

# **BLUE ECONOMY IN THE BAY OF BENGAL**

## **Bangladesh, India & Sri Lanka**

### **WORKSHOP 3**

#### **TOWARDS A REGIONAL BLUE ECONOMY: WHICH CONTRIBUTION OF THE FRENCH KNOW-HOW?**

### **WORKSHOP REPORT**

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### Workshop 3: Towards a regional blue economy: which French know-how contribution?

The spirit of these three workshops is devoted to understanding, mapping the initiatives and gaps in action on blue economy in the Bay of Bengal, more particularly in Bangladesh, India and Sri Lanka. Our first workshop was held on November 26<sup>th</sup>, dedicated to understanding the challenges with the participation of several entities. Our second workshop, organized in January 21<sup>st</sup> aimed to continue this understanding by gathering experts who participated in the first edition and new experts and to start a strategic conversation with the AFD. And the third and final workshop, which was held on March 16<sup>th</sup>, was devoted to solutions and identifying ways of cooperation in the regional with the support of French know how.

#### Introductory session

##### Dr. Joël Ruet, President, The Bridge Tank

Starting by presenting the spirit of the series of three workshops that The Bridge Tank co-organized with the mandate of the French Development Agency (AFD), Dr. Joël Ruet explained that this work has allowed us to understand the multiple definitions of the blue economy, mainly focusing on fisheries and coastal ecosystem preservation in **two respects**:

- i) It has gained a **strategic momentum** as the strategic issues around the region have developed. In the framework of these workshops we are balancing these strategic issues with economic issues for the hundreds of millions of people, for the ecosystems both coastal and marine, which depend on the ocean and the sustainable organization of a blue economy.
- ii) The conversation launched since the first workshop have shown a **treasure of knowhow and tools**, which are available in the region and which give hope for further cooperation across the region, between the region and with French organizations.

This third and last workshop is to have, at the demand of many organizations in the Bay of Bengal, invited various French actors involved in the blue economy's ecosystem.

##### Dr. (Mrs) H el ene Djoufelkit, Research Director of the AFD

Dr. Djouflekit explained why the research department and the operational department of the AFD were interesting in having the format of workshops? We are very much valuing the gathering of different profiles, and the mixing of experiences between researchers, practitioners and decision-makers. The brainstorming around a common topic is interesting. Focusing on blue economy, we could identify several common priorities and analysis since the first workshop. Moving ahead with speakers that participated in the first workshop and new speakers, we were able to have interesting and constructive discussions to cracking implementation bottleneck on blue economy in the Bay of Bengal, focusing on data collection. The third workshop will come with the solutions and hopefully with the support of French organizations.

She highlighted what could be the main takeaways in terms of needs and gaps from the first two workshops, which are the following 6 points:

- i. **The role of blue economy in the region:** the ocean represents between 3 to 5% of the regional GDP. It is a huge part of the global trade and gathers most of the employment, in particular in the fishery sector. The ocean sector is particularly vulnerable to climate change. Recognizing this, several challenges and issues have been identified, such as economic challenge; disaster risk management challenge, growing demand on fisheries and tourism, social aspect in terms of job security and access and food security. The management and the preservation of the ocean resources were key priorities for the discussion and together to find solutions.

- ii. **The role of data.** Several concerns have been raised. The first one is the lack of transparency, open access data and the need to improve the quality and reliability of available statistics – a point that has been notably pointed out by Dr. Chime Youdon from the National Maritime Foundation. The second one is the need of having data in a long run perspective, which has been developed by Mr. Nishan Perera from the Blue Resources Trust. The third one is the storage of data that Mr. Abu Saleh Khan from the Institute of Water Modelling highlighted, insisting in the necessity of equipment, appropriate vessels and specific technology to contribute to data's storage. And, Dr. Shailesh Nayak, from the National Institute of Advanced Studies emphasized that data should feed national frameworks to integrate scientific data along with environmental, social and economic data for better monitoring the oceans.
- iii. **Improving coordination.** The lack of coordination has been identified as the main issue as several level: from national to regional and local level. For instance, Dr. Saurabh Thakur from the National Maritime Foundation explains that it is necessary to understand how blue economy is being formalized at the national level but how it gets translated at the very bottom level, as well as the regional level. Mr. Aditya Dash from the Marine Products Export Development Authority (MPEDA) and Mrs. Dharshani Lahandapura from the Marine Environment Protection Authority in Sri Lanka said that the multiplicity of stakeholders is somehow an issue for coordination's improvement across the value chain of the blue economy and the fragmentation of the decision. Transformation data in knowledge and action is an important point and what are the main takeaways for public actions?
- iv. **Strengthening private and public cooperation** at different level: regional, national and local levels. This element has notably been raised by Mr. Khairul Majid Mahmud from the Dhaka Chamber of Commerce & Industry and Dr. Arnab Das from the Maritime Research Center.
- v. **Promoting institutional capacity building in front of data collection and coordination.** Institutional capacity building should aim at strengthening 3 main challenges: sustainability, informality and supporting stakeholders' coordination.
- vi. **Developing pilot projects** to test and experiment solutions in terms of data collection and coordination at local and national level, beforehand replicate such schemes in other parts of the country or even countries

## Session 1 – Institutional cooperation and ambitions at regional level with the support of French know-how

### Mrs. Runa Khan, Founder & Executive Director of the Friendship NGO

Mrs. Runa Khan is coming with another perspective of what we have done in our first two workshops in terms of fisheries, data collection or project implementation. Having briefly gave a background of Blue Economy [policy engagement in Bangladesh](#) since 2015 Mrs. Khan insists on reality and actual implementation of projects and on what should be done by an organization, such as the AFD, to success in developing projects in countries like the Bay of Bengal.

