

# Proceedings on the Regional Workshop on **Bluer, Greener and Inclusive Growth in the Sundarban** through an Ecosystem-based Approach



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through an Ecosystem-based Approach





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## REGIONAL WORKSHOP ON

### Bluer, Greener and Inclusive Growth in the Sundarban through an Ecosystem-based Approach

Bangladesh Institute of International and Strategic Studies (BISS) and the Vivekananda International Foundation (VIF), in partnership with the World Bank, jointly organised a regional workshop on **“Bluer, Greener and Inclusive Growth in the Sundarban through an Ecosystem-based Approach”** on 24 May 2023 at the Vivekananda International Foundation. The workshop brought together relevant government agencies, key policy and strategic thinks tanks, civil society organisations, select private sector firms, and development partners from Bangladesh and India.



Covering around 10,000 sq km of deltaic floodplains across India and Bangladesh, the Sundarban region contains the largest contiguous block of mangrove ecosystem remaining in the world. Housing several UNESCO World Heritage sites, Ramsar Sites and other protected areas, these mangrove forests are one of the most cost-effective methods of climate risk resilience and as well as marine carbon sequestration. They also provide livelihood opportunities for coastal communities through fisheries and ecotourism. However, the Sundarban face growing threat from increasing frequency and intensity of natural disasters, climate change impacts, coastal reclamation for aquaculture and infrastructure development, etc.

The spirit of the bilateral cooperation in the Sundarban Region is reflected in three MoUs on (i) Conservation of the Sundarban; (ii) Management of tigers; and (iii) Cooperation in the field of fisheries. The Prime Ministers of Bangladesh and India reiterated their commitment to cooperation on Sundarban through the India–Bangladesh Joint Statement in September 2022 calling for the effective implementation of the 2011 MoU on ‘Conservation

of the Sundarban’ so that the *“ecosystem of this deltaic forest and the people dependent on this ecosystem can live sustainably”*.

The Sundarbans region comprises a shared ecosystem between India and Bangladesh requiring joint effort and collaboration for sustainable livelihoods and natural resources management. It provides an ideal opportunity for strategic cooperation and joint/coordinated actions simultaneously resulting poverty reduction and green-blue capital management. Developing a co-management policy and advancing investments in a coordinated manner will lead to higher level of sustainable growth for over 7.5 million inhabitants facing similar dimensions of poverty and environmental threats. Within this backdrop, this regional workshop involved three key objectives:

- (a) Engage key senior policymakers from Bangladesh and India on Sundarban cooperation
- (b) Identify specific operational pathways and innovations to achieve Bangladesh-India cooperation on Sundarban under the aegis of the 2011 MoU on Conservation of the Sundarban
- (c) Prioritise identified interventions across key sectors towards sustainable development in Sundarban Region.

**Mr Bhupender Yadav**, Honourable Union Minister for Environment, Forest and Climate Change, Government of India (GoI), graced the event as the Chief Guest. **Ms Habibun Nahar MP**, Honourable Deputy Minister for Environment, Forest and Climate Change, Government of Bangladesh (GoB), graced the event as the Guest of Honour. **Mr Saber Hossain Chowdhury MP**, Chairman, Parliamentary Standing Committee on Environment, Forest & Climate Change, GoB, graced the event as the Special Guest. **Dr Arvind Gupta**, Director, VIF, delivered his Welcome Remarks before the Keynote Address. The Keynote Address was delivered by the Chief Guest, **Mr Bhupender Yadav**, Honourable Union Minister for Environment, Forest and Climate Change, GoI, titled, **“Spurring inclusive growth through an Ecosystem-based Approach: India’s global climate leadership”**.

There were a total of four sessions during this regional workshop, including the inaugural session. The inaugural session was moderated by Dr Arvind Gupta, Director, VIF, with Opening Remarks by **Mr Auguste Tano Kouame**, World Bank Country Director, India. The Guest of Honour, **Ms. Habibun Nahar MP**, Honourable Deputy Minister for Environment, Forest and Climate Change, GoB delivered her speech on **“Enhancing Social and Economic Growth of Sundarban-Dependent Communities”**. The Special Guest, **Mr Saber Hossain Chowdhury**, Chairman, Parliamentary Standing Committee on Environment, Forest & Climate Change, GoB, delivered his speech on **“Strengthening climate resilience through bilateral cooperation”**. The Key Takeaways were given by **Mr Abdoulaye Seck**, World Bank Country Director, Bangladesh and Bhutan. This session ended with a Vote of Thanks from **Major General Sheikh Pasha Habib Uddin**, Director General, BISS. The first working session began after the conclusion of this Inaugural Session.

Senior government officials from Bangladesh and India, experts and representatives from key policy and strategic thinks tanks, civil society organisations, select private sector firms, and development partners participated in and enriched the regional workshop by presenting their valuable opinions, comments, suggestions and observations.



## WELCOME REMARKS



**Dr Arvind Gupta**

*Director, Vivekananda International Foundation (VIF)*

At the outset, Dr Arvind Gupta, Director, Vivekananda International Foundation (VIF), reminisced his last visit to Sundarbans which was mainly from the security point of view. He looked at the area from the Indian side. He said the Sundarbans is so beautiful but it has another side. Covering around 10,000 square kilometers of floodplains across Bangladesh and India, this region contains the largest contiguous block of Mangrove Ecosystems remaining in the world. This is also considered to be the most disaster-prone climate vulnerable area in South Asia. There are about 8 million people who live here and if its border is taken as the region which includes Dhaka and Kolkata, perhaps about million of people are living in the area who are impacted as well. Hence, this region is very important for climate refugees. Therefore, his thought was that the MoU on the Sundarbans between Bangladesh and India obviously requires collaboration among not only agencies at the official level but also at the level of parliamentarians, track 2, track 1.5, experts and so on. On a related note, he also acknowledged the significant role of the World Bank.

In conclusion, Dr Gupta stressed that emphasis on life should really become a mission, not only for India but for other countries as well. The MoU on the conservation of Sundarbans, along with other MoUs has created a wonderful framework for cooperation and he considers that there will be a lot of discussion on the progress of

its implementation. Essentially, this MoU would help both the countries to deal with the challenges in the area like poverty, frequent natural disasters, sea level rise, increasing salinisation, gradual reduction of ecosystem services, and climate refugees whereas many of the islands are sinking. He also mentioned that along with COP28 and in many other fora, representatives of both the countries should talk more about unsustainable consumption and the international organisations like the World Bank can play a big role in popularising these concepts. He concluded with a request to those organisations to start these discussions in their workshops. He highlighted the action point about cross-border carbon tax that is based on the way of energy production. He suggested evolving some economic instruments to support life and that is where he thinks the World Bank can contribute because they are funding. In that area, he argued, some effective instruments would incentivise those who are living in fragility.



## KEYNOTE ADDRESS

### Spurring Inclusive Growth Through an Ecosystem-based Approach: India's Global Climate Leadership



**Mr Bhupender Yadav**

*Honourable Union Minister for Environment, Forest and Climate Change, Government of India*

Mr Bhupender Yadav greeted everyone and began by highlighting that the split by border between India to the west and Bangladesh to the east, crowning the Bay of Bengal, the world's richest and most diverse river delta works like South Asia's showerhead, and that fed by Himalayan snow melt and monsoon rains, the three great flows of the Ganga, the Brahmaputra and the Meghna river, are all in one vast tangle. He then pointed out that it is within that vast triangle, that one of the earth's great water filters, the mangrove forest of Sundarbans. Such is the beauty of this natural blessing that it comes to be called Sundarbans. Sundarbans, a beautiful forest running between Bangladesh and India, among many things is a symbol of shared legacy between the two countries and that legacy has been shared peacefully and through mutual understanding. He thus congratulated the Bangladesh Institute of International and Strategic Studies (BIIS) along with Vivekananda International Foundation (VIF) and the World Bank for organising this regional workshop on bluer, greener and inclusive growth in Sundarbans through an ecosystem-based approach. Ecosystem-based approaches focus on the restoration and enhancement of ecosystem services to protect society against the negative impact of climate change. The ecosystem approach makes it clear to link the status of the natural resources system and ecosystem service that support human well-being.

Mr Yadav drew the audience's attention with how the ecosystem approach sometimes can be misunderstood as an approach of using the ecosystem to support human well-being. As part of the developing world, both Bangladesh and India are well aware of the problems of this approach. Mindless development in the name of human well-being in the western world is the reason why we are facing increased climate disasters. Setting the ecosystem as a means of human well-being has been proven to be a 'fluid' idea. Nature does not exist for human well-being alone. He cautioned that exploiting nature can impact human well-being because it is after all one with nature. The Sundarbans is a thriving example of 'oneness' with nature.

Mr Yadav pointed out that Sundarbans is a critical and priceless gift of nature to both Bangladesh and India. It is important not only for the local people, but it spawns the civilization of this area. It has national, regional, and international importance. In this Track 2 level workshop, he expressed his pleasure as the officials and Honourable Minister were present there which would give recognition to the MoU that was signed between Bangladesh and India way back in 2011 and to the implementation of that MoU. According to him, the important thing is to create necessary awareness about the Sundarbans, and the mangrove forests that it has. Today, when the awareness about climate change has grown so much, that people are really worried as to what is happening to our climate and want to know how to deal with it. He informed that India has taken a number of very important steps to meet requirements under the Paris Agreement in terms of mitigation, adaptation, and clean energy. He considers that the Sundarbans area is also very important from the mitigation point of view as a carbon sink because the mangrove forests are 50 times more effective in absorbing the carbon than a normal forest would do. So the importance of the mangroves is very important.

The ecosystem approach should work for the well-being of all life on earth, plants, animals and humans included. He mentioned the folk tale of Banadevi (Goddess of Forest) which underlies the same message of the need for harmonious coexistence between human and nature. In this tale, Banadevi is the protector and Dakhinrai, the destroyer. The legend of Banadevi is a moral tale and it tells us that nature nurtures us and therefore nature is our mother. Those who protect nature are also protected by nature but those who destroy nature are instead destroyed by the forces of nature. He stated that the same spirit is reflected in the motto of India's Ministry of Environment, Forest and Climate Change which is *Prakrti Rakshithaha Rakshathaha*, which translates to *nature protects if she is protected*.

Sundarbans offers the largest contiguous mangrove forest in the world. It accounts for the largest population of the Royal Bengal Tiger, an endangered species. Interestingly, the Sundarbans mangrove is the only mangrove habitat for tigers worldwide. With an estimated population between 400 and 450 shared between India and Bangladesh, Sundarbans has a higher density of Royal Bengal Tigers than any other population of tigers in the world. Dakhinrai is therefore worshipped as the supreme lord of the tiger in the whole of Sundarbans. The area thus supports an exceptional biodiversity in its terrestrial, aquatic and marine habitat. The biodiversity ranges from micro to macro flora and fauna. The Sundarbans is of universal importance, not just for Royal Bengal Tiger, but also the Ganges and Irrawaddy dolphins, the crocodiles and critically endangered endemic river terrapin. He also pointed out that Sundarbans finds mention in the Ramayana, Mahabharata and in other scriptures as well.

Then he mentioned a beautiful prayer that says *Vipad e poriya bon je jon daka he, ma boliya bonabibi daya ra matake*, which stands for how facing any danger, inside the forest, whoever prays to the deity *Bonabibi*, is protected. *Bonabibi* and *Dakhinrai* are even today worshipped by those entering Sundarbans to collect forest produce for sustenance. He has mentioned these aspects of Sundarbans to underline the point that Sundarbans is not an ecosystem that exists for human gratification, but instead part of the biological, civilizational and cultural existence of the people of India and Bangladesh. He expressed his commitment to protect the region to save our civilizational connection with the Sundarbans.



To achieve that aim, Mr Yadav said that what is needed is to protect the water, the trees, the wildlife and human life linked with Sundarbans. He highlighted that the mangroves cover only about 0.1 per cent of the planet's surface, yet they can potentially store up to 10 times more carbon per hectare than terrestrial forests. That is why he said that Honourable Prime Minister, Shri Narendra Modi ji, was quick to realise the importance of mangroves in climate action. He highlighted that India joined the Mangrove Alliance for Climate during COP27 in 2022. India also called for the integration of mangroves into the nation, reducing emissions from deforestation and forest degradation at the summit. In budget 23-24, India announced MISTI. MISTI is a Bangla word for sweet, but it also stands for the Mangrove Initiative for Shoreline Habitat and Tangible Income (MISTI). MISTI is a significant step in providing ecosystem-based solutions for mitigating the effects of cyclone and storm surges and our fight against the climate crisis. Under this scheme, India is taking up mangrove plantation along the coastline and on salt pans. He said that the world has much to gain from India's experience in mangrove conservation, as they have shown expertise in the area for nearly five decades. India has restored different types of mangrove ecosystems on east and west coasts and learned some valuable lessons spread across nearly 50,000 square kilometres. The mangroves can remove 9 tons of CO<sub>2</sub> daily, which is equivalent to about US \$270 million in the international market.

India's mangroves have high species diversity, with around 52 mangrove species and more than 60 mangrove-associated plant species. The faunal diversity of the mangrove ecosystem contributes to about 5 per cent of Indian fauna. Mr Yadav expressed his joy to share that when Hon'ble Prime Minister Shri Narendra Modi released the Tiger Census report in April 2023, which shows that the Indian Sundarbans had registered a rise of at least 14 per cent of its tiger population, recording the presence of a minimum of 100 of the tigers. In 2019, the number was 88. At a time when globally the rate of mangrove decline is approximately 1 per cent per year, India has recorded a net increase of 946 square kilometres between 2017 and 2021.

Mr Yadav said that there is a lot that the world can learn from Indian efforts at protecting mangroves. These achievements notwithstanding, India does realise that the Sundarbans ecosystem is at the forefront of climate change. The increasing frequency and intensity of cyclone, sea level rise and salinity is a warning bell for immense intervention in terms of mitigation and adaptation of the local village communities. The communities of Sundarbans have been one of the smallest contributors to climate change, with one of the lowest carbon footprints, but nonetheless have been subjected to its vast impact.

Mentioning the challenges in the Sundarbans area, he highlighted that in terms of adaptation, the traditional livelihood of fishing, crab collection and agriculture are slowly becoming unsustainable due to increasing salinity, changing biodiversity and increasing sea levels. These adaptation measures can be various initiatives that can provide them with sustainable livelihoods and increase their standards of living within the sustainable limits of the region. India accords a huge importance to the blue economy, focusing on sustainable and climate resilient coastal infrastructure and livelihood of coastal communities.

He then stated that their government is steering ahead with its Marine Spatial Planning (MSP) to develop a blueprint for area-based management with multiple management objectives. He pointed out that almost all families living in the Sundarbans ecosystem depend on fish, either for food or their livelihoods. Additionally, PM Matsya Sampada Yojana is working to bring about ecologically healthy, environmentally viable and socially inclusive development of the fisheries sector. He said that the Blue Revolution scheme was born out of the vision led by the PM of India when he said that it was time now to participate in the Blue Revolution, as depicted in the blue colour of Ashoka Chakra. The *Matsya Sampada Yojana* was launched with the outlay of rupees INR 30 billion, a key facet of the Indian governance model that he highlighted is the whole of governance and whole of people approach. Different ministries and departments come together to ensure the schemes made for people's welfare actually work for them.

