economy or fisheries and now hold positions in public agencies or chambers of commerce, contributing to the elaboration of public policies or the implementation of actions in this field. The case of Bangladesh is the most notable for studying how research is translated into policy-making as we could exchange with the high administration. On the **Indian side**, we have been in contact with experts open to our exercise. These experts proposed solutions and ideas even before the organization of the workshops in which they were to intervene. Some experts belonged to state-sponsored centers, though they spoke in their own capacity in this non-official process. Although this exercise was organized independent of the French and Indian governments, the interest of Indian experts, as well as ours, was accelerated with the signing of the India-French roadmap on February 20, 2022. It was seen as an opportunity to provide new solutions for funding, engagement and support for capacity building at the institutional level. Regarding **Sri Lanka**, the experts we managed to mobilize are mainly project implementers, associations and researchers.

In a nutshell, in India and Bangladesh, for different reasons -level of implication in Bangladesh and bilateral context in India- the think tank process we conducted has been the closest to a “track 2 diplomacy”² exercise. It was of a scientific kind in the case of India and slightly more economic in the case of Bangladesh. In Sri Lanka, it has been closer to a stakeholders' generic engagement.

COMMON OUTCOMES OVER THE 3 COUNTRIES

During the workshops and exchanges with national actors, we particularly identified a **treasure of know-how and tools available in the region** with a potential for further cooperation across the region and between the region and French organizations.

Three clear outcomes of the workshops are:

- 1- A large amount of scientific and think tank activity in the region and technical know-how,
- 2- A major challenge to have these contributions coordinated at the regional level and not progress in a silo,

through the pooling of the private and public sectors and economic and scientific actors,

- 3- The need to understand -and possibly accompany- the way this expertise and research get translated into policy making.

Blue economy's sustainable growth: scientific and technical know-how, national expertise on tools & solutions

As the series of workshops progressed, we were able to gather information and experiences from the field. Before diving into the major issues and solutions in the region, thanks to this bottom-up exercise, we acknowledged that “it is important to recognize the uniqueness of the region. Having identified it, looking at local specificities is important, in terms of research and study”³.

Two main elements characterize the know-how of the blue economy in the region:

- 1- the role of fisheries;
- 2- the importance of data;

1. Fisheries at the heart of the economic and social development of the Bay of Bengal

The Bay of Bengal is one of the essential parts of the Indian Ocean Region (IOR) based on its high potential for geopolitical and geoeconomics' views. The IOR is a multi-polar region that contributes more than half of the world's GDP and population, with the prime focus centered on the ocean. Its ecosystems and natural resources form a unique asset for the region's countries and territories. Therefore, understanding and measuring the economic activity tied to this asset is essential for sustainably growing its affected economies and livelihoods.

Among the main areas of concern in the Indo-Pacific and that particularly affect the Bay of Bengal are:

- Degradation of critical habitats (mangrove, coral reefs),
- Pollution & water qualities (marine litter, heavy metals, sedimentation),
- Overexploitation of living marine resources (fewer resources, migration, small fishes),
- Risk management of marine resources (fisheries and aquaculture),
- Degradation of the quality of life of populations dependent on marine and maritime activities and nutrition.

The Bay of Bengal contributes to the growth and prosperity of South Asian states.

² Defined as “non-governmental, informal and unofficial contacts and activities between private citizens or groups of individuals, sometimes called non-state actors”

³ Dr. Arnab Das, Executive director and founder, Maritime Research Center, India, Workshop 3

Sustainable use and management of fishery resources, employment creation and food security in a manner consistent with principles of social equity and inclusion are central to this.

This is why the “**blue economy is a connecting element in the Bay of Bengal**”.⁴ The ocean represents between 3 to 5% of the regional GDP and it is estimated that 70% of people are involved in subsistence fisheries. The ocean sector is particularly vulnerable to climate change. Recognizing this, several challenges and issues have been identified, such as economic, disaster risk management, growing demand for fisheries and tourism and social aspect in terms of job security and access and food security. Hence, the management and preservation of ocean resources are key priorities.