Explaining that the GCF (Green Climate Funds) has long focused on mitigation finance issues, there is now a shift towards adaptation finance, which brings more practical solutions in pilots. While local populations have been living near the coasts for 20 years, they are witnessing and experiencing the consequences of climate change and problems happening. For them, even the data became secondary because everyday living is the priority. Organizations like NGO or even smaller or bigger were motivated by the pilot mode. If we are to talk about solutions today, an organization such as **AFD should focus on helping these local organizations or those already on the ground to scale up**. This point of view is not very acceptable for many organizations. What is a pilot? It is a project launched not only for 2 or 3 years. But a project works when the solutions happening over 20 years, just because the scale is small and the organization was not able to put it in a platform. Mrs. Runa Khan thought that this kind of integration will save a lot of money in

pilots and save a lot of understanding between reasons why it works. This understanding is far deeper than a pilot mode. It is an understanding of the way how fishermen, the economy and the society work. By working in this way, there are a lot of soft skills developed. The reason why many organizations do go, in this long term mode and understanding why the pilot phase did not worked, is because they do not have time. Organizations have the responsibility to go in the field and to see what it exists because you deal with human being. **Ms Runa Khan particularly insists on the support of AFD, which needs to be a lot more realistic and it is possible because the AFD has the resources of ability, not money.**

#### **Mr. Daniel Fernando, Chairperson, Blue Resources Trust, Sri Lanka**

Mr. Daniel Fernando began his presentation by responding to the points raised by Mrs. Runa Khan about the limited time spent by organizations in the region. **Action needs to be proactive. But unfortunately action is more reactionary to nature.** We see this across sustainability fisheries, climate change. We are only reacting to what happen and not developing proactive measures to prevent what is going on.

Another point Mr. Daniel Fernando reacted on **the lack of data** because this is something that it has always been an issue, which needs to overcome. Quite often there is sufficient date to make decision. He gave an example of what he is studying (sharks and rays). Since several decades, we have sufficient data saying that those species are declining, not across the region but across the world. When we speak with fisheries agencies across the world, there is always a request for additional data showing further declined of species.

Mr. Daniel Fernando said that **there is a strong need adopting precautionary measures, as fisheries need to be sustainable, not just for fisherman livelihood or food security or contribution to national economies, but also to ensure the sustainability to our biodiversity.** This point needs to be keep by a developing agency when it works on this topic. Another point is that there is a strong need to protect what we already have. Quite often there is a focus on prebuilding. Coral reefs are a good illustration. There are many projects to protect coral reefs at expanding coral reefs or establishing artificial coral reefs. But at the same time, there are a lot of destructing on coral reefs and natural habitats. Mr. Fernando thinks that adopting precautionary measures with focusing our efforts on what is existing; instead of trying to build something that does not exists.

Mr. Fernando develops the point of **the need of long term projects**, which is necessary for data and monitor outcomes of projects taken place. It is key to have a baseline matric to compare with the future. The sustainability of any project is critical; For example vessels have been deployed to the area to monitor the ocean. But the operation and the needs of these vessels were not taken into account, such as the need for gasoline.

Finally, **we need to look at national opportunities rather than larger terms.** For instance in the fishery sector, we are looking at international trade requirements but when we do this we are focusing on exporting at larger scale to respond to international market demands and not on artisanal fisheries. Many artisanal fisheries in the Bay of Bengal region are sustainable, using one by one technic for instance. Unfortunately, these fishermen do not have access to the premium supply chains because it is specifically to the international market, which require a much larger supply chain. At national level, shorter value chains are beneficial and provide a solid basis for cooperation between these fishermen to have access to national market in the future.

**In the region and between other countries, there is a huge potential in cooperation and exchange knowledge. But at the same, recognizing and understanding the expertise and the knowledge existing within the countries of the region is critical.**

#### **Dr. Arnab Das, Executive Director & Founder, Maritime Research Centre, India**

Dr. Arnab Das started his intervention saying that when **we talk about the Bay of Bengal, it is necessary to recognize the uniqueness of the region.** If not, we will not achieve goals. Having understanding this point, **looking at local specificities is important, in terms of research and study** to make sure that we understand the underwater domain

awareness. Dr Arnab Das called for interesting in underwater domain, which need a special effort and the Maritime Research Center (MRC) is willing to contribute in this sense. **Technology and knowhow exist in the region. But capacity building at multiple levels of actions and for our next generation is necessary.** The framework developed by the MRC raise to work in this sense. Knowing the problems, the MRC proposes **outreach, engage and sustain framework**, which means:

- **Outreach:** reach out larger community from policy maker, implementers, researchers and general population to sensitize them;
- **Engage:** there is a need to identify the different stakeholders, involving younger generations, to make them understand the gaps and the challenges. This is a challenge to have a multidisciplinary approach because no one discipline can solve a problem;
- **Sustain:** to build on projects and policy papers across the multiple levels and sub-domains and applications. There is a lot of the fragmentation among the policy makers, notably.