He pointed out that if one ministry takes care of the fisheries department, the others ensure that there is logistical support, its trade, and self-help groups work to ensure that local folks are trained in the latest technology to increase production and carry out trade. The self-help groups involve local communities and so use a combination of top-down and bottom-up approach for maximum output. In the Sundarbans, in the midst of many opportunities he was happy to note that India and Bangladesh are committed to harnessing these opportunities responsibly.

In conclusion, Mr Yadav said that the two nations are working together to ensure sustainability of the ecosystem of this important forest, and that the welfare of the people dependent on this ecosystem. He emphasised that the journey of a thousand miles begin with a single step, and he hoped that this regional workshop will be able to set the direction and increase the pace of this journey toward restoring the beauty of Sundarbans so that at its beauty would be preserved and ensure our coming generation see the best of Sundarbans while being able to make the most of it.





## DISCUSSION



The moderator thanked the minister for his insightful delivery and for bringing attention of the house to the very famous saying from VIF scriptures, Sainabhavutu. He said that it is almost like an anthem for the VIF and is thus mentioned often. He considers that the cooperation that is required to deal with today's very massive challenges should be in the spirit of this particular verse.

In the area of climate change, the problems are so severe whereas there has been a lot of effort as well as thinking in order to find how to work together as people are now facing real problems. Mentioning the COP28, he said a lot of these challenges will be coming up, but the nature-based solutions should be emphasised, as the Sundarbans itself is a prime example of such a nature-based solution. Moreover, the neglect to provide ecological services to the local people is another significant concern in this regard. He has, however, commented on how there is a lot of debate present regarding the ecology and nature-based solutions.

Dr Gupta pointed out that one stream of thinking indicates the developed countries are diverting attention from their own obligations by focusing it towards nature-based solutions and ecology, since then their own obligations, to fulfil their own obligations with respect to climate financing, get diluted.

The other view is that nature-based solutions and ecology are very important because these are the community based solutions. According to him, this debate goes on but the VIF considers that views of nature and ecology are

very precious. This movement actually started in the West in about the 1960s. He referred to a Norwegian great philosopher Erne Ness. In his view, the current Western development model is essentially an anthropocentric model which says that only the human species is supreme and that all development is based on facilitating the human species. Therefore, the consumption pattern is much higher in Western developed models. From the 1970's, this philosophical thinking of Erne Ness and the other philosophers in the West have shifted from the anthropocentric model to the biocentric model is best. Therefore, the preservation and conservation of nature and all these things are important. Now however, the world realises that even the biocentric development model has flaws.

Stressing on sustainable consumption, Dr Gupta referred to India's prime minister who talks on an environment friendly lifestyle. Hence, mitigation measures by the government, adaptation measures by the society are necessary but an environmentally friendly lifestyle by the individuals are also extremely pivotal. Pointing to the pattern, He said that, despite having 17 per cent of the world population, the carbon emission is only 4 per cent whereas it is almost 60 per cent for a similar percentile of population in the developed countries. For all the 54 African countries, the percentage of carbon emission is only 4 per cent. This data makes it abundantly clear that if everybody consumes the product as a style of western living, then there is a need for not just one, but seven earths. That is why he has frequently brought up the ecosystem based approach, which, for him, is the most appropriate approach to take. He then shared a beautiful prayer, *Om Isha Vasyam Vidham Sarvayat Kinch Jagatyaam Jagatena Takhtena Bhujikta Maa Grada Kasyasvidadanam*. This prayer means that all that whatsoever exists in the universe, is covered by the Lord in another world by preserving the divine presence of everything.

He highlighted the world announcement of how the critically endangered species and living beings must be preserved by 2030. Humans on an average regularly consume 50,000 biodiverse plants, flora and fauna per day, for the purpose of energy, food, oil, cosmetics and medicine. As a result, unsustainable use of nature is not a solution for the world. He pointed to the reason their Prime Minister started the Mission Life and they started a portal by their ministry named "My Life" where he requested to join that portal. And that reason is to give a major contribution to the movement which they wanted to restart to save the earth.

According to him, emphasis on life should really become a mission, not only for India but for other countries as well. He emphasised to use COP 28 and many other fora where leaders should talk more about the unsustainable consumptions and in this regard international organisations like the World Bank can play a lot of roles, especially a big role in popularising these concepts. One of the panelists requested these organisations to start these discussions, the workshops etc., on what this emphasised concept of "life" actually means, and, what this deep ecological connections are in detail. He pointed to the cross-border carbon tax which is really based on the way of production whether energy or the production process, etc., are carbon intensive, the product will have more tax.

As the European Union has proposed to protect the interests of developing countries also. He suggested that countries should evolve some economic instruments to support life. That is where Dr Gupta thinks of the World Bank since they are the donors and because every crucial aspect of this initiative of preservation revolves around funding. So, there is a need for developing some instruments which incentivize those who are living in fragility, like people of Sundarbans. He mentioned India's approaches and how they go well prepared at multilateral fora which also necessitate a more cohesive approach.

## INAUGURAL SESSION

The inaugural session was moderated by Dr Arvind Gupta, Director, VIF, with Opening Remarks by **Mr Auguste Tano Kouame**, World Bank Country Director, India. The Guest of Honour, **Ms. Habibun Nahar**, Honourable Deputy Minister for Environment, Forest and Climate Change, GoB delivered her speech on “**Enhancing Social and Economic Growth of Sundarban-Dependent Communities**”. The Special Guest, **Mr Saber Hossain Chowdhury**, Chairman, Parliamentary Standing Committee on Environment, Forest & Climate Change, GoB, delivered his speech on “**Strengthening climate resilience through bilateral cooperation**”. The Key Takeaways were given by **Mr Abdoulaye Seck**, World Bank Country Director, Bangladesh and Bhutan. This session ended with a Vote of Thanks from **Major General Sheikh Pasha Habib Uddin**, Director General, BIISS. The first working session began after the conclusion of this Inaugural Session.

### Opening remarks



**Mr Auguste Tano Kouame**  
*World Bank Country Director, India*

In his opening remarks Mr Auguste Tano Kouame, acknowledged that people should not exploit Sundarbans for livelihood only, rather it should be protected by them. It has a symbolic value which is a connection between Bangladesh and India that all treasure. He reiterated his commitment for working diligently to assist with regional

integration. The collaborative effort between the various institutions in the Bank in India and in the region are going to be an important part to this concerted effort.

He highlighted three points that are very crucial, game changers on the demand side and that require action immediately starting now, to protect the Sundarbans and to develop it. First, the Sundarbans landscape is facing rapid and alarming changes which are mostly driven by climate change, sea level rise, temperature fluctuations, changing precipitation patterns and increased cyclone activities. On this latter point, the mangrove in Sundarbans witnessed 525 cyclonic storms between 1877 and 2016. The communities residing in this area are among the world's most vulnerable populations to climate change and they require resources and institutional support to adapt though they have contributed the least to climate change just like the low contribution in most developing countries, nonetheless they suffer the most from the impact. The second game changer would be to bring attention to effectively responding to these challenges confronting the Sundarbans.

Mr Kouame pointed out that we must work within a framework that focuses on four pillars for resilience and building socioeconomic and biophysical systems. The first pillar goes without saying is to reduce the vulnerability faced by the population living in the Sundarbans. This requires all sorts of actions from various institutions in India, in Bangladesh and also in West Bengal. The second pillar of this response system would be to diversify the livelihood of the communities living in those areas and provide social protection. This requires a balanced approach to use the environment in which people live for economic activities, while at the same time not over exploiting the very environment that protects them. Third, natural resource management and biodiversity conservation needs to be an essential part of what is seen as the support system for the communities within an ecosystem environment.

This means strengthening the connection between nature and people and by nature, it is not just a visible part of nature but also the invisible component including the carbon sink ability of nature. Human beings need to be aware that they also have a claim on the environment. Mr Kouame then cited a quote that the UN secretary general borrowed from Gandhiji who said that, *Earth provides enough for every man's need but not enough for every man's greed*. In other words, the Sundarbans provide enough for the communities living there, for nature





living there, but for maintaining the balance, the equilibrium, then there is necessity to think of the need of other neighbours in the Sundarbans unseen to the public. The last pillar of the strategy for confronting the challenges facing the Sundarbans is on the institutional side. There is a need for coordination and a whole government approach, not just within one country but across countries.

The third point was that addressing the issues in the Sundarbans necessitates joint and sustainable cooperation. However, protecting the Sundarbans will require that the memorandum be implemented quickly which in turn can lead to substantial improvements, including 60 per cent increase in ecotourism, and a 33 per cent growth in fishery sector which the minister highlighted as something very important for the communities there, and a 35 per cent improvement in protection from cyclones and other storms.

Therefore, this memorandum is really a step towards the right direction, but the hope is that the World Bank can contribute to its quick implementation and it is also open to collaborating with the government of Bangladesh, the government of India, and the state government of West Bengal to facilitate its implementation.

He mentioned a few successful examples of basin management or coordination for effectively managing resources shared by countries such as the Lower Danube Green Corridor initiative where Bulgaria, Romania, Ukraine, and Moldova have collaborated to establish a green corridor along the Lower Danube River which has resulted in enhanced natural resource productivity and tourism in the area. There is also the example of the Wadden Sea where Denmark, Germany, and Netherlands have collaborated and created nature-based tourism. There is the organization for the development of the Senegal River Basin where Guinea, Mali, Mauritania, and Senegal have worked consistently together to develop the the Sundarbans, including building hydroelectric power generation and creating thousands of jobs for the communities. Therefore, it is possible to manage resources shared by countries by creating activities for people and protecting the wildlife in that area.

In conclusion, Mr Kouame then offered World Bank Availability to work on these very challenging issues mentioning their studies which looked at the policies and institutional reforms that can address the challenges. He mentioned that, apart from several studies they have worked on specific projects in both countries. They have provided financing through funds allocated to specific regions, especially for Bangladesh and in India and they are looking at how they work with West Bengal and other states to protect nature. In conclusion, he expressed their willingness to work with the governments to adapt them to the long term vision that they want to achieve.

# SPEECH BY THE GUEST OF HONOR

## Enhancing Social and Economic Growth of Sundarban-Dependent Communities



### **Ms Habibun Nahar MP**

*Hon'ble Deputy Minister for Environment, Forest and Climate Change, GoB*

At the outset of her speech Ms Habibun Nahar MP, Honourable Deputy Minister for Environment, Forest and Climate Change, Government of Bangladesh, said that the Sundarbans is the largest contiguous mangrove forest in the world. It covers an area of about 10,000 square kilometres, 60 per cent of which lies in Bangladesh and the rest is in India. It is the home of many globally rare threatened wildlife species such as the Bengal tiger, Australian crocodile, Ganges river dolphin, mast fin fruit, etc. She then added that, in Bangladesh, about 3 million people directly or indirectly depend on the Sundarbans for their livelihood. This forest protects lives and properties in the coastal region from cyclones and other natural calamities every year. Addressing the Sundarbans as “mayer moto”, meaning that the Sundarbans is like a mother, she pointed out that the protection and conservation of the Sundarbans is a moral obligation for present and future generations.

Ms Nahar informed the audience that the Government of Bangladesh has taken several remarkable initiatives for protection and conservation of the Sundarbans through activities like imposing a moratorium on logging in the

Sundarbans. Since 1989, more than 52 per cent of its area has been declared as protected area and collection of harvesting of all kinds of resources is strictly prohibited from the protected areas. Smart petrol based monitoring system has been implemented in the Sundarbans since 2015. The petrol becomes very helpful to monitor and protect the resources. Due to this smart petrol system, wildlife poaching and illegal fishing has reduced significantly. Six dolphin wildlife sanctuaries have been declared for conservation of Ganges river dolphins and Irrawaddy dolphins. The Government of Bangladesh has approved wildlife victims compensation rules in 2021. In case of death by tiger or crocodile, the victim's family gets 0.3 million BDT, and in case of severe injuries, the victims get 0.1 million BDT. Additionally, the government has been initiated to engage the local community in tiger conservation activities by forming a village tiger response team and dolphin conservation team for dolphin conservation, co-management committee and community petrol group involving local communities. She also mentioned that the government is implementing a second generation Bangladesh tiger action plan from 2018 to 2027. To conserve the outstanding universal values of the Sundarbans, the government has prohibited collection of all sorts of forest products including fishes, crabs, honey, etc. By implementing different government initiatives, carbon stock in Sundarbans has been increased significantly. This carbon stock of the Sundarbans was increased from 106 million tons in 2009 to 139 million tons in 2019. She highlighted that Bangladesh and India have similar landscapes of Sundarbans and share tigers and some other wildlife habitat. Both countries have strong collaboration for conservation of Sundarbans and its tigers in 2011.

Ms Nahar said that few MoUs have been signed by both countries for conservation of the Sundarbans and protocol on conservation of bengal tigers. These MoUs and protocols create great opportunities to contact common researchers, conservation activities, skill development, and strengthen collaboration and coordination. She then asked for joining hands to conserve this great forest. She praised India's support to Bangladesh during its liberation war and said that India is still supporting Bangladesh in various development and conservation activities. Ms Nahar highlighted that conservation of the Sundarbans is a common goal that requires going ahead hand in hand to conserve its outstanding universal values.

He concluded by expressing his wish to work together with India for the conservation of the Sundarbans by implementing the signed MoU and protocols.



## SPEECH BY THE SPECIAL GUEST

### Strengthening Climate Resilience through Bilateral Cooperation



#### **Mr Saber Hossain Chowdhury MP**

*Chairman, Parliamentary Standing Committee on Environment, Forest & Climate Change, GoB*

Mr Saber Hossain Chowdhury MP, highlighted that climate change is a global challenge and talking about a global problem actually means talking about a global fix to that problem. Now in that global solution, there is a necessity to have building blocks. The first building block is bilateral cooperation. In case of enlarging the scope of that cooperation, regional and international level cooperation come sequentially.

Mr Chowdhury said that in Bangladesh climate change is being looked at as an existential crisis and nature has given Bangladesh the gift of the Sundarbans and also the Himalayas which are the water towers for South Asia. But with increased global warming, having more ice, which is melting and that means flooding in the short term and in the medium to long term, scarcity of freshwater. That has huge implications whether it be security, whether it be sustaining life as the Himalayas are the water towers for South Asia. Losing the glaciers in the Himalayas will not only have implications for Bangladesh, rather it is true for the entire South Asia. As a result, in the north, there is a problem whereas in the south there is rising sea levels. Thus, Bangladesh is sandwiched in



between the two. In addition, because of such heightened climate adversities, Bangladesh nowadays frequently faces salinity inclusion, droughts, the intensity and frequency of cyclones.