The major issues are the large fishing industry and overfishing. However, in the Bay of Bengal, **artisanal fisheries concern more than 80% of marine fish production**. India is the second-largest aquaculture fish producing country in the world, while Bangladesh depends on the Hilsa fishery production which contributes to 12% of total fish production and 1% of the GDP of the country.

A number of initiatives have been taken to contribute to the improvement of a sustainable blue economy in the Bay of Bengal. In a non-exhaustive and synthetic manner, let us mention in particular, these types of development, which illustrate the plurality and quality of the commitments made by these three countries:

- **Project development** for solutions from the pilot phase to large-scale deployment (fisheries management, reducing poverty and improving livelihoods of the coastal community, the framework for stakeholders and policymakers).
- **Conducting research** in terms of species, habitat mapping, and climate change forecasts.
- **Institutional and technological mechanisms** for ocean observation and warning service.
- **Outreach solutions** such as seminars, training and awareness campaign.

Experts during the workshops developed several way-forward, such as:

- **Framework and formulation of marine fisheries policy: for the social wellbeing of fishing communities and regulations;**
- **A need-based species and livelihood assessment.**

⁴ Dr. Saurabh Thakur, Associate Fellow, National Maritime Foundation, India, workshop 2

2. The catalytic role of data for sustainable and effective development of the blue economy in the Bay of Bengal

Researchers, policymakers, project leaders and coastal communities agree that rigorous data collection and precise inventory of the fish stocks are needed to halt resources' abuse, whilst ensuring an equal and sustainable use of ocean and coastal resources, are essential to driving public policies in the sector. An entire panel during the second workshop was dedicated to data-related issues. More broadly, the question of data was present throughout our three workshops.

There is a clear consensus among the panelists: data is at the core of the action, the economic development and the yield of the fishery, the protection of ecosystems and the improvement of the quality of life of fishermen. In the case of the Bay of Bengal, data is an essential component of the value chain of the blue economy, especially of the fishery which is considered to be developed in **three steps**⁵:

- **Exploring blue resources,**
- **Finding the potential,**
- **Hydrological and morphological data.**

Nevertheless, several concerns were raised:

- **Methodological constraints on the collection of data**, such as the lack of transparency, open-access data and the need to improve the quality and reliability of available statistics. The National Maritime Foundation for instance declares facing those kinds of difficulties, notably in working on mangrove forests in India.⁶
- **The need for data from a long-run perspective**,⁷ is necessary for better resource inventory. There is no strong temporal monitoring of Sri Lankan resources, linked to funding.
- **Storage of data**, requiring appropriate vessels and specific technology⁸

Efforts are still needed in the area of strengthening and monitoring ocean, resources, species and climate change and in enforcing mechanisms at the policy level, as data should feed national frameworks to integrate scientific data along with environmental, social and economic data for better monitoring the oceans.⁹

⁵ Mr. Abu Saleh Khan, Executive Director, Institute of Water Modeling, Bangladesh, Workshop 2

⁶ Dr. Chime Youndon, Associate Researcher, National Maritime Foundation, India, Workshop 2

⁷ Mr. Nishan Perera, Co-founder, Blue Resources Trust, Sri Lanka, Workshop 2

⁸ Mr. Abu Saleh Khan, Executive Director, Institute of Water Modeling, Bangladesh, Workshop 2

⁹ Dr. Shailesh Nayak, Director, National Institute of Advanced Studies, India, Workshop 2 & Mr. Pattabhi Rama Rao, Group Director, Ocean Observations, Modelling and Data Assimilation Group, Indian National Center for Ocean Information Services (INCOIS, India, Workshop 2

The grand challenge: coordinating sustainable blue economy contributions at a national level and not in a silo, through the pooling of the private and public sectors

In the Bay of Bengal, a shared blue economy blueprint would be crucial to ensure operational governance of ocean resources as a common good. There is a need to build a sustainable fishery value chain by modernizing maritime infrastructures. To accomplish it, all the panelists pointed out the need to better manage their fishery resources. They highlighted the lack of coordination and the need for financial, political and technological infrastructures.