**Dr. Das explained that the UDA framework proposed by MRC can significantly contribute towards the enhanced maritime governance.** Also, a **Centre of Excellence** could be set up jointly to ensure a **focused approach and scale up the capacity & capability building requirement at a regional level.**

**Mr. Matthieu Piron, Policy officer for international affairs, Directorate for Sea Fisheries and Aquaculture, Ministry for the Sea**

Mr. Piron mainly focused his intervention **on fisheries governance in the high seas**, in particular in regional fisheries management organizations (RFMOs) and in southern Indian Ocean Fisheries Agreement (SIOFA).

Mr. Piron gave general elements about the definition of international organizations that regulate fishing activities in the high seas at a regional level, which are open both to countries from the region (coastal states) and countries that have interests in those fisheries (distant water fishing nations). He also explained the two types of RFMO: the management of highly migratory fish stocks and the management of other fish stocks. He showed a map of different RFMOs across the world. The Indian Ocean Tuna Commission (IOTC) gathers the Bay of Bengal countries, on which we are working on. He also detailed how RFMOs work in practice in terms of decision-making, with the contribution of scientific advice, management measures and compliance assessment.

About the SIOFA, he followed the same methodology presenting general elements, country members gathering coastal states and distant nations, management measures in place in terms of species management and several examples of measures that can be taken by topics: fishing activities, bycatch mitigation measures, monitoring and compliance, data collection and inspection schemes and Illegal, unreported and unregulated (IUU) fishing.

**Mr. Benoît Gauthier, Head of the Regional Economic Service, Embassy of France in India**

Mr. Gauthier's presentation focused on **two directions**:

**i. A short presentation on institutional framework which has been set up with India**

Both France and India share the same value and ambitions regarding ocean in the Indo-Pacific. On this basis, France and India have signed a common road map on blue economy and ocean governance in February 2022. This road map aims at contributing to the Sustainable Development Goals (SDGs), notably the SDG 14: Conserve and sustainably use the oceans, seas and marine resources. The French-Indo road map is built with the sustainability aspect, as the main objective. In terms of activities, large topics have been dressed up in the road map: maritime trade, ports, shipping industry, fisheries, marine scientific research, marine biodiversity protection, marine protected areas, cooperation between competent administrations on civil maritime issues, maritime special planning and international laws related to maritime negotiation. Those large scopes have been ranked into 4 pillars: institutional, economic, infrastructures and scientific and academic. This roadmap should accelerate bilateral cooperation between the two countries and the

implementation of projects. But the real issue is how to further operationalize this roadmap in concrete actions and tools?

ii. **A presentation of what are the financial tools to implement the Indo-Pacific strategy?**

In terms of financial tools, the regional economic department can mobilize **grants** and **loans** in projects where there is sustainability aspect. Specifically in the South East region and in the blue economy, France can invest in various issues, such as:

- **Monitoring and preserving the fishery resource.** France has already experiences such support in Indonesia with the French company CLS, notably. The AFD and the French Ministry of Finance have already worked closely together and can provide technical and financial support for strengthening the technical expertise to public institutes.
- **Sustainable fishing** by strengthening the surveillance and interception capacities in fishing zones against IUU and overfishing. In practice, the French part collaborates with the coast guards.
- **Weather forecasts** for building long term strategy for coastal zones resilience to climate change to better anticipate and prevent from climate disaster. In this field, the France part has advanced the most with Indonesia, along with the AFD, by developing full range of projects from technical assistance to equipment and management of the data.
- **Preservation of marine and coastal biodiversity**, with a specific focus on the mangroves. The French part has gained expertise and experience in Africa on this topic and is right now developing project in the Kerala coast in India in a project that aims to limit coastal erosion.

Mr. Gauthier finished his presentation reminding us that France has quite large expertise, equipment and public and private research can be mobilized for technical and financial support for local partners and beneficiaries.

**Vice Admiral Pradeep Chauhan, Director-General, National Maritime Foundation, India**

Vice Admiral Pradeep Chauhan started his intervention reminding us that there is a need to be extremely careful with the **meaning of economy**: blue economy, green economy, brown economy. The word economy occurs three times. The question is: what is the right question? How much is the blue economy contributing to national economy? Or how blue is the economy? Meaning that blue economy is not limited to coastal areas but comes with the inland where impacts upon the oceans originate.

Concerning **IUU fishing**, Vice Admiral Pradeep Chauhan admitted that it is an increasing concern around the world and in particular in the Bay of Bengal. He insisted that legal aspects need to be sorted out, led by the UN and the FAO. Recent developments have shown the importance of flag state against IUU fishing. He emphasized that the guidelines developed by the ports are voluntary and represent only soft laws, which mean that the implementation of such laws depend on political will. The effectiveness of such international guidelines is still debatable. Vice Admiral Chauhan suggested the building of a consensus among the States to adopt legally binding instruments on flag state performance such as the port state agreement which began as soft law before becoming hard law. The National Maritime Foundation is working quite hard on this subject and hopes to maintain continuous engagement with the French embassy in France.

The Vice Admiral pointed out that **to improve fishing; one must understand the difference between capacity and capability and to strike the right balance between the two**. Capacity means instruments and tools available or provided by an entity, which are necessary to build capability. Capability means human skills or organizational skills, including legal documents. Within the Bay of Bengal, the Vice Admiral argued that the real need was to build capability.