Coming to the global scenario, Mr Chowdhury highlighted that the UNFCCC process started 30 years ago, first 10 years involved mitigation, and then adaptation. Onwards, there was a realization that adaptation by itself was not enough and that the process of adaptation has its natural limits. Now the loss and damage issue has come in. The next phase is probably going to be extinction and that's not an over dramatisation. Therefore, the basic message from all of that is when there is discussion about resilience it is actually about human's ability to absorb shocks and then place themselves at a higher level of resilience for the next impact.

For him, climate change is a very clear example of how the problem is being created faster and quicker than it is being solved. All of the four pillars that the World Bank is talking about are addressing the symptoms and not necessarily the disease of climate change. When this disease is going up to such an extent, to such a length then there will not be much to do. Already global temperature rises of 2.7°C which the UN Secretary General describes as a road to hell as the life support machines may give up at any time. Mentioning the devastation at 1.2 degrees celsius that is being caused in the world today, he raised the question whether resilience is possible at 2.4 or 2.7°C since ecosystems will break down, coral reefs will go. Given the mentioned issues, Mr Chowdhury suggested some alignment between Bangladesh and India to tackle the existential crisis and to adopt some important coping strategies.

Mr Chowdhury thinks that climate change adaptation and disaster risk reduction initiatives are quite similar, if not identical. Actions taken and will be taken by both Bangladesh and India are supposed to be similar in this regard. Therefore, disasters are being driven primarily by climate. As a result, he posited that the benefits of bilateral cooperation are overwhelming.

Mr Chowdhury finally focused on the inability of political maps to depict ecological maps. These ecosystem based maps are on the other hand critical for a lucid understanding of the major ecosystems across the globe, involving rainforests, tundra, and grasslands. Hence, focusing on these maps for the specific purpose of preserving ecosystems is the thinking shift in mindset that we need. By doing so, he expressed the hope that these seminars will facilitate the right questions which would hopefully have the right answers.



## KEY TAKEAWAYS



### **Mr Abdoulaye Seck**

*Country Director for Bangladesh and Bhutan, World Bank*

Mr Abdoulaye Seck, extended his gratitude to all the guests, participants, and organizers. He specifically acknowledged the previous four speakers for laying a strong foundation and making a compelling case for the importance of the Sundarbans.

He emphasized that the Sundarbans holds significance due to its unique ecosystem, where the majestic royal Bengal tiger resides and its forests provide livelihood support to many impoverished individuals. Furthermore, the Sundarbans acts as a protective shield for local communities against devastating cyclones, such as the recent Mokha cyclone that affected Bangladesh and Myanmar.

Mr Seck highlighted two key takeaways from the discussion. Firstly, he emphasized that the Sundarbans is not only a regional asset for Bangladesh and India but also a global asset due to its role as a mangrove ecosystem and its rich biodiversity. However, being located in one of the most disaster-prone and climate-vulnerable areas globally, the Sundarbans and the communities dependent on it face significant vulnerability. Despite this vulnerability, the Sundarbans represents a story of resilience, both for the forest and the communities that rely on its resources.

He then assured the audience that the World Bank is committed to supporting and enhancing the resilience of the Sundarbans and the people residing in the surrounding areas. Mr Seck agreed with the Honourable MP and Chair of the Parliamentary Standing Committee on the importance of resilience and further emphasized the significance of mitigation. Citing population and emission statistics, he highlighted the disparities, with Africa emitting only 4 per cent despite a population share of 7 per cent, while Europe emits 60 per cent with only a 7 per cent population share. Asia, despite having 70 per cent of the world's population, emits only 7 per cent. This underscored the urgent need for countries worldwide to take responsibility for mitigation efforts.

Mr Seck emphasized that as they pursue a path of mitigation in the face of a warming planet, strengthening resilience becomes paramount. This includes the protection and preservation of nature, as well as supporting the communities that rely on it.

He highlighted that they talk about how the development issues at the centre band should be at the core of any coastal resilience agenda, whether in India or in Bangladesh. Moreover, how to make sure that not only they deliver on poverty reduction but on a sustainable ecosystem management. Answering the issue that how doing that would require, he mentioned four sets of actions and the four pillars basically. That will come, of course, in complement to what needs to be done when it comes to mitigation. It is worth repeating those, whether it is about reducing vulnerability, whether it is about institutional reforms, whether it is obviously emphasising this nature-based resilience through natural resource management, and whether it is about the very important agenda which the Deputy Minister mentioned earlier when it comes to social protection and livelihood diversification.

He then came to the second takeaway, a point that he thought the speakers before him were so eloquent in mentioning that the successful management of the center band will require effective institutions at the regional level. He expressed his encouragement regarding the 2011 MoUs on the centre band which clearly outlined a



set of joint activities. It facilitated commitment to transboundary goals and conferred legitimacy for joint and coordinated activities. In contrast, there remain untapped opportunities where the two countries can focus on whereas these opportunities would need to be informed by the identification of common ground, as well as differences between Bangladesh and India. There are obvious similarities when it comes to the mandate for economic development and management of natural resources, as well as differences and synergy with respect to institutional system, level of service provision, socio-economic perception, and even cultural norms and long-standing traditions.

Therefore, Mr Seck hoped that the workshop will discuss the scope for more collaborative activities that the two countries can focus on in many areas where they could cooperate. In his view, the centre band ecosystem provides an ideal opportunity for strategic cooperation and for joint action between Bangladesh and India. He also pointed out that the presence of the Honourable Union Minister of India and the Honourable Deputy Minister of Bangladesh, the chair of the Parliamentary Standing Committee of Bangladesh on this issue gave renewed assurances of the strong commitment by both governments to safeguard the centre band as a national pride, original treasure, and a global heritage.

He expressed his gratitude to the leadership as they showed the way and also to all the attendees including high-level delegates from governments, research organisations, think tanks from both countries as they gave confidence that there is room, there is hope for collective and collaborative actions.

In conclusion, Mr Seck thanked the VIF and BIISS director, for the collaboration in organising this workshop and to all the participants for taking the time to join and participate in this important regional dialogue.



## VOTE OF THANKS



**Major General Sheikh Pasha Habib Uddin**  
OSP, SGP, BAMS, afwc, psc  
*Director General, BISS*

Major General Sheikh Pasha Habib Uddin, Director General, BISS, expressed his gratitude towards the Chief Guest, his excellency Mr Bhupinder Yadav, Hon'ble Union Minister for Environment, Forest and Climate Change, Government of India; guest of honour, her excellency Habibun Nahar, MP, Deputy Minister, Ministry of Environment, Forest and Climate Change, Government of Bangladesh; Special Guest Mr Saber Hossain Chowdhury MP, Chairman, Parliamentary Standing Committee for Environment, Forest and Climate Change, Government of Bangladesh; Dr Arvind Gupta and his team at the VIF, Country Directors of World Bank in India, Bangladesh and Bhutan and their teams at the World Bank's country offices, moderators, distinguished speakers and other participants. He mentioned that it is a privilege to have all participated in this regional workshop on bluer, greener and inclusive growth in the Sundarbans through an ecosystem-based approach. He thanked Mr Bhupinder Yadav, Ms Habibun Nahar MP, and Mr Saber Hossain Chowdhury MP for gracing the event.

He highlighted that Bangladesh and India have the largest contiguous natural mangrove forest in the world—the Sundarbans and it is one of South Asia's most disaster-prone and climate-vulnerable areas. The Sundarbans is affected by various natural hazards like cyclones, storm surges, floods, coastal and river erosion, and rising salinity. The Sundarbans also hosts some of the most vulnerable communities of both the countries.

Major General Pasha then informed the audience that Bangladesh and India worked at the highest level of both governments to conserve the Sundarbans over the decades. The bilateral cooperation in this regard is reflected by the MoUs signed between Bangladesh and India. Bangladesh and India have already signed three MoUs related

to Sundarbans, such as first by conservation of the Sundarbans, secondly, management of tigers, and third is the cooperation in the fields of fisheries. In 2016, a joint working group on conservation of Sundarbans comprising officials from both India and Bangladesh identified joint activities and agreed to work on environmental change and large-scale climate change adaptation interventions in the Sundarbans region. He mentioned Honourable Prime Minister of Bangladesh Sheikh Hasina's visit to India in 2022 where she emphasised on the effective implementation of the 2011 MoU on conservation of Sundarbans and Honourable Indian Prime Minister Shri Narendra Modi who also expressed his determination to continue cooperating on climate change and preserving common heritage like the Sundarbans.

Major General Pasha further informed the audience that Bangladesh and India are wholeheartedly committed to develop a climate-resilient development strategy for the Sundarbans. In this regard, he referred to some of the initiatives taken by the Government of Bangladesh such as the Bangladesh Delta Plan 2100 and the Mujib Climate Prosperity Plan. Likewise, for the Indian part, he referred to India's National Coastal Mission, National Action Plan on Climate Change and the West Bengal State Climate Change Action Plan as well. Focusing on adaptive spatial planning for the Sundarban's ecosystem, and community mitigation co-benefits, he said that adaptive spatial planning will decrease vulnerability, strengthen natural capital, and improve blue carbon sinks.

In that regard, the involvement from the private sector and investments in carbon sequestration and payment for ecosystem services will magnify the effect of the interventions. The investments will benefit broader coastal communities including households headed by women and those without land and result in the scientific management of the entire Sundarbans landscape. Mentioning the discussion of Mr Chowdhury, he added that the full potential of bilateral relations is yet to be explored and that significant opportunities still require exploration to strengthen the bilateral cooperation between Bangladesh and India. As far as the Sundarbans is concerned, Major General Pasha expressed that the workshop would pave the way for sustainable development strategy and management of protective infrastructure and help develop climate-resilient community development with a focus on sustainable livelihood. Additionally, he stated that this workshop will assist both countries to achieve enhanced bilateral cooperation on Sundarbans by proper implementation of the 2011 MoU on the conservation of the Sundarbans.

In conclusion, Major General Pasha expressed gratitude to the World Bank for their support in organising the workshop hosted by VIF and BISS. He extended his thanks to the esteemed guests and the attentive audience for their presence and patient attention.



## SUMMARY BY THE MODERATOR

Dr Arvind Gupta thanked Mr Seck for those very thoughtful remarks and as he underlined the importance of building resilience and cooperation between Bangladesh and India at the strategic level as well as at the institutional level. Mentioning the features of the 2011 MoU and its first article, also article 2 which talk about elevation of poverty, he said that when there is a talk about resilience, the talk about mitigation as well as joint management of resources and so on come to the fore.

He cited that the people inhabiting that region are amongst the poorest, both in Bangladesh and in India. Among them, some communities have less than one dollar per day. Hence, in the case of planning all these great models, the elevation of poverty is very important. The MoU also talks about developing a management plan to address the issues of livelihood since it focuses a lot on common and shared understanding of the impacts of climate change, along with adaptation strategies. It mentions adaptation but it does not really mention mitigation by name, though it talks about conservation and protection efforts, etc. For this reason, handling these problems must have the right priorities.

He emphasised on the reality as the some models developed in glossy research papers have nothing to do with the realities which actually matters on the ground. As every region has its own realities, as a result while these workshops are handled, when there is discussion on these issues, the core issue here will remain how to raise the livelihood for these people whereas of course ecotourism and many others are there. At the end he thanked Mr Seck for his remarks.

Dr Gupta thanked Mr Saber Hussain Chowdhury for very succinctly and forcefully underlining and emphasising the need for aligning two countries' positions on climate change. He mentioned today's world order which itself is undergoing tremendous change and climate change is also getting impacted on that. But one thing which is very clear to everyone, including Bangladesh and India, and that is the nation states, the ecosystem maps directly confront the political maps that have been constructed. So certainly there has to be a mindset change, and that is why the minister was quoting the framework for cooperation.

He expressed that it is possible to maintain distinct political identities and yet collaborate as well as cooperate with each other since all parties involved are facing that existential threat. Therefore, the core mission here is a framework based on first reduction of consumption regarding sustainable development. In case of consumption patterns he mentioned that seven earths is required to fulfil the needs then he asked who occupied that carbon space? He stated that 80 per cent of carbon space is gone and there are only very few countries who have been discussing this quite a lot. He highlighted the rise of inequality that can also be seen in our own countries, the elite people who are consuming, probably their consumption levels are also very similar to what is happening in the west. As a result, there should be some very frank discussions. The telling figure which was mentioned by the minister, is that of all the countries in Africa, in total account for only 4 per cent of the emissions. He urged for India and Bangladesh bilateral cooperation in this regard. But climate change is now becoming a problem which has to be essentially addressed by the developed countries and it is unfortunate that very little evidence that is happening is visible.

The Moderator also pointed out the first 10 years of mitigation and the Kyoto Protocol. He requested to look at who are the countries that had left the Kyoto Protocol. Suggesting to take some positive actions at all levels, he said that as Bangladesh and India are facing very similar challenges there should be cooperation. Then he thanked Mr Saber Hussain Chowdhury for addressing and emphasising those points.

## SESSION 1: Ecosystem-based Approaches and Adaptive Spatial Planning to Meet Climate Change Challenges.

The first working session titled “**Ecosystem-based Approaches and Adaptive Spatial Planning to Meet Climate Change Challenges**” was moderated by **Mr Pankaj Saran**, former Deputy National Security Advisor & India’s High Commissioner to Bangladesh. The panelists for this session were **Mr Md Moyeenuddin Khan**, Deputy Chief Conservator of Forests, Bangladesh Forest Department, GoB; **Dr Shamal Chandra Das**, Chief Engineer (Civil), Bangladesh Water Development Board; and **Mr Jayanta Basu**, Communication Specialist, Secretary EnGIO, Kolkata; The first working session concluded with Special Remarks from **Mr Sanjoy Kundu**, Secretary, Government of West Bengal (GoWB).

### Moderator



**Ambassador Pankaj Saran**  
*Former High Commissioner of India to Bangladesh*

Ambassador Pankaj Saran, Former High Commissioner, Government of India in Bangladesh expressed great pleasure and thanked the organizers for inviting him to moderate such a session that is very close



to his heart. He informed the audience that he was the High Commissioner in Bangladesh when all the previously mentioned MoUs were signed during the visit of the then Indian Prime Minister Dr Manmohan Singh to Bangladesh. He added that he considers it necessary for the decisions made between both of the countries to move forward in terms of the real issues affecting the two countries. He then expressed his regret regarding the fact that the 2011 MoU had not yet been implemented. Additionally, he hopefully expressed that this meeting, which he felt should have happened many years ago, would galvanise action, not merely among the think tanks, but that it could be taken to the next step of forming a direct interface between the two countries at an official level and develop a concrete plan of action in the process.

Mr Saran lived in Bangladesh for more than seven years and had the privilege of travelling to the Sundarbans multiple times. Through his experiences, he understood how sensitive and how critical the Sundarbans are to both Bangladesh and India. He expressed his happiness due to the fact that the VIF had invited the representatives of the government of West Bengal as they were considered as a crucial component of the bigger picture.