Excellent expertise in the field exists. However, from one country to another or within a country, it is difficult to know the projects or initiatives launched and identify key lessons learned from neighboring countries or states to replicate such solutions. Our workshops gathered around a virtual table with experts of the blue economy from Bangladesh, India and Sri Lanka. The real challenge of coordination between actors is to bring together a network of actors holding complementary expertise. The challenge of coordination apart from the logic of work and efficiency was discussed. We focused on the need to **bring the private and public sectors together** to ensure operational governance of the blue economy as a common good.

Three main ways to avoid silo actions are:

- 1- Improving coordination,
- 2- Strengthening private-public cooperation,
- 3- Promoting institutional capacity based on data collection and coordination.

1. Improving coordination

The **lack of coordination**, from national to the regional and local levels, within the activities of the blue economy sector was one element that came out frequently during the workshops. Coordination is crucial to effectively and efficiently deploy and implement the blue economy's activities and to promote sustainable use of resources within a country and a region.

What are the existing solutions? What successful projects have been developed? What institutional mechanisms have been introduced in the neighboring country? What were the results? Responses to these questions, as shared by the majority of the panelists from the collective workshops, lead to a series of takeaways:

- **The joint understanding of top-down and bottom-up** contents on how the blue economy is going to be implemented in the region. **It is necessary to understand how the blue**

economy is formalized at the national level and gets translated at the bottom, as well as regional levels¹⁰. There is no monitoring or verification tool to support the deployment of an effective and efficient blue economy.

- **What sort of an impact on the larger population will the climate transition have with the blue economy policies?**
- The **multiplicity of stakeholders is an issue** for coordination's improvement across the value chain of the blue economy and the fragmentation of the decision and actions.¹¹
- Multiple stakeholders and the fragmentation of decisions and actions pose an issue that needs to be dealt with to improve coordination across the value chain of the blue economy.

An example of a solution, among others, to address the coordination issue, is the Underwater Domain Awareness (UDA) framework developed by the Maritime Research Center (MRC)¹². The UDA framework encourages the pooling of resources and synergizes efforts across the stakeholders of the maritime sector (blue economy, security, environment, disaster management, science and technology). It is replicable and serves to optimize resources with technological and political intervention for better actions. The UDA initiative can be deployed throughout the region as it is relevant to the entire maritime strategic space. It is an opportunity and an inclusive solution for stakeholders and policymakers toward sustainability, security and safety for all the tropical littoral waters in the Indo-Pacific region.

Solutions exist, but they are little known. Within the region and between other countries, there is a huge potential for cooperation and knowledge exchange. But at the same time, recognizing and understanding the expertise and the knowledge existing within the countries of the region is critical.¹³

2. Stronger private-public cooperation

The workshops gradually gave voice to the private sector and underlined its importance in developing a sustainable and innovative blue economy. As a bridge to the private sector: the role of chambers of commerce is crucial. The private sector, in collaboration with the public sector, could play a leading role in the blue economy for **three reasons**:

¹⁰ Dr. Saurabh Thakur, Associate Fellow, National Maritime Foundation, India, workshop 2
¹¹ Mr. Aditya Dash, Vice Chairman, Marine Products Export Development Authority (MPEDA), India, workshop 2 & Mrs. Dharshani Lahandapura, Chairperson, Marine Environment Protection Authority, Sri Lanka, workshop 2
¹² Dr. Arnab Das, Executive director and founder, Maritime Research Center, India, workshops 1, 2, 3
¹³ Mr. Daniel Fernando, Chairperson, Blue Resources Trust, Sri Lanka, workshop 3