Vice Admiral emphasised that fishing is not the sole area of the blue economy in its regional format. He highlighted that the **issue of plastic** in the Indian Ocean is a massive problem in the blue economy-based problems which also

need to be addressed, for which there are neither significant projects nor mechanisms to salvage the situation. The National Maritime Foundation is working on attracting new talent towards the area who can find new answers without copying existing solutions. This is where, suggests the Vice Admiral, **France should be concentrating its capabilities and capacities to encourage such solutions.**

The Vice Admiral then continued **to evoke projects to which French aid could largely contribute, such as low temperature thermal desalination (LTTD)**, a mechanism used already to generate freshwater for certain islands off the Indian West Coast. The Vice Admiral pointed out that such a project could be expanded in the region through **mapping and identification of suitable geographical locations** which could support LTTD, funded by and engineered with French aid. Another project would be the **building of climate-changing resistant port infrastructure, such as roll-off roll-on shipping.**

**Port resilience**, the Vice Admiral highlighted, is a neglected aspect of blue economy which should be developed. Costs also needed to be calculated so that such projects can be carried out and feasible solutions envisaged. The Vice Admiral pointed out that costly projects found in China and the USA such as the building of artificial dams and levees cannot be replicated in the Bay of Bengal, but cost-effective solutions such as floating jetties should be considered and prioritised.

The Vice Admiral concluded with a presentation of **current NMF projects and partnerships** with institutions such as the FICCI and European think tanks with whom they currently conduct workshops. They have also been discussing with the think tank BIMRAD and institutions in Sri Lanka, BOBP-IGO, as well as talking with senior leaders. They have also a conference on climate change and security in the Indo-Pacific. French input and expertise would be mostly welcome, stated the Vice Admiral.

**The Vice Admiral concluded with a recap of his previous statements:**

- **Be careful about the usage of blue economy. The focus should be on 'blue'.**
- **One should not conflate ocean economy with blue economy.**
- **Fisheries are important, but there are also other areas that should be talked about.**

#### **Dr. P. Krishnan, Director, Bay of Bengal Inter-Governmental Organization (BOBP-IGO), regional**

Dr. Krishnan shared a short presentation of BOBP's perspectives. He started by saying that there is established regional framework with clear mandates including:

- Political/multisector bodies : IORA, BIMSTEC, SAARC;
- Fisheries bodies: BOBP-IGO, IOTC, APFIC-FAO
- Environmental bodies: SACEP

However, actual country to country cooperation is limited. The role of BOBP is balancing autonomy and cooperation is a major challenge

He presented the organizational structure of contracting parties such as Bangladesh, India, Maldives and Sri Lanka and cooperating parties, such as Indonesia, Malaysia, Myanmar and Thailand. He also displayed the topics studied in the BOBP, such as fisheries resource management, ecosystem and biodiversity conservation, livelihoods and occupational safety throughout research and advocacy missions.

He illustrated the existing regional collaboration focusing on fisheries research in India, saying that Indian fisheries institutions collaborate globally, with USA, Canada and Australia as major collaborators and saying that India and Bangladesh are leaders in freshwater aquaculture. However, research collaboration between them is insignificant.

Dr. Krishnan developed that the blue economy is endorsed at the highest level of the Government in the three countries. Then he focused on **fisheries**, which is viewed as a livelihood sector, while new blue ventures have largely

commercial focus. This will increase opportunity cost of areas where fisheries is concentrated on. Dr. Krishnan pointed out two elements: port-led development will increase shipping traffic and the need of balancing conservation and production measures. He explained that there is a data gap in this sector as economic value of the contribution of fisheries to food and nutritional security, employment etc is not available. As a response, he suggested **a need for marine spatial planning at national/regional scale**. Plus, he highlighted the status, issues and needs of fish stocks in the region saying that there are high incidence of IUU fishing, issues of meeting global targets on sustainability, data gaps as most reports on state of the resources are estimated only and policy advocacy getting more difficult with inadequate data backstopping. As another response, he suggested to re-imagining fisheries management with participatory approaches for near-real-time stock assessment by:

- i. **Develop a methodological framework, in partnership with government bodies and expert institutions for collecting fisheries data and analyzing them;**
- ii. **Pilot test the framework in different geographies and develop a roadmap to scale up the approach;**
- iii. **The framework will aid in capturing the Hidden Harvest from Small-Scale Multi-Species Fishery in addressing IUU fishing;**

And he suggested a regional open fisheries data alliance to integrate near-real time data aggregation at various levels.

He finished his intervention presenting possible contributions for the French know-how:

- i. **As a member of IOTC, France can assist the Bay of Bengal countries in strengthening fisheries management data and stock assessment**
- ii. **France can provides technological assistance/collaboration in marine spatial planning, satellite-based stock and effort estimation, specific for tropical waters, fisheries block-chain to strengthen traceability and eco-labelling and capacity development programmes in fisheries management.**

## Session 2 – Developing nationally and regionally viable projects to enhance the value chains of blue economy

### Mr. Manish Singhal, Deputy Secretary General, Federation of Indian Chambers of Commerce & Industry, India

For Manish Singhal, India has a huge opportunity to enhance its economic role through blue economy, which currently makes up 3-5% of the overall GDP. For Manish Singhal, regional attention is key to development. He then suggested a blue economy road map, to which France could add opportunity. Manish Singhal has already been in touch with the president of the French Maritime Cluster, with whom he discussed how to make blue economy focus and ecosystems more effective in large economies such as India and France, praising the French structures already in place.