## PANELIST 1



### **Mr Md Moyeenuddin Khan**

*Deputy Chief Conservator of Forests,  
Bangladesh Forest Department, GoB*

Mr Md Moyeenuddin Khan respectfully expressed his viewpoint on the multitude of issues currently faced by the Sundarbans. He noted that many discussions revolve around internal, short-term solutions that only serve as temporary measures. However, he emphasised the need to address the bigger picture, which is the impact of climate change on the entire ecosystem of the area.

According to Mr Khan, the scale of the challenges faced by the Sundarbans is so significant that merely allocating financial resources to the region would not be effective. He explained that such efforts may result in small-scale arrangements, such as building dams or resilient structures to protect against frequent floods. However, he stressed that these measures alone would not suffice.

Mr Khan respectfully drew attention to the concerning sea level changes occurring in the Sundarbans, with data indicating an annual increase of 3.9 millimetres. This rate surpasses the previously predicted figure of 3 millimetres. Based on his perspective, any initiatives implemented in the Sundarbans need to focus on a top-down approach. By addressing the larger-scale impacts of climate change, the benefits will eventually permeate down to the grassroots level and positively impact the region's inhabitants.

He additionally brought attention to the managerial activities taking place in the Sundarbans and the efforts of the Bangladesh Forest Department. He noted that the department has been attempting to divert people from their original livelihoods in response to the changing circumstances. Dr Sultan illustrated this point by highlighting the increase in the frequency of cyclones in the region. Previously, there would be one major cyclone every decade, but now there are two to three cyclones occurring within a span of three to four years.

The impact of these changes, according to Mr Khan, can be seen in traditional livelihoods, such as honey collection. Previously, the region would produce around 25 to 30 tonnes of honey per year. However, over the past few years, this figure has significantly declined to only two to three tonnes per year. This decline in honey production demonstrates the negative consequences of the changing environment on the local communities.

Mr Khan referred to this situation as a double-edged sword. While cyclones and resilience-building efforts have led to the loss of traditional livelihoods, the Bangladesh Forest Department is attempting to introduce innovative employment opportunities. Currently, the department is primarily focusing on ecotourism activities as a potential avenue for employment. However, Dr Sultan expressed his concern that if the area continues to be impacted, any ecotourism initiatives may not yield the desired results envisioned by the department.

In summary, Dr Sultan highlighted the challenges faced by the Sundarbans, particularly in terms of livelihoods and the complex relationship between cyclones, resilience-building, and the efforts of the Bangladesh Forest Department to introduce alternative employment opportunities such as ecotourism.

Mr Md Moyeenuddin Khan also has a concept of building in more bunds so that whenever there is a higher tides, the water doesn't get into the areas where the normal people are staying. With the population which has almost doubled from 2 million which is now currently close to 3-4 million. He believes a holistic approach towards these solutions is necessary along with a good amount of money and energy to have the desired results. He said that it looks a little shady because there is yes to it and there is no no to it. But he believes that unless we get into these holistic levels of arrangements, this will not make a proper impact.

Mr Khan further added that with the Farakka Barrage that had also come up in 1974. He mentioned the representatives from the irrigation department. He pointed out the changed pattern of siltation. He compared the siltation of northern banks to southern islands and said that the siltation is much higher than the southern islands.

He mentioned about the happening with more siltation on the northern islands and the southern islands which are less, and added that there is a less amount of silt that is going in, those islands are now eroding.

Afterwards, Mr Khan raised an important concern about the current state of affairs. They highlighted that there seems to be no viable solution or place for people to go in the face of escalating environmental issues. The question was posed: if people are displaced, where would they be relocated?

He expressed gratitude towards God, perhaps indicating a sense of hope or reliance on a higher power. He then emphasised that despite the ongoing challenges, no villages have been relocated thus far. However, he also expressed his fears regarding the fact that if the current rate of environmental degradation continues, the Sundarbans areas will be 90 per cent lost by the year 2040.

In a thought-provoking analogy, the speaker drew attention to the wastefulness of some first-world countries. They described a scenario where air conditioners are running inside a room, expelling hot air outside. The speaker expressed concern for the person standing outside in the heat, emphasising the injustice of the situation. Rather than focusing solely on fixing the location where the heat is being released, the speaker advocated for addressing the source of the heat. They believe that by tackling the root causes, a significant impact can be made on the entire system. The speaker sees the need for long-term solutions rather than merely adapting to the present circumstances.

Mr Khan provided an update on Bangladesh's participation in the management of the Sundarbans since 2009. He mentioned the establishment of co-management bodies, including four co-management committees and a co-management executive committee. Additionally, he highlighted the existence of Common Petrol Group (CPG) members who are involved in the co-management efforts.

In the context of wildlife conservation, he mentioned the presence of special groups dedicated to tiger conservation, such as the Village Tiger Response Team (BTRT), and the Dolphin Conservation Team (DCT). These groups actively contribute to the conservation efforts in the Sundarbans.

Furthermore, he acknowledged the active involvement of the forest department in Sundarbans conservation. He expressed his appreciation for the dedication and engagement of these individuals in protecting the Sundarbans.

In Mr Khan's view, it would be beneficial to consider the rehabilitation or provision of alternative livelihoods for these dedicated groups of people involved in the conservation efforts. By supporting them with sustainable livelihood opportunities, their commitment and contributions to the preservation of the Sundarbans could be further enhanced.





He shared that the forest department has engaged in discussions with the World Bank team in Bangladesh to explore the possibility of training and providing alternative income generation activities for the local people who collect resources from the Sundarbans. This includes community members, community petroleum groups, Village Tiger Response Teams (BTTR), and Dolphin Conservation Teams (DCT). He emphasised that these individuals can contribute significantly to the conservation efforts if they are provided with incentives or payments for their services. The forest department alone cannot reach every house or village surrounding the Sundarbans, and the information provided by these individuals is often crucial for conservation.

According to Mr Khan, engaging local communities and forest-dependent people is essential for effective forest management, wildlife conservation, and the protection of biodiversity. He believes that giving ownership of the forest to the people would instil a sense of responsibility and encourage their active participation in forest management alongside the forest department. Therefore, involving local people is of utmost importance.

Mr Khan then emphasised that local people's engagement is vital for sustainable forest management, Sundarbans' productivity, wildlife conservation, and biodiversity preservation. He noted that people reside outside the Sundarbans but rely on it for collecting forest resources. Additionally, he highlighted the practical issue of climate change and its visible impact on vegetation patterns due to saline water intrusion. He suggested that India and Bangladesh should collaborate and jointly study the climate change issue in the Sundarbans. He proposed the development of Standard Operating Procedures (SOP) through an MOU to facilitate coordinated efforts. The SOP would provide guidelines on when, how, and who should carry out specific actions.

Mr Khan expressed a sense of urgency, as the MOU was signed in 2011 but progress has been limited. He thanked the Vivekananda International Foundation (VIF), the Bangladesh Institute of International and Strategic Studies (BISS), and the World Bank for organising the workshop. He reiterated the importance of developing the MOU and SOP to prioritise actions and ensure proper implementation.

## PANELIST 2



**Dr Shamal Chandra Das**  
*Chief Engineer (Civil), Bangladesh  
Water Development Board*

Continuing with the previous discussion, Dr Das said that Bangladesh is working in the water resource sector and it is one of the most vital and important sectors in Bangladesh that holds the key for shaping the future sustainable development. Referring to Mr Saber Hossain Chowdhury, MP, who said that Bangladesh is in a sandwich condition especially in the case of water resources because of its geographical location, i.e., having Himalaya and the Bay of Bengal on two sides. That is why Bangladesh has both the water tank and water sink for which what happens in the up, also happens in the down and this causes all the consequences that Bangladesh usually faced, especially in the water sector.

In the Sundarbans, though a lot of water exists during the monsoon, paucity of fresh water is very much prevalent during the dry season. Thus, biodiversity of Sundarbans is at grave risk because of this scarcity of fresh water as most of the species do not get drinking water adequately. Another problem is the salinity intrusion as it is pushed up. Thus, it is high time to put mass emphasis on ensuring availability and accessibility of fresh water in Sundarbans. In this regard, Bangladesh is now trying to restore the waterway by dredging so that several river systems in the periphery go through the Sundarbans.

About the cases of polders, he said that there are 139 polders in the Sundarbans area covering around 6,000 kilometres. For him, it is one of the world's largest modern earth embankments which were constructed during the 60s and 70s keeping the tidal issues in the centre. Overtime, the situation emerged and now we are facing tremendous extreme events due to climate change. This causes the need to increase the height and/or strengthen the coastal embankments. But, there is paucity of land to establish the coastal embankment which asks for establishing some coastal buffer zone, in respect of adopting a nature-based solution. These buffer zones can reduce the strong surge effect and the impact of strong surge can be reduced to some extent. In that case, we reduce the height of the embankment.

We also try to develop some innovative solutions, where possible so that we want to dress the rivers. With the dressed earth, we want to create some length for future coastal vegetation. That will also help to reduce the height of the coastal banks. This type of working we are in the process.



## PANELIST 3



### **Mr Jayanta Basu**

*Communication Specialist, Secretary  
EnGIO, Kolkata*

At the beginning of his speech, Mr Jayanta Basu extended his gratitude to the honourable chairperson and expressed his honour in being the first speaker from West Bengal at the conference. He further conveyed his appreciation to all the attendees from West Bengal, emphasising the state's significance as a vital component in the overall framework. Mr Basu referred to the chairperson's earlier remarks, recognising West Bengal's crucial role in conjunction with India and Bangladesh, particularly because the Indian portion of the Sundarbans is situated within its borders. Again he thanked all on behalf of the people of West Bengal and the government of West Bengal.

The speaker, Mr Jayanta Basu, began his address by respectfully referring to Sheikh Hasina as Shekh Hasinaji and acknowledged her visit to India in 2017. He recalled Sheikh Hasina's article in the Hindu, where she stated that the Sundarbans is an ideal example of collaboration between the two countries. Mr Basu regarded Sheikh Hasina's speech as a significant milestone, believing that resources should be allocated to address issues in the Sundarbans, which set it apart from other concerns. He emphasised the importance of not squandering resources and highlighted that the Sundarbans can serve as a remarkable model for collaboration, not only for the region itself but also for broader bilateral cooperation.



Mr Basu then referred to a recent crucial meeting in West Bengal focused on Disaster Risk Reduction (DRR). The meeting involved various stakeholders, including the Disaster Management Ministry, the Sundarban FM Ministry, and experts from institutions such as the IIT at Kharagpur and the Climate Action Network of South Asia. The objective of the meeting was to develop a comprehensive DRR plan specifically for West Bengal.

He underscored that being part of such a significant development was a great continuation for him. Mr Basu mentioned that the Indian section of the Sundarbans alone is home to around 5 million people, surpassing the population of Kolkata, which is unknown to many. He expressed his appreciation to ILA for raising awareness about this fact and opening up the Sundarbans to wider understanding. He noted that the Sundarbans is not only known for its tigers and unique biodiversity but also for its sizable human population. Mr Basu acknowledged that the Sundarbans faces challenges such as high poverty and a high level of disasters, which creates a unique combination of circumstances.

Regarding the G7 meeting, Mr Basu discussed the link between climate change and poverty. He emphasized that the Sundarbans in both India and Bangladesh, despite contributing little to the carbon emissions, suffer the consequences and therefore deserve support from the global community. He advocated for collaboration between the two Sundarbans to garner adequate support and underscored that DRR is a multi-layered issue. He referenced the NLTA report by the World Bank, which indicated that around 24 per cent of the Indian Sundarbans and 36 per cent of the area were critically and moderately affected, respectively.

Mr Basu mentioned that he recently reviewed the Working Group One report of the IPCC AR6, where he found alarming predictions of increased disasters in the Sundarbans by 2070-2080 due to sea level rise and cyclones. He referred to the IMD Atlas, which indicated that the threshold of cyclones is shifting from the Andhra Pradesh-Odisha border to the Odisha-West Bengal border. He questioned the feasibility of relocating people from the Sundarbans and emphasised the need to address this challenge.

The speaker then highlighted the challenges and strategies for disaster risk resilience in the Sundarbans. He stressed the importance of developing a comprehensive DRR plan for West Bengal that considers the socio-economic and socio-political factors preventing mass relocation. While recognizing the significance of mangroves in DRR, Mr Basu noted that they cannot function in isolation and require engineering support. He cited the Islay embankment as an example of the successful integration of ecological and engineering solutions. He called for experts to explore ways to expand such interventions in the Indian Sundarbans.

Mr Basu also emphasised the need to address factors beyond cyclones and mangroves in DRR efforts, such as erosion, salinity, and lack of fresh water. He highlighted the importance of involving local panchayats (village councils) and building their capacity to effectively address these challenges. He emphasised the interdependence of DRR in both human habitats and forests, stating that protecting the Sundarbans is crucial for safeguarding South Bengal and Kolkata. He proposed adopting a comprehensive “Sundarbans plus” policy that extends beyond the physical boundaries of the Sundarbans.

Furthermore, Mr Basu stressed the incorporation of the Sendai framework for substantial DRR in the Sundarbans context. He suggested prioritising the most vulnerable areas to disasters and called for global and local investments in DRR initiatives. He recommended exploring financial mechanisms that incentivize ecosystem services and

benefit local communities. He highlighted the potential of the proposed Biodiversity Act, mangrove-based livelihoods, and effective communication strategies to engage both local and global stakeholders.

Following Mr Basu's presentation, Ms Ajanta Dey focused on the protection of the rights and values of local communities. She emphasised the importance of integrating biodiversity conservation into adaptation plans and advocated for a participatory approach that involves local communities as co-actors in decision-making. Ms Dey highlighted the significance of multi-stakeholder partnerships and planning and design to address biodiversity gaps and enhance the well-being of coastal communities in the Sundarbans.

Overall, Mr Basu and Ms Dey's presentations emphasised the need for a holistic and inclusive approach to DRR in the Sundarbans, considering ecological, engineering, and socio-economic factors, as well as the participation and well-being of local communities



## PANELIST 4



### Sajid Sultan

*Assistant Inspector General, Ministry  
of Environment, Forest, and Climate  
Change*

**Sajid Sultan**, Assistant Inspector General, Ministry of Environment, Forest, and Climate Change, contemplates on the broader implications of climate change on the ecosystem of the Sundarbans area. Recognising the multifaceted challenges posed by climate change, he acknowledges the limitations of merely injecting funds into the region. While initiatives such as constructing dams and bolstering resilient structures offer some relief from the escalating frequency of floods, Mr Sultan emphasises the necessity of addressing the overarching issue of climate change itself.

Examining the escalating sea level rise, which surpasses earlier predictions at 3.9 millimetres annually, Mr Sultan emphasises the urgency of interventions at the source. He posits that interventions must be targeted at the upper echelons of the problem, with benefits cascading down to grassroots levels. Consequently, the management strategies deployed in the region aim to steer local communities away from their traditional livelihoods, necessitated by the increasing frequency of cyclones.