- **Private and public coordination to increase awareness in businesses.** The public and private sectors could work in tandem for the holistic development of this sector. Frequent exchange of delegation, information, knowledge and training between the two sectors could help capacity building of the private sector, enrich maritime resource skills, and encourage foreign investment for technology and knowledge transfer.¹⁴
- **Developing and financing the blue economy.**¹⁵ Measures to be deployed to facilitate public bodies' finance by the private sector and have the private sector supported by the public bodies at various levels. As public entities face budget constraints, private entities should engage in solutions for the public sector advocacy. The financing mechanism needs development in a self-sufficient manner. Solutions such as blue bonds and blue loans could be introduced to meet the long-term and low-cost financing needs in the blue economy scope. The private sector also needs incentives with fiscal and non-fiscal supports, such as tax holidays, tax exemptions, technological support etc.
- As a project implementer, the **private sector should connect its projects at the very bottom level, contribute to the sustainability awareness**¹⁶ and **develop projects for the long run** (from pilot phase to deployment phase).

3. Promoting institutional capacity building for coordination on data collection

Within Bangladesh, India and Sri Lanka, institutional frameworks exist to promote the proper implementation of activities related to the blue economy. However, the challenge remains in capacity building, in terms of resource and data management, translation of policies into action, capacity to collect information and identify needs at the very local level and to achieve economic, human and environmental development objectives.

Regarding **coordination**, institutional capacity building should focus on the **3 main challenges: sustainability, informality and supporting stakeholder coordination.** Integration and coordination across policy is a key component

for enhancing maritime domain governance.¹⁷ Policymakers have the responsibility to know what is developed at the very bottom level. Currently, in Bangladesh, India and Sri Lanka, there is a challenge to strengthen the institutional capacity of the sector in order to promote national strategies and local interest reconciliation. On this subject, the panelists were less committed to the topic but are aware of the challenges which need to be resolved concerning the issue.

Regarding the institutional capacity building based on **data collection**, contributions from researchers are required to develop an adequate methodology that is lacking at present and thus, results in lack of transparency, utility and manipulation of data.¹⁸ Transformation of data in knowledge and action is critical and also in understanding the main takeaways for public actions? This is why research needs to be plugged into action and policy decisions.

How many researches translate into policy making?

Our process of building dialogue between research, operation experts and policymakers showed the need for more research, to know more actors and experts to reinforce knowledge before passing into action.

While a lot of research exists at a national level, the implementation of projects to obtain results is thus crucial. It would be interesting, through further research, to empower and push policy dialogue at the national, regional, and even at local levels. However, research should not be disconnected from the projects. This notion of complementarity is interesting because it underlines the notion of the transfer of skills. Throughout the workshops, all the experts agreed on the fact that the blue economy in the region and within the countries was silo-based. However, the research, in its essence, foresees it to be translated into action. Thus, conducting research is important to feed the policy-making or project implementers' process.

Project leaders, such as developing agencies, are interested in meeting needs. In the framework of the Bay of Bengal and national realities, there are **three ways** in which project implementers should focus on stakeholders' suggestions. Organizations are invited to visit the field, as they need to know the realities on the ground, particularly of the fishermen's

¹⁴ Mr. Khairul Majid Mahmud, Director, Dhaka Chamber of Commerce & Industry, Bangladesh, workshop 2 & Dr. Arnab Das, Executive director and founder, Maritime Research Center, India, workshop 2 & Mr. Manish Singhal, Deputy Secretary General, Federation of Indian Chambers of Commerce and Industry, India, workshop 3

¹⁵ Mr. Khairul Majid Mahmud, Director, Dhaka Chamber of Commerce & Industry, Bangladesh, workshop 2 & Dr. Arnab Das, Executive director and founder, Maritime Research Center, India, workshop 2

¹⁶ Ms. Soma Mitra-Muckerjee, Director – Head of Projects, Bengal Chamber of Commerce and Industry, India, workshop 2