Manish Singhal highlighted that there are countries where 10-15% of their GDP is made up of blue economy. However, he stated, **this depends on how finance can be innovated, built on technological capabilities. He also added capacity building**, as touched on by Vice Admiral, is important to bring blue economy to the forefront, especially in the Bay of Bengal. Based on recommendations from FICCI, such as blue economy budget allocations, blue economy can be developed to a higher economic potential.

Returning to the subject of regional governance, Manish Singhal pointed out the enormous potential blue economy ecosystem that exists in the Bay of Bengal, around 1,8 billion people. Manish Singhal then discussed potential solutions to boost the economic activity of blue economy in the region in **three areas**:

- i. **Need to look at the financial instruments available to enhance sustainable blue economy development.** All three states (Bangladesh, India, Sri Lanka) are striving to enhance blue economy resources and at the same time development and economic growth. This depends on financing the blue economy system available.

Manish Singhal pointed out the success of public-private partnerships which exist in India and have solved a lot of finance related issues and obtaining adequate technology.

- ii. **Need for a framework measurement of the blue economy ecosystem.** Manish Singhal emphasized the importance of measuring the impact and success of blue economy in the Bay of Bengal.
- iii. **Need to learn from France’s experiences and practices of how blue economy can be a driver of progress without harming marine biology or coastal biology.**

Manish Singhal finally highlighted the need to **work bilaterally between the three countries to achieve these solutions.** In this way, Manish Singhal demonstrated how the countries could learn from each other’s practices and adopt them. He then highlighted the bilateral dialogue that has been established between India and France.

Manish Singhal concluded with a presentation of the beginning of FICCI’s involvement with blue economy which started in 2016. This work has then continued with continuous research, focusing on the best global practices which India can adopt, as well as on sectors where India can pursue blue economy.

### **Mr. Martin Lemenager, Senior Program Manager for Infrastructure, AFD Office in Indonesia**

Mr. Martin Lemenager’s intervention focused on AFD contribution to blue expertise and projects in Indonesia. He has divided his presentation into 3 parts:

- **Presenting the Indonesian’s blue context.** First, Indonesia is the world’s largest archipelago nation, gathers 17% of the world’s blue carbon reservoir thanks to mangroves and is considered as the “amazon of the ocean”. Secondly, Mr. Lemenager highlighted 3 main challenges in the country: conservation of biodiversity and marine/coastal ecosystems, sustainable management of fisheries sector, marine resource and port infrastructures and climate change vulnerability. He presented briefly the national strategy focusing on maritime sector, as one of the ley pillar of the national development strategy. He also developed the France-Indonesia Partnership focusing on Joint Statement for a Maritime Cooperation and Maritime Bilateral Dialogue
- **AFD in Indonesia – snapshot:** France is one of Indonesia’s main development partners, supporting Indonesian transition towards a low carbon development throughout a fair and resilient transition including the preservation of natural resources, sustainable management of oceans and coastal areas. In terms of data, it represents more than 250 billion dollars annual commitments, more than 20 on-going projects, 14 employees and 75% climate co-benefits.
- **Presentation of main projects,** such as Space oceanography, marine meteorology, oceanographic research vessels and eco-fishing ports ; **presentation of supporting reforms** such as sea transport and logistics sectors and plastic marine debris and **presentation of CSO, knowledge** such as post-tsunami fishery restart, blue action fund and marine plastic debris study and modeling.

### **Mr. Loïc Monod, Bioeconomy research officer, France AgriMer**

Mr. Monod presented a study carried out in 2020-2021 on biomass resources from fishery and aquaculture activities and their reuse. He developed his presentation into 5 parts:

- **What is blue bioeconomy:** Mr. Monod defined it as all the economic activities linked to production, collection, processing and reuse of aquatic biomass (sea and fresh water)
- **Study context and objectives:** Mr. Monod explained that this study aimed at building a knowledge base on blue bioeconomy in Metropolitan France and feed the National Biomass Resources Observatory in France and identifying along with Fishery and Aquaculture professional sector, the threats and opportunities for reuse of aquatic biomass. It aimed at drafting a report detailing recommendation, such as to make an inventory of resources and uses of aquatic biomass

- **Study perimeter:** He explained that this study focused on 21 sea and freshwater species or group of species (fishing, fish farming, shellfish farming and algae), focusing on by-products generated by production and processing (distribution and end-use excluded) in Metropolitan France. He highlighted that the study used data from 2018 as it is hard in this sector to get recent data.
- **Presentation of the main results:** Mr. Monod explained that about 210 000 tons of by-products were generated by the production and processing activities in Metropolitan France in 2018, with a clear predominance of salmon by-producted. He detailed how are by-products reused saying that out of 210 000 tons, about 160 000 tons were reused, in particularly fishmeal and fish oil, fish hydrolysate, pulp, petfood, soil enrichment and food ingredient.
- **Obstacles to the development of blue bioeconomy and foot for thought:** Mr. Monod detailed two mains obstacles:
  - o **Logistical obstacles:** geographical dispersal of the resource – only a few large hubs (55% of the obstacles mentioned by audited actors); products dependency to seasonality and fishing contingency; eviscerated products imports – by-products generated abroad; wide diversity of species = wide diversity of by-products types; wide diversity of reuses = difficulty to build structures sectors from upstream and downstream
  - o **Reinforce the knowledge base of French blue bioeconomy:** benchmark the actions carried out across the borders to organize similar actors (not only in Europe); organize experience sharing between sectors and between regional territories; start up “pilot” areas; improve by products quantification through the addition of boxes in agreste annual survey; widen the study perimeter towards downstream: retail, food service, fish shops, household waste.