Highlighting the impact of climate-induced shifts on traditional livelihoods, particularly honey collection, Mr Sultan observes a stark decline in yields over recent years. Where once the region boasted annual harvests of 25 to 30 tons of honey, current yields have plummeted to a mere two to three tons annually. This dual challenge

of environmental degradation and economic loss underscores the complex nature of the crisis facing the Sundarbans. In response, efforts are underway to explore alternative avenues of employment for local residents. Mr Sultan underscores the emphasis on innovative solutions, with a primary focus on ecotourism. However, he cautions that the efficacy of such initiatives hinges on the preservation of the region itself. Should environmental degradation persist unchecked, the potential benefits of ecotourism may remain unrealised.

Among the proposed strategies to mitigate the impact of rising tides and cyclones is the construction of bunds to shield inhabited areas from inundation. Yet, these measures must contend with the challenges posed by a burgeoning population, which has nearly doubled from 2 million to 3.5–4 million. As he navigates the complexities of environmental management in the Sundarbans, Mr Sultan remains acutely aware of the need for holistic approaches that address both immediate challenges and the underlying drivers of climate change.

Drawing attention to the impact of the Farakka Barrage, constructed in 1974, Mr Sultan sheds light on the altered siltation patterns that have ensued. This engineering intervention has disrupted the natural flow of sediment, resulting in differential siltation rates between northern and southern islands. Consequently, while northern islands experience heightened siltation, the southern counterparts face erosion, posing a significant threat to the stability of the entire ecosystem. His concern extends to the displacement of local communities, as the erosion jeopardises their livelihoods and safety.

Despite the absence of any immediate relocation efforts, Mr Sultan cautions against complacency, projecting a dire scenario if current trends persist. He warns of a potential loss of up to 90 per cent of the Sundarbans area by the year 2040 if proactive measures are not taken. Such a stark prediction underscores the urgency of implementing sustainable solutions that address not only the visible consequences but also the underlying drivers of environmental degradation.

In an apt analogy, Mr Sultan likens the situation to encountering a room with air conditioning expelling hot air outside, leaving those outside uncomfortable. This imagery serves to highlight the disparity between those insulated from the consequences and those directly impacted. He contends that while developed nations may appear sheltered, the root causes of climate change must be tackled to effect meaningful change. Merely adapting to the current circumstances, he argues, falls short of the transformative action needed to safeguard the Sundarbans and its inhabitants for future generations.



## PANELIST 5



### **Ajanta Dey**

*Joint Secretary and Program Director,  
Nature, Environment, and Wildlife  
Society*

**Ajanta Dey**, Joint Secretary and Program Director, Nature, Environment, and Wildlife Society, delves into the intricacies of safeguarding local communities within the fragile terrain of the Sundarbans. She underscores the significance of resilience, natural resource management, and the establishment of alternative livelihoods as essential pillars for community protection.

In light of the existential threat posed by climate change, Ms Dey echoes Sajid's concern regarding the dwindling honey production, evoking a poignant reflection on the precarious state of biodiversity. Emphasising the interconnectedness between biodiversity and human well-being, she advocates for the integration of robust biodiversity components into adaptation plans. She posits that the sustenance of local communities hinges upon the preservation of biodiversity, which serves as the bedrock of their existence and sustenance.

In crafting adaptation strategies, Ms Dey champions a participatory approach, one that empowers communities to actively engage in decision-making processes. Rather than viewing communities as passive recipients of interventions, she advocates for their inclusion as co-actors in the planning and design of adaptation policies. This, she believes, ensures the preservation of traditional knowledge and fosters a sense of ownership among community members.

Central to Ms Dey's vision is the establishment of multi-stakeholder partnerships, recognising the collective responsibility of society in addressing environmental challenges. She acknowledges the constraints faced by governments and underscores the importance of leveraging resources from diverse sectors through collaborative efforts. By fostering inclusive partnerships, she envisions the realisation of community rights and values, with adaptation policies effectively implemented and sustained.

Ms Dey's advocacy extends beyond rhetoric, as she actively promotes community conservation models that prioritise the involvement of local stakeholders. Through meaningful engagement and shared decision-making, she seeks to bridge the gap between policy design and grassroots realities, ensuring that adaptation efforts are both responsive and inclusive. In her pursuit of resilient and sustainable communities, she champions a holistic approach that acknowledges the interdependence of human well-being and environmental integrity.

She continues to advocate for the crucial role of multi-stakeholder partnerships in achieving the desired objectives. She highlights the diverse array of stakeholders, including civil society organisations, clubs, academia, and research institutions, emphasising the need for collaborative efforts to realise shared goals. She stresses the importance of balancing government outreach with community integration, ensuring that rights and values are effectively communicated and integrated into planning and design processes.

Echoing her earlier sentiments, Ms Dey reiterates the significance of biodiversity as a foundational building block for sustainable development. She underscores the imperative of engaging local communities as co-actors in decision-making processes, rather than mere participants, to foster a sense of ownership and responsibility. By centring the voices and perspectives of those directly affected, she believes adaptation efforts can yield more effective and enduring outcomes.

In addition to biodiversity conservation and community engagement, Ms Dey emphasises the importance of meticulous planning and design. She acknowledges the inherent complexities and uncertainties associated with long-term environmental management, emphasising the need for foresight and adaptability in planning processes. Reflecting on the decline in honey production as a symptom of broader biodiversity loss, Ms Dey underscores the importance of addressing underlying ecological imbalances to ensure the well-being of communities in the Sundarbans.

Through her comprehensive approach, Ms Dey envisions vibrant coastal communities, thriving mangroves, and healthy ecosystems. She acknowledges the interconnectedness of economic, social, and environmental factors, emphasising the need for holistic and inclusive strategies. By prioritising multi-stakeholder partnerships, community engagement, and biodiversity conservation, she seeks to lay the foundation for sustainable development and resilience in the Sundarbans.

## OPEN DISCUSSION

**Md Moyeenuddin Khan**, Deputy Chief Conjurator of Forest, Bangladesh Forest Department introduced himself and thanked the Moderator, the panelists and the distinguished guests. He expressed his happiness to be at the event discussing the conservation of the Sundarbans.

**Dr Shamal Chandra Das**, Chief Engineer (Civil), Bangladesh Water Development Board, introduced himself and began with the fact that the Bangladesh Water Development Board under the Ministry of Water Resource is one of the major organisations working in the water sector and is responsible for overall management and development of water resources.

**Sajid Sultan**, Assistant Inspector General in the Ministry of Environment, Forest, and Climate Change, greeted the attendees and emphasised the direct relevance of his work in the National Tiger Conservation Authority to the efforts undertaken by the ministry in the Sundarbans landscape. He humbly invited any inquiries or discussions related to the topic. Mr Sultan further addressed the mention of the MoU by the moderator, acknowledging a recent meeting held on February 14, 2023, under the Tiger MoU framework. He highlighted the existence of another MoU from 2011 and shared their intention to promptly arrange a meeting with representatives from Bangladesh to address the matter. Expressing enthusiasm, he described this development as excellent and emphasized their commitment to a positive start.

**Sanjoy Kundu**, Secretary of the Irrigation and Water Department in the Government of West Bengal, introduced himself and extended greetings to all the delegates from Bangladesh and India. He outlined the primary focus of their department, which revolves around flood management in the Sundarbans area. Specifically, their responsibilities include safeguarding the embankment, restoring it, and establishing standardised protocols for its maintenance. Mr Kundu emphasised that their efforts in this regard serve as the first line of defense for the inhabitants of the Sundarbans, upon whom their livelihoods and various activities depend. He expressed his gratitude for the opportunity to participate in the seminar and extended his appreciation to the VIF, the Bangladesh Institute of International and Strategic Studies, and the World Bank authorities for their contributions and support..

**Ajanta Dey**, Joint Secretary and Program Director of the Nature, Environment, and Wildlife Society, introduced herself and expressed gratitude to VIF, BIISS, and the World Bank for their support. She has been actively engaged in work related to the Sundarbans for an extensive period. Ajanta Day mentioned her involvement with the Delta Development Plan, starting from 2020, and expressed satisfaction with its progress and the ongoing discussions. She highlighted her focus on implementing an ecosystem-based approach and nature-based solutions. Furthermore, she mentioned her role as a member of the Commission on Ecosystems Management at the IUCN.

During the session, Jayanta Basu, a distinguished communication expert and journalist with extensive experience in the field of environment and climate change, expressed gratitude to the moderator and warmly greeted all the participants. Mr Basu's involvement in global summits spanning from 2009 to 2022 demonstrated his deep commitment to addressing these critical issues.

Currently serving as the Secretary of ENGIO (Environment and Government Integrated Organization), a notable non-profit organisation, Mr Basu highlighted the significant role played by ENGIO in organising the groundbreaking Sundarbans climate change meeting in 2009. This event facilitated a vital dialogue between influential figures, Hassan Mahmood Sahib and Jayaram Ramesh, initiating a broader discourse on the subject.

During his speech, Mr Basu emphasised the collaborative efforts involving the World Bank in their program. He mentioned a significant meeting that took place in the Sundarbans region, involving the Bangladesh parliamentary team, West Bengal, and India. Mr Basu acknowledged the presence of his close friend, Anurag, and expressed appreciation for their continued involvement in this initiative.

Despite a temporary loss of momentum, Mr Basu expressed delight at the resurgence of enthusiasm and progress. He expressed hope that this positive momentum would be sustained and further advanced. Notably, Mr Basu emphasised the creation of the Bangladesh India Sundarbans region comparative initiative (BISRCI), urging all participants to reflect on recent achievements and build upon them for future endeavours. He is of the belief that this ongoing process could strengthen and expand upon the accomplishments and lessons learned from previous initiatives.





## RESPONSE FROM THE SPEAKERS



**Mr Md Moyeenuddin Khan**  
*Deputy Chief Conservator of Forests,  
Bangladesh Forest Department, GoB*

Mr Md Moyeenuddin Khan, expressed gratitude for being given the opportunity to speak once again. He mentioned that the MoU was signed on September 6th, 2011, providing a framework for collaboration between Bangladesh and India. He emphasised that while no additional legal framework may be required in Bangladesh, a protocol or SOP should be established for effective implementation of the MoU. He suggested scheduling a second meeting of the Joint Working Group in November, building upon the first meeting held in 2016. Bangladesh proposed hosting the meeting in Dhaka later that year.

To prioritise issues, Mr Khan suggested starting with two key topics discussed during the 2016 meeting: the study on the health of biodiversity and the study on climate change issues. Additionally, he highlighted the potential for joint eco-tourism initiatives, the need for an evaluation of the entire Sundarbans ecosystem shared by Bangladesh and India, and the importance of ecosystem valuation. Mr Khan mentioned that conducting such a valuation with assistance from organisations like the World Bank and involving conservation partners would raise national and international awareness about the value of the Sundarbans ecosystem. He stressed the significance of properly addressing the dependent communities and forest user groups and suggested introducing a payment for ecosystem services to support those involved in the conservation efforts.

One major concern from Bangladesh's perspective was the intrusion of saline water and its impact on the Sundarbans' vegetation pattern. Mr Khan stated that the Sundari trees, after which the Sundarbans is named, are gradually declining due to the presence of saline water. He advocated for increased freshwater discharge to counter this issue. Furthermore, he emphasised the importance of collaboration between Bangladesh and India, sharing best practices and jointly conducting studies on flora and fauna in the Sundarbans. Capacity building of officials from both countries was also deemed essential.

Following Mr Khan's remarks, other participants shared their suggestions and perspectives. A participant highlighted the need to ensure that local communities receive tangible benefits from the mangrove forests through arrangements that promote mangrove payback. Groundwater availability was identified as a key issue, and expanding initiatives such as rainwater harvesting was proposed. Climate-resilient livelihoods were emphasised as a means to address the challenges faced by the dominant agricultural and fishery sectors in the Sundarbans, which are adversely affected by climate change.

The importance of a landscape approach and recognizing the heterogeneous nature of local communities was emphasised, along with the need to identify and support stewardships that directly benefit these communities. Sharing experiences and data, both formally and informally, was considered crucial for studying the island's damages and finding alternative plantations to mangrove forests.

In concluding the discussion, the panel acknowledged the complementarity between the perspectives shared by Bangladesh, India, and West Bengal. They recognised the potential for synergy and emphasised the importance of collaborative efforts. The participants expressed their appreciation for the engaging and fruitful discussion, and applause was extended to the panel.



## SPECIAL REMARKS



**Mr Sanjoy Kundu**

*Secretary, Government of West Bengal*

In his special remarks, Mr Sanjoy Kundu, expressed concern over the gradual erosion of the Sundarbans. Statistics reveal that over the last 250 years, the area has eroded by 12 kilometres, with a recent rate of 20 meters per year. Mr Kundu emphasised the need to protect the Sundarbans and coordinate the livelihoods of local inhabitants through a community-based system. Structural measures alone would not be sufficient, and an ecosystem-based approach should be considered. The implementation of plans was emphasised to safeguard the Sundarbans, which is not only a physical asset for India and Bangladesh but also plays a crucial role in combating climate change.

Mr Kundu mentioned the assistance of the World Bank in developing a lower data project, which involved discussions and visits by Dutch experts. They have suggested nature-based solutions to protect and regain the foreshore land. Recognising the urgency of the situation, Mr Kundu called for a shift from concept to action. He

then posed two questions to the attendees: Firstly, what policy or rule changes could encourage the adoption of an ecosystem-based approach? Secondly, how can India and Bangladesh effectively work together to address the seriousness of the situation despite existing challenges?

In response, Mr Sajid proposed the concept of joint management areas between the two countries, facilitating knowledge exchange and avoiding duplication of efforts. He mentioned biodiversity monitoring activities and the movement of tigers as potential areas for collaboration. This approach would leverage existing successful practices and promote positive progress.

Dr Das highlighted the importance of trans-border cooperation, particularly regarding water resources, for the protection and conservation of the Sundarbans. He emphasised the need for action, suggesting that the forum consider starting actions immediately. Dr Das also stressed the importance of non-structural solutions, such as nature-based approaches, to complement structural measures. He then concluded by focusing on the necessity of trans-border cooperation and action, along with the encouragement of non-structural solutions like nature-based approaches.





## SESSION 2: Bluer, Greener, and Inclusive Growth in the Sundarbans

In continuation of the preceding sessions, the session on **Bluer, Greener and Inclusive Growth in the Sundarbans** seeks further traction on climate-resilient community development with focus on sustainable livelihood options including green and blue jobs with a strong focus on inclusion of women and landless households. A key aspect covered will be the requisite institutional mechanism towards achieving the benefits as identified in the 2011 Agreements – (i) improved biodiversity management and natural capital; and (ii) sustainable livelihoods, strengthened coastal protection, higher ecosystem services, and blue carbon sequestration.