¹⁷ Dr. Chime Youdon and Dr. Saurabh Thakur, Associate Fellows, National Maritime Foundation, India, workshop 2

¹⁸ Dr. Chime Youdon and Dr. Saurabh Thakur, Associate Fellows, National Maritime Foundation, India, workshop 2

community at a small scale. The role of a developing agency could be (1) **identifying what already exists**, (2) **supporting on helping local organizations on the ground to scale up** and (3) **taking precautionary measures** to protect nature and biodiversity, as “action needs to be proactive and not reactionary”¹⁹ Several tools have been put forward to act in favor of the blue economy within the three countries and on a regional scale. These tools developed by research institutions, think tanks, chambers of commerce and officials contribute to proving the existing interconnections between research and operation.

- **Joint research/project** with multi-stakeholders and multi-domains approaches.
- **Outreach actions** (seminars, publications, workshops, training, awareness campaign)

Think Tanks, research institutions and NGOs, such as the Bangladesh Institute of Maritime Research and Development (BIMRAD), Blue Resources Trust, National Maritime Foundation, Maritime Research Center, Friendship NGO, and Marine Environment Conservation Society contribute to **increasing maritime awareness among policymakers and civil society by carrying programs and outreach actions to put forward recommendation for the decision-makers**. For instance, the MRC proposes an **“outreach, engage and sustain program”**²⁰

- Organizing webinars, seminars and workshops to sensitize stakeholders and policymakers.
- Introducing multi-disciplinary UDA fellowships to encourage innovation and research.
- Building on projects and policy papers across the multiple sub-domains and applications.

To illustrate how research is influencing or is integrating into policymaking, Bangladeshi experts put more emphasis on this aspect during the three workshops. The majority of these were scientists specializing in the blue economy or fisheries, who now hold positions in public agencies or chambers of commerce, contributing to the elaboration of public policies or the implementation of actions in this field.²¹ The Bangladeshi experts explained that they try to collaborate as much as possible with different types of stakeholders in the blue economy sector. For instance, the BIMRAD carries out multiple researches on the maritime domain and actions on maritime awareness

and proposes recommendations within policymakers, or Friendship NGO, pushing policymakers to be more anchored in the field. As a weak signal to express the increasing amount of research that could be connected to operational needs, we identified a growing number of PhD programs about the blue economy, notably in India and Sri Lanka. In the case of Sri Lanka, the Ocean University was created in 2014 to “develop the manpower requirement to achieve the economic benefits of Marine, Maritime, Fisheries and allied sectors”.²² During our workshops, some experts highlighted the importance of awareness and training for the younger generation on the preservation of the ocean resources.²³ By contributing to public awareness and putting forward recommendations to decision makers, research can complement concrete actions answering current demands in the industry and economic sector. There is still a need to think about what the missing links on demand are. There is also a need to plug research at a decisional level (budget and reform). Any contribution should be designed whilst keeping in mind a model which is able to gather blue economy aspects by creating a network of thinkers, implementers, decision-makers and beneficiaries to work together on the solutions.

WHICH WAY FORWARD TO REGIONAL COORDINATION?

Exchanges across experts from Bangladesh, India, Sri Lanka and France indeed agreed not only on the existence of shared fishery resources within the region, that may be treated as a common resource but also on the shared national issues across actors and countries. Fish stock, among other issues approached in these workshops, is definitely a common resource where the lack of coordination among actors within a country, or within countries might lead to depletion.

Indeed, experts from the three countries allowed unearthing of these shared concerns and approaches on how to organize their blue economy strategies, and also more specifically, how they map and adapt to the physical impacts of climate change on the fishery resource, how they map and adapt to the evolutions of coastal ecosystems, social communities, and value chains.

Coordination has been called for. Especially, the coordination of research, data providers and technical centers. The lack of which is an issue that many participants in these workshops have raised at the national level, and some might even want to raise it at the regional level.