#### **Mr. Nicolas Vuillaume, Indian Ocean Representative, Collecte Localisation Satellites (CLS)**

Mr. Vuillaume started saying that CLS has a strong expertise in sustainable fisheries management and presented the company CLS, which has CNP (66%) and CNES (34%) as shareholders. The company gathers 800 employees deployed in 30 locations worldwide. CLS has 30 years’ experience making use of satellite technology to provide data collection and earth observation. With this data, CLS develops systems, application and value-added services. CLS works on 5 strategic sectors: environmental monitoring and climate, sustainable fisheries management, energy and mining, maritime safety and fleet monitoring.

Specifically on the fishery sector, CLS’s mission is to provide solutions to better understanding what are doing the vessels on the seas. Among different solutions developed by CLS, Mr. Vuillaume presented:

- **VMS** (Vessel Monitoring Systems) provides 20 000 daily reports to flag states and RFMOs). It allows doing enforcement and scientific assessment.
- **ERS** (Electronic Reporting Systems) consists in electronic logbooks. Fishermen used to report their activities in paper books. Thanks to the ERS, it saves time and efficiency for fishermen to collect and assess their data.
- These two solutions, VMS and ERS, are collecting to **FMC** (Fisheries Monitoring Centers) developed by CLS, which has been provided to over 40 countries. This technology is called THEMIS.
- **OCEANAO** is a stock assessment model, called Seapodym. It aims at combining these kind of data with scientific data such as animal tracking to determine what will be the state and the condition of given stock.

Mr. Vuillaume detailed the VMS features and how it works for fishing net deployment monitoring. He focused on a specific VMS transponder, called Nemo. He highlighted that CLS has ongoing deployment projects/pilot projects in the Indian Ocean, in particular in Comoros, South Africa and Mozambique.

Concerning the ERS, he presented how it works for fisheries activities and catch data. He underlined that the most interesting thing is to match data gathered from different solutions CLS’s provide, such as: VMS – license registry –

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vessel registry – track fleets – generate alerts – monitor MPA; ERS – fishing activities and catch reports; INN – illegal activities detection; SSF – monitor coastal fisheries; E-GEAR – fishing gear management; OCEAN – favorable fishing grounds; SAR operation – optimize SAR operations.

**Dr. Mostafa A. R. Hossain, Professor, Aquatic Biodiversity & Climate Change, Department of Fish. Biology & Genetics, Bangladesh Agricultural University, consultant with AFD Bangladesh**

Dr. Mostafa Hossain was assigned by AFD to conduct a consultancy on the value chains of the blue economy in Bangladesh. The study was undertaken to review the needs of the sector and priorities of Bangladesh, to identify potential subsectors and to prioritize the intervention areas. A number of key intervention areas were identified by the study such as:

- Supplying reliable data and accurate statistics;
- Development of proper inventory of the marine resources;
- Reassessing the fishing grounds;
- Farming of marine fish, sea weed, crab and molluscs;
- Deep sea fishing covering maritime boundary;
- Updating marine weather forecast, oil, gas and mineral exploration, development of ecotourism, maritime trade, renewable energy and human resources development.

In accordance to the objective of the mission, Dr. Hossain drafted three concept notes about:

- **Transformation of ship breaking yards of Bangladesh to environmentally friendly green shipyards,**
- **Strengthening research capacity of the Bangladesh oceanographic research institute (BORI),**
- **Strengthening the capacity of the Bangladesh meteorological department (BMD) to provide more reliable marine weather forecasting services and to improve accessibility to such services by the end-users.**

**Dr. Arnab Das, Executive Director & Founder, Maritime Research Centre, India**

While participating in our three workshops, Dr. Das spoke about the **growing momentum of the discussions since the first workshop**. He said that this last workshop can be considered a ground session. From both side, from France and from the Bay of Bengal, he noted that **there is far clarity of thought and direction**. It is now about us putting things together. As a last comment, Dr. Das insisted on **the formulation of the user, academia and industrial partnership that the entire human flow of resources can be optimized in a sustainable manner. The financing mechanism needs to be developed in a self-sufficient manner**. The concept of blue financing is very important for any kind of stakeholders. Also the participation of local actors has to be in a manner that we are able to define what we want and what we want to steer. Dr. Das insisted on **the equal partnership from local and external, French side for instance, participation, as the Bay of Bengal has uniqueness that need to be taken account**. This series of workshop has been very thoughtful and constitutes a first step of cooperation.