The second working session titled, “**Bluer, greener, and inclusive growth in the Sundarban**”, was moderated by **Dr ASM Maksud Kamal**, Pro-Vice Chancellor, University of Dhaka. The panellists for this session were **Ms Roshni Sen**, Principal Secretary, Department of Environment, GoWB; **Mr A Z M Sakhawat Hossain**, Managing Director, Social Development Foundation, Bangladesh, **Mr Debal Ray**, PCCF & Chief Wildlife Warden, GoWB; and **Dr Anurag Danda**, Director, Sundarbans Programme, WWF-India & Senior Visiting Fellow, Observer Research Foundation (ORF).

### Moderator



**Dr ASM Maksud Kamal**

*Pro-Vice Chancellor, University of Dhaka*

The conference session, moderated by Dr ASM Maksud Kamal, commenced with the introduction of the panelists. The panel included the Principal Chief Conservator of Forests and Chief Wildlife Warden of the Government

of West Bengal, Ms Roshni Sen, Principal Secretary of the Department of Environment, Government of West Bengal, Dr Anurag Danda, Mr Sakhawat Hussain, the Managing Director of the Social Development Foundation (SDF) of the Government of Bangladesh, and Deval Roy, the Principal Chief Conservator and Chief Wildlife Warden of the Government of West Bengal.

Dr Anurag Danda initiated the discussion by expressing gratitude to the distinguished participants. He mentioned the previous discussion on ecosystem-based processes and adaptive spatial planning to tackle climate change challenges. Dr Danda thanked VIF and BIISS for organising the workshop in collaboration with the World Bank. He highlighted the importance of inclusive growth in the Sundarbans, emphasising the need to address environmental concerns, ecosystem preservation, livelihood options, and gender-related issues. The aim is to achieve a bluer and greener environment for sustainable development.

The panel comprised esteemed members, including Roshni Shea, the Principal Secretary of the Department of Environment, Mr A Z M Sakhawat Hussain, the Managing Director of the Social Development Foundation, Bangladesh, Dr Anurag Danda, Director of the Sundarbans Program at WWF India and Senior Visiting Fellow of the German Research Foundation, and Deval Roy, the Principal Chief Conservator and Chief Wildlife Warden of the Government of West Bengal. Dr Kamal then requested each panelist to introduce themselves, emphasising their respective areas of expertise.

After introducing the distinguished panelists among the participants, Dr Kamal asked them the following questions for addressing in their respective deliberations:

1. Due to lack of economic opportunities and high level of climate vulnerability resulting in outmigration of men, the proportion of women-headed households is higher in Sundarban than the rest of Bangladesh and India as a whole. What specific interventions could help improve the lives and livelihoods of women in the Sundarbans?
2. Nearly 50 percent of all households in Sundarbans do not possess any land for agriculture or aquaculture. What kind of interventions could help create sustainable livelihood options for these landless households?
3. What facilitating role can civil society such as the WWF and Social Development Foundation play in enhancing inclusive growth? Any specific support they need in this regard?
4. Can ecotourism be an economic powerhouse in Sundarbans? If yes, how?
5. Can you list some challenges/barrier to scientifically managing the Sundarbans landscape, resulting in healthier forests, improved terrestrial and marine biodiversity? Any particular cross-border support is needed that would enhance this outcome?
6. Some of the livelihood diversification interventions given impetus by the 2011 MoUs are proposed to be fisheries and aquaculture, climate-smart agriculture, ecotourism including homestays, marine biotechnology, seaweed culture, horticulture, handicrafts, increasing access to remunerative markets for locally produced

products, skill-building, vocational education, and provision of finance to climate-resilient microenterprises. What measures would be taken to scale such interventions?

7. What factors are preventing development and upscaling of sustainable livelihood options in the Sundarbans?
8. What approaches and interventions could enhance the participation of women in economic development and vulnerability reduction?
9. Is there an example of an early win or low-hanging fruit that can be leveraged to enhance livelihoods diversification and quality of natural capital in the Sundarbans?
10. What 1 – 2 steps could be taken and by whom to quicken the pace of these interventions on the Sundarbans?



## PANELIST 1



### **Ms Roshni Sen**

*Principal Secretary, Dept. of Environment, GoWB*

Ms Roshni Sen, Principal Secretary of the Department of Environment, Government of West Bengal, commenced her talk by greeting the audience and acknowledging the challenging post-lunch session. She outlined the responsibilities of her department in the Sundarbans area, which include overall environmental monitoring, conservation of the unique biosphere and biodiversity of the Sundarbans, and ensuring better livelihoods for the local community through cleaner fuels.

Ms Sen emphasised the importance of addressing both forest and non-forest areas, as the use of non-clean fuels not only harms the environment but also pushes people into the forest, endangering their lives. She highlighted the need for green growth and ecosystem-based adaptation practices such as mangrove and aquaculture, clean transportation options like electric vehicles, waste segregation and biogas production, prevention of waste dumping in forest and non-forest areas, and promotion of waste recycling.

Another key aspect discussed was the introduction of rainwater harvesting systems, building community resilience, supporting climate migrants, and estimating carbon sequestration and storage in the Sundarbans. Ms Sen emphasised the significant carbon sequestration potential of mangrove forests, which can lock up as much as 25 per cent of the carbon produced in the state. To achieve these goals, the government takes steps through



various departments, including embankment building, desalination of canals, extensive mangrove plantation, enhancing livelihoods through modern agriculture and organic farming, and empowering women through self-help groups.

Improving school and market infrastructure, developing surface and water networks, and enhancing connectivity through jetties and inland transportation were identified as crucial measures to support the region's agricultural produce. Ms Sen highlighted that these efforts align with the four pillars mentioned in previous sessions: poverty reduction, biodiversity conservation, vulnerability reduction, and institutional changes. Several departments, such as irrigation and waterways, forest, Sundarbans Affairs, and Panchayat and Rural Development, work collectively to address these pillars comprehensively.

Responding to questions about low-hanging fruits, Ms Sen discussed the challenges posed by increasing salinity in the Sundarbans, affecting agriculture. She mentioned a World Bank-funded project called the West Bengal Accelerated Development of Inland Waterways, which focuses on canal desalination. By excavating channels and using them as rainwater harvesting structures, salinity can be reduced and livelihoods improved. She provided a case study where a self-help group of women was trained in campy rearing and generated a significant income of 8.8 million through the process.

Ms Sen emphasised the importance of proper training for women's self-help groups in various activities like fish farming in desalted canals. She also mentioned encouraging livelihood options that require less land, such as mushroom cultivation and goat rearing. However, she stressed the need for a holistic view, educating the local community about the benefits of preserving mangroves instead of engaging in destructive practices like cutting them down for rice cultivation. Training programs are being conducted in horticulture, agriculture, fish farming, and animal husbandry to promote sustainable livelihoods.

Ms Sen concluded her talk by expressing her intention to further discuss these topics and invited a representative from Bangladesh's SDF to share their experiences and best practices related to improving the lives and livelihoods of the local community in the Sundarbans region.

## PANELIST 2



**Mr A Z M Sakhawat Hossain**  
*Managing Director, Social Development  
Foundation, Bangladesh*

Mr A Z M Sakhawat Hossain, Managing Director of the Social Development Foundation in Bangladesh, discussed the organization's efforts to improve livelihoods in the country. Established in 2000 under the Ministry of Finance, the foundation aimed to assist the government in achieving the Millennium Development Goals. After successfully aligning their activities with five out of eight goals, they continued their work towards poverty alleviation when the Sustainable Development Goals (SDGs) were introduced in 2015, aligning with 11 out of 17 goals.

Currently, the foundation is implementing three programs focused on reducing poverty in Bangladesh. As the country aims to become a developing country by 2026, their goal is to increase the income level of the population, particularly those living below the poverty line. With a current per capita income of US \$2687, they believe that reaching US \$28,000 will help them attain developing country status.

To improve livelihoods in Bangladesh, the foundation adopts an integrated and community-driven development approach. They emphasise women empowerment as a crucial aspect of their work. Recognising the displacement of male population in the Sundarbans area, the foundation has found an advantage in involving women from these households. Currently, around 1 million beneficiaries, with 97 per cent of them being women, are directly implementing programs at the field level.

The foundation focuses on providing both financial and non-financial services to enable income-generating activities. Non-financial services include capacity building, monitoring support, follow-up, and technical assistance. They offer

various trainings to women beneficiaries and have identified 35 income-generating activities tailored to different geographic areas.

In the Sundarbans area, where the economic condition of the local population can be improved, the foundation aims to address poverty reduction. Their programmes provide training and funds to implement income-generating activities. Initially, individuals operate these activities for one to two years, but to increase income levels further, the foundation promotes entrepreneurship by offering entrepreneurial training and additional funding.

Water scarcity and salinity are significant challenges in coastal areas, including the Sundarbans. The foundation conducted surveys and collaborated with experts from the World Bank to find solutions. They determined that water distillation and desalination plants are necessary to ensure the supply of pure drinking water. While the Department of Public Health and Engineering is responsible for providing clean water nationwide, support in some areas, especially coastal regions, has been insufficient. To address this issue, the foundation plans to establish water distillation and desalination plants in coastal areas, thereby ensuring access to safe drinking water.

He then highlighted the issue of saline water, which rendered it undrinkable for the local population. Acknowledging the government's limitations in resolving all the problems, he sought assistance from the World Bank. Despite the initial absence of funds, the World Bank dispatched experts to survey the situation. The survey revealed the need for water distillation and desalination plants, specifically desalination plants for coastal areas and distillation plants for regions with high levels of arsenic and manganese. This infrastructure development work aimed to address the water quality issues.

The project also recognised the need for infrastructure development in rural areas, including the construction of culverts, wooden bridges, and toilets. By incorporating these measures, the project aimed to enhance the overall living conditions of the rural population.

Unemployment, particularly among the youth aged 18 to 35, emerged as another significant concern. To address this issue, the project collaborated with reputable training institutions to provide comprehensive training programs. These programs lasted for a minimum of 360 hours, adhering to international standards. Impressively, the project successfully trained 86,000 youths in Bangladesh, with approximately 90 per cent of them finding employment.

Emphasising the importance of employment following training, the project established written agreements with training institutions. These agreements stipulated that at least 85 per cent of successful trainees must be employed by the institutions. By ensuring a strong link between training and employment, the project maximized the effectiveness of the training investments.

In addition to addressing unemployment, the project recognized the pressing health and nutrition challenges faced by rural communities. Special support was provided to pregnant and lactating mothers, as well as children under five. Medical doctors were deployed at the district, division, and head office levels to provide medical care. To overcome financial barriers faced by pregnant women, funds were allocated to cover transportation costs and the purchase of medicines. Furthermore, medical camps were organized in villages where patients received free treatment from project doctors. The integration of various components such as training, employment opportunities, infrastructure development, and health and nutrition support constituted a comprehensive package. Notably, the program aimed to empower women beneficiaries, acknowledging that women-headed families could thrive with proper training and income generation opportunities. He expressed gratitude for the opportunity to contribute to the well-being of these families. The project's holistic approach aimed to address the multifaceted challenges faced by rural communities. By implementing comprehensive interventions, including training, employment, infrastructure development, and health and nutrition support, the project sought to create a positive and sustainable impact. Mr Hossain envisioned the programme's potential benefits when implemented in coastal areas or the Sundarbans region.

## PANELIST 3



**Mr Debal Ray**  
*PCCF & Chief Wildlife Warden*

Acknowledging the previous speaker's remarks, Mr Debal Ray, the PCCF & Chief Wildlife Warden, introduced himself as a forester responsible for conserving specific forest and wildlife areas, including the Sundarbans, which falls under the protected area network. He highlighted the comprehensive set of rules and regulations, such as the Indian Wildlife Protection Act, that govern the protection of this region.

Drawing attention to a Bengali saying, he stressed the importance of acknowledging the imminent challenges faced by the Sundarbans. Explaining the current state of the 104 islands in the Indian part of the Sundarbans, Mr Ray highlighted that while forested islands benefit from sediment deposition and island accretion, they still face significant inundation during high tide levels and extreme storms, leaving wildlife with limited shelter options. He proposed a futuristic management approach, suggesting an urgent need for a Light Detection and Ranging (LIDAR) survey of the entire Sundarbans to identify islands' elevations compared to mean sea level. This survey would aid in determining which islands could be saved in the long term, those that require immediate attention, and islands where relocation of people and wildlife may be necessary for their safety.

Continuing his address, Mr Ray emphasised an essential aspect of aquatic systems—biodiversity follows a U-shaped curve in relation to salinity. He noted that the Sundarbans, located in the lowest part of the U-shape, exhibits lower biodiversity compared to other coastal areas. However, he acknowledged the exceptional richness

of mangroves in the Sundarbans, relative to regions like Brazil and Indonesia. He emphasized the responsibility to protect this unique biodiversity, highlighting the challenge of maintaining species-specific ecosystem services within a limited number of species. He stressed the need to identify the key species assemblages associated with specific ecosystem services and make efforts to safeguard their integrity.

Mr Ray then presented the economic value of ecosystem services in the Indian part of the Sundarbans, showcasing the stock value and flow value. He pointed out the distribution of benefits, where local people receive only 16 per cent of the value, while national and global beneficiaries gain 39 per cent and 44 per cent, respectively. Highlighting the discrepancy, he raised the issue of compensating local communities or granting them greater access to the forest, considering their pivotal role in conserving the ecosystem.

Considering the complexity of the problem at hand—an ecosystem facing geological instability, biological vulnerability, and inhabited by the world’s poorest population supplying significant ecosystem services—Mr Ray suggested a compartmentalised approach. He proposed dividing the Sundarbans into different sectors based on threat perception, resource base, proximity to the mainland, and connectivity, in order to devise targeted programs and solutions.

In his insightful address, Mr Ray conveyed the urgency and complexity of the challenges faced by the Sundarbans, emphasising the need for comprehensive and tailored management strategies to preserve this ecologically significant region.





## PANELIST 4



### **Dr Anurag Danda**

*Director, Sundarbans Programme, WWF-India Senior Visiting Fellow, Observer Research Foundation*

Dr Anurag Danda, the Director of the Sundarbans Programme at WWF-India and a Senior Visiting Fellow at the Observer Research Foundation, expresses gratitude for the opportunity to speak. He begins by highlighting his extensive experience in the Sundarbans since 1997, providing deep insights into the region.

Dr Danda explains that WWF's work in the Sundarbans revolves around two main areas. Firstly, they collaborate with the forest directorate under the leadership of the Chief Wildlife Ordinance to aid in conservation efforts. While WWF does not possess legal authority, they contribute by bringing innovation to conservation initiatives, particularly focused on tiger and dolphin conservation.

Secondly, WWF-India focuses on climate action, engaging in both adaptation and mitigation activities. Their primary emphasis lies in adaptation with mitigation co-benefits. Dr Danda acknowledges the increasing climate risks faced by the Sundarbans, with repeated mentions of shrinking islands, erosion, and subsidence. He highlights the work being done in collaboration with the irrigation department to trap silt, which plays a crucial role in the delta's health. Due to human interventions and natural processes, the amount of silt reaching the Indian part of the Sundarbans has declined, resulting in a degrading delta. The aim of this collaboration is to trap and retain silt while encouraging mangrove regeneration to maintain the balance necessary for the Sundarbans' survival. Dr Danda cites the example of Halliday Island, which is on the verge of disappearance, and mentions ongoing efforts to explore the effectiveness of these methods on that particular island.