¹⁹ Mr. Daniel Fernando, Chairperson, Blue Resource Trust, Sri Lanka, Workshop 3

²⁰ Dr. Arnab Das, Executive director and founder, Maritime Research Center, India, workshops 1, 2, 3

²¹ Mr. Mashiur Rahman, Joint Secretary, Ministry of Fisheries and Livestock, Bangladesh, workshop 1 & Dr. Md. Sharif Uddin, Director, Marine Fisheries Office, Department of Fisheries of the Government of the People's Republic of Bangladesh & Mr. Khairul Majid Mahmud, Director, Dhaka Chamber of Commerce & Industry, Bangladesh, workshop 2

²² <http://ocu.ac.lk/about-us/>

²³ Ms. Soma Mitra-Muckerjee, Director – Head of Projects, Bengal Chamber of Commerce and Industry, India, workshop 2

CONCLUSION – ASSESSING THE POTENTIAL FOR A REGIONAL EXPERTS' DIALOGUE ON THE BLUE ECONOMY IN THE BAY OF BENGAL

Across the workshops, experts from Bangladesh, India, Sri Lanka and France agreed on the fact that ocean ecosystem resources could be treated as a common good. They also pointed to the shared national issues across actors and countries. Fish stock, for instance, is definitely a common resource where lack of coordination across actors within a country or across countries might lead to overexploitation and thus depletion.

Experts from the three countries unearthed these shared concerns and discussed how the countries incorporate the blue economy in their national strategies. They discussed how they assess the physical impacts of climate change on the fishery resource and the evolutions of coastal ecosystems, social communities, and value chains, and how they adapt to these changes.

Coordination has been called for. Especially, the coordination of research, data providing and technical centers, or lack thereof, is an issue that many participants in these workshops have raised, both at the national and regional levels.

This mapping of actors and the current state of know-how in the blue economy in the Bay of Bengal draws a picture of the issues and existing resources – technical, institutional and natural. It may serve as an enabler to frame assistance and support in the projects or policy-making. Investments are indeed needed; concerns need to be highlighted, as the “importance of the blue economy as economic growth prospects beyond 2030 will be limited without a large investment in coastal and ocean environments”.

At any rate, the stakes around these issues of common resources and possibly skills and data coordination also open more broadly the question on the issue of governance of the blue economy sector within a community of actors involved, at this stage, in a silo, having, however, the desire to better align themselves to mobilize their effort.

Our own analysis is that all local players have identified shared common natural resources and shared issues that may possibly benefit from being managed as some sort of regional common good.

A common resource with possible multi-level coordination

To serve towards this direction, let us here point out that, in our perspective, **the question may be regarded under one key framework: of a common natural resource that ought to be coordinated in a “club manner” by national actors, or possibly by the regional level. Coordination at regional level may respond to the commons approach: one resource, actors and common rules of use/governance. States may not necessarily intervene in the regional coordination of research actors.**

At each national level, the technical skills and policy role of technical centers and Think Tanks are indeed important and coordinative support by national authorities will undoubtedly make its way, provided countries wish to keep some sense of bottom-up-informed governance. In which case, national coordination across different types of actors and uses might be hoped for (national) rivalry on the resource to pacify through common governance. This would allow for more sustainability of the local resources (fish stock, health of ecosystems, coastal ecosystems and socio-economic value chains), which **might become managed like a club good, in the sense that data, technical know-how, and skills over the resource could be shared nationally and partially shared regionally.**

Indeed, should coordination mostly remain at the national level, it is expected that, at least in some shared waters, there would still be competition around the resource. **The resource would ideally benefit from being managed and regulated as a regional common good.**

In this framework, research centers, Think Tanks, agencies, and organizations that constitute the data ecosystem, and would retain a national dimension, might however **aspire to communalizing information sharing or even some processes, in a way that might be partly contributing the global common good of Ocean science.**