**Mr. Aruna Maheepala, Senior Research Officer of National Aquatic Resources Research and Development Agency of Sri Lanka**

Mr. Aruna Maheepala gave a pithy snapshot of local blue expertise and projects in Sri Lanka. He started his presentation detailing key figures of blue economy in Sri Lanka in 2019, major commercial harbors in Colombo, Galle, Hambanthota and Trincomalee. He then presented major projects developed in Sri Lanka, with the support of the National Aquatic Resources Research and Development Agency such as:

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- Development of coastal aquaculture, lagoons and fishery harbors development;
- Port city development/Colombo International Financial City;
- Development of second phase of East Container Terminal (Colombo Port – The port of Colombo will handle over 24 million TEUs by 2040);
- Mannar Wind Park (largest wind energy project in Sri Lanka – 280-400 GWh per annual leading to 265,731 tonnes of CO2 by way of reducing thermal power generation)
- Kalpitiya Intergrated Tourism Resort Project
- Blue Flag Beaches

### **Mr. Shri Aditya Dash, Vice Chairman, Marine Products Export Development Authority (MPEDA), India**

Mr. Dash started his intervention reminding us the role of the Marine Products Export Development Authority that aims at promoting the export of seafood products. He talked about his blue economy's perception focused on aquaculture, as he is a specialist on aquaculture. Over the last decade, India has become an aquaculture power state. India is one of the larger providers in the world of shrimps. He reacted from the bioeconomy's presentation made by Mr. Monod on French biomass by-products. Mr. Dash was surprised that in France, at least in the study presented there was no shrimp.

MPEDA's sub organizations can be partner or implement with the AFD a lot of projects that these workshops were talking about, such as Rajiv Gandhi Center for Aquaculture (aquaculture R & D), NetFish (sustainable artisanal fisheries) and NaCSA (sustainable aquaculture). They can take the lead and promote a vibrant and sustainable seafood sector in Sri Lanka and Bangladesh.

- i. **Rajiv Gandhi Centre for Aquaculture** is the Research & Development arm of the Marine Products Export Development Authority (MPEDA) that is involved in the development of various Sustainable Aquaculture Technologies and the promotion of sustainable aquaculture practices. Along with the AFD, the Rajiv Gandhi Center for Aquaculture, cooperation can be possible in India, Bangladesh and Sri Lanka.
- ii. **National Centre for Sustainable Aquaculture (NaCSA)** is working towards making aquaculture sustainable activity to improve livelihoods of coastal villagers in India, Bangladesh and Sri Lanka, with an "self-help group" approach, international markets to address food safety and other market concerns through collaborative approach of all stake holders involved. In this kind of framework, the potential of collaboration is huge. Mr. Dash also underlined the idea of a potential French label or certification in the initiatives and projects related to the blue economy, in particular with shrimp projects developed by NaCSA.
- iii. **NETFISH (Fish Quality Management and Sustainable Fishing)**. The major objectives of NETIFSH is to empower fisheries sector by imparting knowledge to fishermen, fisherwomen, processing workers, technicians, other fishery stakeholders etc. on fish quality management, conservation of fish resources and sustainable fishing. There is a lot of scope of collaboration, notably with CLS. The kind of technology developed by CLS would be helpful to the fishermen.

He also highlighted that France is innovative in the field of insect meal, as an **alternative of food**. There is one French start up that provides insect meal, as the soya bean and corn prices are going to grow up. Facing that, we need alternative ingredients, such as insect or algae. We should work on more facilitation with these companies. Mr. Dash insisted then that **we have to focus on climate change**, as the Bay of Bengal is heavily impacted by the effects and climate disasters. He suggested that a creation of network of micro weather stations at the regional level, with the support of AFD experiences in Indonesia. He finally developed **the necessity of French know how to the development of coastal infrastructures**: more ports, containers, LNG terminals, ship building and breaking etc.

### Mr. Bruno Bosle, Country director of the AFD Office in India

Mr. Bosle started his intervention underling the potential of a blue economy portfolio for the AFD, in particular in India.

From Delhi office, the main activity of blue economy is aquaculture. There is a lot of potential for projects development but this sector is quite well covered by different entities. This is the reason why, the AFD could focus on marine fisheries and is currently investing on gaps to be filled. So far, there are 2 types of possible actions:

- i. **States level:** marine fisheries have a state responsibility. The AFD office is currently approaching coastal states to contribute to the support and the improvement, taking into account the social impacts of this sector with the collaboration of states. The AFD's expertise in terms of infrastructure is significant and should constitute a basis for collaboration.
- ii. **Central level:** the AFD's contribution relies on public policies and political ambitions of the country on blue economy. We are looking at how the AFD can support the national ambitions to be more sustained and deployed. Seeking possible support from AFD, the idea is to find the right balance between economic development and preservation of resources in a sector under pressure from climate change. So far, the AFD sees three main aspects of support: **regulatory framework, funding and information systems.**

### Mr. Reda Souirgi, AFD Sri Lanka represented by Panchali Ellepola, Project Officer

Collaborating with the Ministry of Fisheries in Sri Lanka, Mrs. Panchali Ellepola reminded us briefly the project's aim developed by the AFD. It is a project with four identified priority ports to improve the quality of fish taken, export and sustainable fishing resources, while maintaining and developing employment, modernizing and improving port management. The AFD hoped to replicate this project across the country.

The project focuses on **4 main areas**:

- **Improve harbor infrastructures** to reduce the poor services and maximize the fishing outputs.
- **Enhance harbor management capacity and practices** to implement more effective management and monitoring systems in the 4 harbors.
- **Strengthen the management of Sri Lanka marine and fishery resources** and the monitoring, controlling of the marine and fishery resources.
- **Create monitoring to the value chain** of the sector to allow the fishery communities to power financial benefits and improve livelihoods.