In addition to ecosystem-focused adaptation, WWF-India also works with the communities residing in the Sundarbans. Dr Danda hesitates to call it adaptation, as the focus is primarily on buying time rather than enabling communities to continue their developmental trajectory despite climate risks. They engage in initiatives such as promoting salt-tolerant paddy varieties, developing efficient and water-saving irrigation systems, and assisting farmers and fishers in achieving production during the dry winter months. This period is relatively calm and stable compared to the rest of the year, which is marked by heavy rains, pre-monsoon disturbances, and post-monsoon cyclones.

Furthermore, WWF-India addresses energy systems in the Sundarbans. Dr Danda acknowledges the Secretary's mention of transitioning transportation systems to electric vehicles and informs that they have already begun experimenting with an electric boat in Bashyam Nagar, Patal Pratima. This not only reduces environmental impact but also helps prevent oil spillage, which has been a subject of concern and a matter being addressed by the National Green Tribunal (NGT). As they gather more data and progress with the project, they intend to provide information on its feasibility in terms of operations and finances.

Dr Danda concludes by presenting the range of activities carried out by WWF-India in the Sundarbans, encompassing conservation collaboration with the forest directorate, climate adaptation and mitigation efforts, community engagement, and advancements in energy systems.



## OPEN DISCUSSION



An audience member acknowledges the issue of silt and its significant impact on the region, particularly on canals and rivers. They have thus expressed curiosity about potential solutions to address this problem.

Mr Prabhat K Mishra, Principal Secretary, Irrigation & Waterways, Govt. of West Bengal, responded to the audience member's question by elaborating on the siltation issue from the perspective of irrigation embankments. He acknowledged Mr Ray's concerns regarding the threat to the islands, but shifted the focus to the importance of siltation at the toe of embankments.

Explaining the significance of siltation at the embankment toe, Mr Mishra emphasised its role in protecting the embankment and enhancing its stability. He highlighted the severe erosion faced by embankments along the seafront during cyclones. Initially, bamboo porcupines were used to encourage siltation at the embankment toes. However, with the intensification of cyclones, it became evident that bamboo porcupines were insufficient to meet the requirement of artificial siltation.

In response to this challenge, Mr Mishra described the use of concrete tetrapods, which are heavy concrete cages weighing approximately 2.4 to 3 tons each. These tetrapods are placed in front of embankments and have proven to be highly effective in promoting siltation. He cited the example of Sagar Island, a well-known holy place, where severe erosion issues were partially mitigated by employing tetrapods in front of the embankments.

Another audience member raised a question related to the desalination issue adopted by the government of Bangladesh. The individual expressed concern about the intrusion of saline water into deep wells during cyclones, leading to a scarcity of drinking water for the people. The audience member also mentioned that desalination plants are known to be highly capital-intensive and questioned how Bangladesh is addressing this issue and whether it is a viable long-term solution.

The audience member then sought clarification on the cost implications associated with desalination and requested a response from the panel.

Mr Saber Hossain Chowdhury, Chairman of the Parliamentary Standing Committee on Environment, Forest & Climate Change, provided his response regarding the cost implications and benefits of desalination plants in Bangladesh. He mentioned that the installation of these plants began in 2015-2017 and the cost was around BDT 0.6-0.7 million during that time. However, due to inflation and other factors, the current cost is estimated to be around 0.8-0.9 million BDT. Each plant can serve up to 400 families and has been functioning well for the past 6-7 years. The companies responsible for installing the plants also provide periodic maintenance and servicing. The technology used is not complicated, and specialised companies handle its implementation. Mr Chowdhury expressed his willingness to share more details and connect with companies working in India if required. He emphasised the effectiveness and cost efficiency of the desalination technology, which has proven beneficial for drinking and cooking water needs in coastal and Sundarbans areas of Bangladesh.

The audience member thanked Mr Debal Ray for his presentation and acknowledged the importance of understanding the diverse needs of different areas in the Sundarbans. They expressed curiosity about the progress made in customising responses based on these variations, particularly in comparison to the perception of the Sundarbans as a homogeneous area on the Bangladesh side. The audience member, who identified themselves as a forester with a focus on natural resource conservation, highlighted the threats of climate change-induced sea-level rise and salinization. They mentioned salinization maps and projections for 2050, as well as the intention to generate LIDAR images for overlaying inundation maps. This information would aid in delineating different treatment approaches for different areas. The audience member also raised the question of socioeconomic segregation and suggested that it could be a collaborative consideration between Bangladesh and India. They mentioned a World Bank-aided project where the intervention was seen as relevant for both West Bengal and Bangladesh. Concluding their remarks, the audience members expressed their eagerness to learn more about this topic.

Ms Sutapa Chowdhury, Development Economist, working at Foreign, Commonwealth and Development Office (FCDO), New Delhi, introduced herself as a representative of the British government, specifically the Foreign, Commonwealth and Development Office. She expressed her privilege in visiting the Sundarbans last year and witnessing the uniqueness of the ecosystem. She noted the similarity of challenges faced by both India and Bangladesh, given that they share the same landmass and an artificial border. However, she observed a lack of movement in terms of knowledge transfer and cooperation across the short distance between the two sides. Despite experiencing similar challenges, the solutions and policy responses appeared to be separate and distinct. Ms Chowdhury raised the question of what is impeding collaboration and highlighted the areas where



the UK government, in partnership with the World Bank and others, could support cooperation. Additionally, she mentioned the difficulties faced in getting high-value goods, such as those produced through shrimp farming, to the market and the unequal distribution of benefits to the local population. She inquired about scaling up income-generating activities for marginalised women working long hours in challenging conditions and expressed concern about the prospects for the youth in such a fragile ecosystem. Ms Chowdhury concluded her remarks with a query about retaining young males in the Sundarbans and strategies to encourage their participation and engagement.

A panel member highlighted the challenges in knowledge transfer and frequent collaboration, attributing it to India's federal structure. Due to the hierarchical system, direct communication between officials across different levels is limited, necessitating a more time-consuming process. The need for transboundary cooperation has been recognized for over a decade, with efforts made to establish non-governmental platforms. However, these initiatives often lose momentum or fizzle out due to the lack of an institutional mechanism. The speaker emphasized the importance of creating a cooperative mechanism at the national level between the two countries to facilitate collaboration. The discussion also touched on the need for market improvement and better income generation for the local population. The development of local infrastructure, such as small jetties and bridges, was mentioned, with an emphasis on eco-friendly tourism that ensures minimal harm to the Sundarbans' ecosystem. The marketing platforms currently used, such as Biswa Bangla and Sundarini, need further development to benefit the local population. It was acknowledged that monitoring the impact of tourism on the local community is essential, and involving the local population in tourism activities, such as eco-tourism and mangrove tourism, is crucial. The speaker highlighted the importance of coastal zone regulations in the Sundarbans area, which are aimed at preserving and protecting the coastal ecosystem.

One of the distinguished panel members, the Chairman of the West Bengal Coastal Zone Regulation Authority, provided insights into the regulatory framework in place for coastal development. The district magistrate serves as the chairman, and any development near the coast requires CRZ (Coastal Regulation Zone) clearance. The Sundarbans has been categorised into Island Sundarbans and Mainland Sundarbans, with specific regulations for each. Within 50 meters from the high tide line in the Mainland Sundarbans and 100 meters in the Island Sundarbans, no activities are allowed. Instances of activities violating CRZ regulations, including government structures, were mentioned, with the importance of NGTs (National Green Tribunals) playing a positive role in protecting coastal areas and preventing harm to the local population. The authority is working on carrying out activities and precautions to address concerns raised. The need to formalise and structure the process of compensating ecosystem services and raising awareness at the global level was emphasised. Sea level rise in the Sundarbans was discussed, with indications that the rate had settled down but required continuous monitoring and data tracking for devising effective strategies. The vulnerability of certain areas within the Sundarbans, particularly in the western and central sides, was highlighted, and discussions on addressing vulnerability at both government and non-government levels were taking place.

Moreover, the issue of ecosystem services not reaching the local communities was brought up, emphasising the need to formalise and structure the process to ensure that the benefits are appropriately distributed. It was suggested that a demand be made through the appropriate channels to reach the global community.



Regarding sea level rise, it was mentioned that recent data from experts at Jadavpur University indicated that the rate of sea level rise in the Sundarbans had settled down compared to previous years. However, further information was sought from Anurag, who might provide additional insights on the matter. The importance of tracking ground-level changes and having accurate data for formulating effective strategies was stressed.

He lastly raised the issue of vulnerability in the Sundarbans. Data showed that out of the 19 blocks in the Sundarbans, approximately nine were identified as extremely vulnerable. Similarly, among the around 1,000 villages in the region, about 250 were considered extremely vulnerable. This vulnerability was predominantly observed in the western and central sides of the Indian Sundarbans. The discussion highlighted the ongoing consideration of addressing vulnerability, both at the government and non-government levels, as discussed in recent disaster meetings.

These points were shared with the audience to provide a comprehensive understanding of the current regulatory framework, sea level rise dynamics, and vulnerability assessment in the Sundarbans region.

During the seminar, an audience member expressed his satisfaction with the knowledge gained regarding the ecosystem services offered by the Sundarbans, highlighting that calculations were being conducted in the Indian region but not in Bangladesh. He mentioned that efforts were being made by Bangladesh statistics to implement environmental ecosystem accounting, specifically focusing on ecosystem accounting within the entire forest. As a participant in a related training program, he posed his first question, inquiring about the implementation of ecosystem accounting methodology under the ACEA (Accounting for Coastal Ecosystems and Assets) in Bangladesh.

Transitioning to his second question, he emphasised the existence of intangible ecosystem services, such as aesthetic value, productivity gains, and even mental well-being. He suggested that these services might also encompass spiritual aspects. Recognizing this, he believed there was a need for the dissemination of such information. Consequently, he sought the opinion of the conference participants regarding the necessity of sharing this valuable information with others.

In response to the audience member's inquiry, a panel member acknowledged the existence of various non-tangible ecosystem services provided by the Sundarbans. He informed the audience that the document quantifying the valuation of ecosystem services in the Sundarbans is openly available on the website of the National Tiger Conservation Authority (NTCA) of India. The valuation work was led by Dr Modhu Verma from the Indian Institute of Forest Management. The panel member encouraged the audience member to directly contact Dr. Verma for more details on the methodology employed.

He further explained that the methodology broadly followed the guidelines set by the Economics of Ecosystems and Biodiversity (EEB), initiated by Pavan Sukhdev and others. As for the spiritual services and other intangible aspects, he confirmed that they are indeed considered part of the ecosystem services. For instance, when visiting the Baksa Tiger Reserve, the tranquillity experienced can have spiritual or mental benefits, which should be assigned a monetary value.

The panel member emphasised the significant economic value of the Sundarbans' ecosystem services. Even excluding the intangible aspects, the valuation runs into hundreds of billions of dollars. He mentioned that prior to Dr Modhu Verma's work, the Indian Statistical Institute quantified the value of storm barricading provided by the Sundarbans for the protection of Kolkata and its surrounding areas, which amounted to hundreds of thousands of dollars for a small stretch alone.

Concluding his response, the panel member indicated that the valuation of ecosystem services is substantial and referred to the audience member's familiarity with the relevant literature. He then welcomed the last question from the audience.

Akhilesh Pare, representing the Water Resources Department of West Bengal and serving as the World Bank project implementer, addressed the audience. He acknowledged the degradation of the Sundarbans, as mentioned by a previous speaker. However, he emphasised the importance of initiating conservation efforts and fostering community involvement.

Over the past 5-6 years, with the support of the World Bank, efforts have been made to integrate the local community into conservation initiatives. This involved establishing the Water Users Association as a community institution and ensuring collaboration among various departments. Akhilesh Pare expressed confidence that this approach, along with the participation of women and youth, would yield positive changes. He highlighted the returning presence of women and youth in the area as a promising sign, indicating that the situation could improve and contribute to the conservation efforts.

Mr Joshi expressed his question and comment regarding the development model for the Sundarbans. He questioned the need to retain youth in the area, considering the bio-centric or biodiversity-based conservation-oriented model. He acknowledged that eventually, people might have to move out of the Sundarbans, especially in the Indian part, due to climate change. However, until that happens, he raised the question of whether the approach should focus on providing minimal necessary development support or investing in developing the Sundarbans as a resilient economic hub.

Dr Anurag was asked about the subsidence of the Sundarbans coastal region. Although Mr Joshi mentioned not having conducted such a study, he noted the availability of studies done by universities in Kolkata. He also mentioned the construction of embankments by the Water Development Board of Bangladesh, supported by the World Bank, to address subsidence.

Mr Joshi further inquired about potential interventions that include the inclusiveness of at-risk communities. The response emphasised the need for a multi-pronged approach considering factors such as economic background, skills, and market conditions.

Regarding mapping timber and non-timber resources, Mr Deval Ray mentioned the Forest Survey of India's satellite mapping system that classifies vegetation communities and identifies changes over time. Additionally, the Science and Technology Council possesses high-resolution satellite images for detailed mapping.

As the session concluded, the moderator asked about the challenges of implementing inclusive growth in the Sundarbans region of India, considering the strong rules, regulations, laws, and bylaws in place.



## RESPONSE FROM THE PANELISTS



Mr Debal Ray, responded to the audience member's question by providing insights into the issue of silt in the Sundarbans. He began by describing the historical context of the islands, explaining that during British rule, walls were constructed by the irrigation department to facilitate habitation. While these walls prevented inward flow of water and allowed for settlement, they also hindered silt deposition on the islands. As a result, the island level remained unchanged while the riverbeds gradually rose due to silt deposition, posing a challenge.

Addressing the breach of walls during super cyclones like Aila or Amphan, Mr Ray acknowledged the issues faced by inhabited villages when sea water enters. He mentioned that the irrigation department effectively deals with these problems through the construction of better walls and repairs.

Moving on to the non-inhabited forest islands, Mr Ray emphasised their significance as recipients of silt deposition. Given the rising sea levels and ongoing silt deposition, the balance between island elevation and sea level rise becomes crucial. To study this balance, collaborative efforts with Calcutta University have been initiated, including the installation of gauges to measure the silt deposition rate on various islands. The aim is to determine if the upward rise of the islands matches or exceeds the rate of sea level rise. In cases where it falls short, alternative measures such as silt traps may be necessary to accelerate the siltation rate and ensure the islands' long-term safety.

Highlighting the alarming rate of sea level rise, which doubled between 2006 and 2015 from 1.4 mm to 4.1 mm per year, Mr Ray emphasised the threat it poses to both human beings and biodiversity. While humans suffer from the lack of silt benefits, animals fare relatively better as silt deposition occurs in their habitats. Concluding his response, Mr Ray sought input from representatives of the irrigation and waterways departments, inviting them to share their approaches in addressing the issue.