The AFD office hopes that this project will be replicable in other harbors at larger scale, with eventually the support of other agencies such as the World Bank. The AFD interest working with the Sri Lankan's government is not limited to fisheries and harbors development or modernization, but also to work on marine pollution.

### Mr. Benoît Chassatte, Country director of the AFD Office in Bangladesh

Mr. Chassatte started his intervention thanking Dr. Hossain for the presentation about the 3 concept notes the AFD mandated to him. As directing the AFD Office in Bangladesh, **Mr. Chassatte said that so far there is no operational project on blue economy. But there is hope, as the blue economy is a priority for the government of Bangladesh**, which is pushing development agencies, such as the AFD to invest in blue economy. **It's time for the AFD to move forward.** The AFD office in Bangladesh is looking forward to collaborate with the Ministry of Fisheries or the BIRMAD.

### Session 3 – Enhancing shared resources through a regional network

#### **Mrs. Afifat Khanam Ritika, Research Officer Bangladesh Institute of Maritime Research and Development**

Mrs. Ritika shared the fact that this series of workshops is a collaborative work. At many outputs, we have gained through it. She shared some ideas of collaboration, based on the issue brief drafted by The Bridge Tank:

- Fishery is an important sector we can share regionally information. This is why Mrs. Ritika suggested **a formal fishery policy at regional level and a regional platform**. We should work step by step: i) share our knowledge; ii) share our capacity (human resources through national and/or regional scope); iii) share our technology
- The BIMRAD is involved in many projects. Mrs. Ritika insisted in the project named “Traditional and Non-Traditional Threats in the Indian Ocean Region: A Bangladesh Perspective.” It aims at identifying why the marine production is not increasing. In this framework and more broadly, we must work at local level to support farmers can developed their capacity. Not only the BIRMAD should work in this sense but also we **should work bilaterally and regionally**.

#### **Mr. Pattabhi Rama Rao, Group Director, Ocean Observations, Modelling and Data Assimilation Group, Indian National Center for Ocean Information Services (INCOIS)**

Mr. Rao reacted on the issue brief drafter by The Bridge Tank as a very well capture of what have been discussed during the first two workshops. He highlighted the fact there is no regional platform, which is necessary to progress, as we do have individual capacity but we need to bring them together. It is important to prioritize the capacity rather than the nation because we do have different policies. INCOIS has participated in the first two workshops; the first one INCOIS explained the services they provide for different kind of stakeholders and beneficiaries; the second one INCOIS focused on data collection, which is key. But when we want to gather and share data, we are facing certain difficulties from data restriction and data policy. **We have to assess the readiness and availability of such data on information**. We do have multi-stakeholders in the blue economy and the fishery sectors and they may have different policies to share such information. **A platform can be useful to gather these policies and define different guidelines based on data policies on regional basis**. As other speakers mentioned, **starting with bilateral cooperation is key to participate in the data and knowledge sharing**.

#### **Dr. (Mrs) H  l  ne Djoufelkit, Research Director of the AFD**

Dr. Djoufelkit highlighted three main takeaways, thanks to this series of workshops:

- i. We were able to address the **development aspect** of the Indo-Pacific, and not the diplomatic aspect, which is regularly the case in France, and to put the development agenda up.
- ii. All the speakers and the organizers (AFD and The Bridge Tank) know each other better. **For being able to tackle cooperation, knowing better the partners from research, policy making and private sector is key**.
- iii. There is a lot of research existing at national level. What would be key? To implement projects and results. For next steps, Dr. Djouflekit said that **It would be interesting in digging further research, being able to empower and push policy dialogue at national, regional and even at local levels**. The research should not be disconnected from projects.

#### **Dr. Jo  l Ruet, President, The Bridge Tank**

Dr. Ruet concluded by saying that our conversations have converged to **a desire from some institutes to have the conversation going**, by the policy makers, the economic and bilateral organizations in a practical manner. With some

institutes, we have emerged to the idea of a sort of platform, a network will be there. Dr. Arnab Das from the **Maritime Research Center** is encouraging and is willing to offer an organization, which means a sustainable work. We produced a first draft of an **issue brief**, on how should be the contours of this platform or group of discussion. This third workshop have given us foot for thought, this is why we will revised the issue brief based on the third workshop's outcomes and we will share it with all the participants.

#### **Mr. Jacky Amprou, Regional Director for South-Asia, AFD**

Mr. Jacky Amprou concluded **the serie of three workshops has demonstrated AFD partnerships**, between regional and headquarter offices at the AFD, between team France from embassies and private sectors, and between research institutes, think tanks and local partners. As it has been highlighted several times, **the development aspect of blue economy is a priority for AFD in the region**, as part of the French Indo-Pacific strategy. It is in the AFD mandate to contribute to biodiversity protection and to support sustainable economic sectors. **The economic and social aspects** have been mentioned quite often during this serie of workshops and **need to be part of the solutions the AFD's design and implement**. These three workshops able us to **understand better the different stakes in the region**. Not only the AFD, but also the French team can added value in the region and play an important role in the blue economy sector. It was crucial for the AFD to need and meet local actors and we hope it will be interested for them to meet us and what the French know how can offer. **It is a demonstration of how actors from different parts of the world can get inspired by each other**. The AFD is looking forward where this initiative goes and we will build from knowledge we learned from this exercise.