Ms Roshni Sen, Principal Secretary of the Department of Environment, GoWB, acknowledged the challenges of balancing development and environmental conservation. However, she emphasised the need for sustained campaigning, publicity, and efforts to drive social and behavioural change. She highlighted that people, particularly local self-government bodies, are gradually becoming more aware of the importance of protecting the coast and islands.

Ms Sen mentioned several best practices that have been implemented. Water detention structures, created with the assistance of the World Bank, have successfully retained fresh water and facilitated pisciculture. Resistant paddy varieties that can withstand saltwater have been developed and are thriving. Seed banks, established with the support of self-help groups, have preserved and marketed traditional local varieties of crops that were at risk of being lost.

She also mentioned the electrification of Sagar Island, which became the first island in the country to have solar energy connected to the grid. The

successful implementation of solar energy in Sagar can serve as a model for others. Mangrove restoration efforts have been intensified, resulting in increased mangrove plantation and some signs of recovery according to satellite data.

Furthermore, Ms Sen highlighted the focus on eco-tourism as part of the overall development strategy. By promoting eco-tourism alongside traditional tourism, they aim to achieve holistic development in the region. These initiatives reflect the commitment to finding sustainable solutions and balancing development with environmental conservation.





## SESSION 3: Deepening transboundary cooperation on the Sundarban and way forward

### Moderator



#### **Ms Cecile Fruman**

*Director, Regional Integration and Engagement, South Asia, World Bank*

As the moderator for the third session, Ms Cecile Fruman, Director of Regional Integration and Engagement for South Asia at the World Bank, acknowledged the productive day that had transpired. She emphasised the importance of keeping the upcoming panel discussion lively and interactive, taking into consideration the engaged audience. The focus of this session was identified as the recurring theme of transboundary cooperation between India and Bangladesh regarding the shared landscape and common agenda of the Sundarbans.

Ms Fruman introduced the distinguished panelists, starting with Mr Roque Bull Hawk, the Director General for South Asia at the Ministry of Foreign Affairs in Bangladesh. She mentioned her previous meeting with him and their discussions on transboundary issues, including the Sundarbans. Ms Paulomi Tripathi, Director in the Ministry of External Affairs of the Government of India, represented the Indian perspective. Dr Smruti Patanaik,

a Research Fellow with the Manohar Parikar Institute for Defense Studies and Analysis, brought her expertise to the conversation. Mr Mahfuz Kabir, the Research Director at BIIS, was also introduced, acknowledging the familiarity of the acronym BIIS. Additionally, Ambassador Vini Sikri, the former High Commissioner of India in Bangladesh, was recognised as a guest speaker due to her continued interest in South Asia and involvement with the South Asia Women's Network.

With this esteemed panel in place, Ms Fruman initiated the conversation by highlighting her dual role in the discussion—as the Director for Regional Integration at the World Bank and her personal connection to the Sundarbans. She shared her eye-opening experience of visiting the region with her colleagues, expressing how it deeply touched her and left a lasting impression. Ms Fruman noted the efforts made over the years, including the 2011 MoU, parliamentary visits, media engagement, and joint commissions and working groups. However, she acknowledged that despite some progress, greater effects had yet to be realised. Hence, the central question posed to the panel was how to achieve greater transboundary cooperation and implement the 2011 MoU. Ms Fruman directed the question to Mr A T M Rokebul Haque, inviting his insights on the matter.



## PANELIST 1



### **Mr A T M Rokebul Haque**

*Director General (South Asia), Ministry of Foreign Affairs, GoB*

Mr A T M Rokebul Haque, expressed his gratitude to the organisers for giving him the opportunity to speak at the session. Acknowledging the directness of the question posed, he highlighted the importance of government collaboration, particularly in the context of protecting and managing the Sundarbans. He emphasised the excellent relations between India and Bangladesh, noting their history of resolving bilateral issues and their current partnership in addressing regional and global challenges. Mr Haque stressed the significance of their shared history, sacrifices, and geographical proximity, citing examples such as the common national anthem and the production of world leaders like Mahatma Gandhi and Bangabandhu Sheikh Mujibur Rahman. He acknowledged that while the 2011 MoU had high expectations, the effective outcomes had been lacking. However, he expressed optimism, stating that it was better late than never to address these issues. He appreciated the World Bank for bringing together various stakeholders, including experts, NGOs, and government officials, and considered it a positive beginning that should be sustained.

## PANELIST 2



### **Ms Paulomi Tripathi**

*Director, Ministry of External Affairs,  
Government of India*

Ms Tripathi began by expressing her gratitude and acknowledging the collaboration between VIF, BIIS, and the World Bank in organising the meeting. She also appreciated the participation of individuals from Bangladesh and emphasised the importance of engaging with various stakeholders to gather perspectives. Referring to the political momentum in the relationship between India and Bangladesh, she highlighted the joint statement from the leaders, which emphasised the effective implementation of the MoU on the conservation of Sundarbans. Ms Tripathi mentioned the vision and mandate set by the leadership and expressed the intention to hold the JWG as soon as possible to take concrete steps supported by experts. She emphasised the comprehensive partnership between India and Bangladesh, rooted in their shared history, culture, language, geography, and the significance of Sundarbans as a cultural icon. Ms Tripathi suggested initiating concrete projects, particularly community-based programs, to benefit the local communities in the Sundarbans region. She discussed the broad scope of the MoU, which covers various areas such as species endangerment, ecotourism, livelihood generation, and poverty reduction, and called for experts from both countries to propose specific activities under the program. Ms Tripathi expressed confidence in the capability and willingness of both sides to effectively address these areas in the future.

Ms Tripathi continued by emphasising the existing framework provided by the MoU and its enabling nature. She highlighted the diverse areas that can be covered under the MoU, including the strategy for species endangerment and extinction, long-term plans for ecotourism, and measures for livelihood generation and poverty reduction. She expressed the belief that both countries have the capacity and willingness to explore these areas effectively in the coming years. By focusing on concrete activities and leveraging the existing partnership and framework, Ms Tripathi conveyed the importance of initiating actions that benefit the local communities and contribute to the conservation and sustainable development of the Sundarbans. She emphasised the political will, shared cultural significance, and the readiness to collaborate between India and Bangladesh to address the challenges and opportunities presented by the Sundarbans. Her remarks underscored the importance of translating intentions into tangible actions and leveraging the existing partnerships, frameworks, and expertise to achieve the goals outlined in the MoU.





## PANELIST 3



**Dr Mahfuz Kabir**  
*Research Director, BIIS*

Dr Mahfuz Kabir expressed his gratitude to Cecile and acknowledged the existence of three known memorandums of understanding (MoUs) related to the conservation of the Sundarbans. While he recognised the importance of issues such as tiger management and fisheries cooperation, he emphasised the need for regular joint working groups and multi-stakeholder constellations to address them effectively. Despite these challenges, Dr Kabir highlighted the political commitment and strong interest of Bangladesh's Ministry of Foreign Affairs in implementing the MoUs and promoting cooperation between the two countries. He discussed various developments, including Bangladesh's aspiration to become a regional connectivity hub, the Coastal Shipping Agreement between Bangladesh and India, and the importance of considering the Vision 2041 of Bangladesh, which aims to achieve developed country status by 2041.

Dr Kabir also raised concerns about the potential negative impacts of vehicle movement and light pollution on the Sundarbans ecosystem, highlighting the need for further research and consideration of these issues. He mentioned the presence of special economic zones in the Sundarbans area and their implications, as well as the upcoming coastal shipping agreement within BIMSTEC and its potential environmental effects. Dr Kabir emphasised the importance of track-two level cooperation among think tanks, research organisations, and universities, including information sharing, data exchange, and the establishment of a new institution or framework for protecting the Sundarbans in line with the 2011 MoU. He concluded by noting that while progress is underway, there is a need to accelerate the pace of actions. Dr Kabir provided insights into the existing MoUs, highlighted the challenges and opportunities in the conservation of the Sundarbans, and emphasised the importance of collaboration, data sharing, and the need for further efforts to protect this unique ecosystem.

## PANELIST 4



**Dr Smruti S Pattanaik**  
*Research Fellow, MP-IDSA, India*

Dr Pattanaik acknowledged the substantial effort Sanjay has invested over the course of more than a year to establish this particular program. She raised two points for consideration. Firstly, she noted that the 2011 MoU is one of the most comprehensive agreements. However, despite the existence of such a comprehensive MoU and the approaching 12-year mark since its inception, the meeting has only taken place once, in 2016. Although there may be a meeting around November, there is no concrete information available at present. Dr. Pattanaik reflected on the fact that despite the MoU's good intentions and the close collaboration among various departments, both from Bangladesh and West Bengal, focusing on different aspects of the Sundarbans such as livelihood, ecotourism, and conservation ecology, a pertinent question arises: "Why has the meeting not taken place and why has there been no progress?"

Dr Pattanaik expressed the need for meaningful conversations among various stakeholders within the government. She clarified that she was not referring to the institutions that are already actively involved in the work related to the Sundarbans. She acknowledged the Ministry of Forest and Environment as one of the key institutions in this context. She noted that while many people tend to focus on the foreign ministries when discussing MoUs, it is important not to overlook the Ministry of Environment and Forest. Based on her interactions with the Ministry of External Affairs (MEA) and the Ministry of Environment, she observed that both sides, including the MEA and the counterparts in Bangladesh, have shown a strong

desire to hold the meeting. However, during various discussions, it was discovered that the file often gets stuck at the Ministry of Environment and Forest, preventing progress.

Dr Pattanaik emphasised the need for a multi-stakeholder approach due to the diverse aspects associated with the Sundarbans. It is not solely the responsibility of a single department to address all the issues related to the Sundarbans. She clarified that the MEA acts as an interface between the two governments, but if other departments or the government as a whole do not take action, despite the existence of a comprehensive MoU, it becomes challenging to make progress. She highlighted that MoUs automatically renew every five years, unless one of the governments informs the other with a 90-day notice of not wanting to renew a particular aspect. It is recognised that MoUs are not legally binding, as making them legally binding often leads to inaction, while having no written commitment also discourages action. Thus, MoUs provide a flexible space for manoeuvring. Ms Pattanaik noted that while there have been discussions at the local level regarding the components of the MoU, further action is needed.

She considered it very significant for the government to take the lead because there is no institutional infrastructure where lessons learned can be shared on either side, whether it is in Bangladesh or in India. She thinks there are a lot of lessons which have been learned. In one of the previous projects works were done to see whether a kind of platform can be established because this particular MoU also speaks of research, collaboration. She said that she was trying to see whether research and collaboration can be built at a particular level if not the government level, but that effort could not take off. Hence, after a very long time, this conversation is being held today, which is again very multi-stakeholder. There are all departments from water, irrigation, the government of Bangladesh, the government of West Bengal, the government of India. She thinks it is one of the very significant meetings where not at the governmental level, but at track two level. She asked how one takes this forward? Ms Pattanaik mentioned that both Mr Rokebul and Ms Paulomi spoke about the very good relationship with Bangladesh at this point of time. There is much more expectation, due to such an excellent relationship, so she asked what holds back? She said that as a researcher, she always feel that, the Sundarbans is one of the area which is extremely non-controversial, unlike many of the issues, which there may be differences of opinion, but this is one area, conservation and ecology that makes the feeling that this should move forward, but this is not moving forward. The golden chapter of the bilateral relationship must go forward by at least making a move on Sundarbans.

The second issue Dr Pattanaik addressed was whether more conversations can be held. It's not necessary in each of the meetings to be a result-oriented meeting. But she thinks that the more meetings are held, some of the issues can be addressed. She further pointed out that when meetings are not held in 12 years and after that if there is only one meeting, it's a kind of showcasing that brings a very good opinion for people in both the countries that the government is finally making moves on Sundarbans. But in reality, this showcasing will not continue unless and until there is a forward movement.

In conclusion, Dr Pattanaik said that there needs to be more conversation between the departments within both the countries and also across. So the 'across' will not happen unless there is dialogue within both, because the same thing also goes in the context of Bangladesh. Some meetings were held within Bangladesh. Hence, she thinks that probably will be a significant step forward for the MoU to take its logical conclusion. She thinks that MoU provides, as she also saw in the G20 meeting, one of the seven issues that has been flagged, one of these is SDG, and climate. So that also concerns Sundarbans.

## OPEN DISCUSSION



Md Zahirul Haque Khan, Executive Director, Institute of Water Modelling (IWM), Bangladesh said that he works for water, environment, and climate change. He thinks that the MoU for the Sundarbans is a good achievement. However, he stressed that everyone would like to see the action on the ground. That is the important thing, to see the outcome and impact on the local community. He asked how it could be done. He suggested going on an issue basis. He pointed out two issues, one of which is livelihood. On the Bangladesh side, the livelihood of the community, those who are dependent on the Sundarbans is being lost. He asked what might be the measures to sustain their livelihood. Something could be done for them on the ground.

Another issue is that the Sundarbans on the Indian side is losing due to erosion. Mr Khan pointed out that a lot of islands were eroded. Erosion takes place because of sediment

lacking. His suggestion is that some measures can be taken to arrest this erosion, to prevent this erosion. In Bangladesh, there are a lot of natural-based solutions and measures being done. Different species, *Hogla Pata*, then the *Gol Pata*, and some series of natural-based spars to arrest the sediment. If the sediment can be arrested, then the erosion can be prevented. That is one thing. So threats can be prevented by measures. Mr Khan further said that everyone talks about green-blue solutions. But he would like to say that there are green, blue, and grey solutions, so it should be a combination of all these things. There is also a need for grey, without hampering, or without impacting the environment, which is possible.

Mr Khan has also pointed out that the Sundarbans has forest, fisheries, biodiversity, wildlife and thus, understanding the concept of hydrology is important. Hydrology is the tidal dynamics in the neap tide, and also in the spring tide, water level, flow velocity. In Bangladesh, with the assistance of Columbia University, and also with the financial support of the World Bank, a subsidence map has been developed for the whole coastal area. There are maps that provide a database for the whole coastal area. These databases are jointly done by India and Bangladesh, to generate data, information, and knowledge. There is a need to understand the present dynamics, and also future dynamics in the change of climate change.

Lastly, Mr Khan said that the World Bank finance at IWM has developed a database for salinity information systems. The salinity at different stations is regularly monitored from IWM. He stressed that it is important to

know the salinity dynamics and the water quality inside the Sundarbans at present and also in future. There is a need for knowledge, data, and information to find measures.

Dr Mohammad Abdur Rouf, Deputy Director (Admin), Department of Fisheries, Government of Bangladesh, pointed out that in order to conserve biodiversity, especially fisheries biodiversity in Sundarbans, as well as Bay of Bengal of Bangladesh, Bangladesh government is implementing a 65 days ban period, which starts from 20 May, and continues 23 July of every year. But in India, it starts from 1st May, and continues for 45 to 60 days. He thinks that if the ban period starts on a similar day, and continues for 65 days, then the conservation programme will be more fruitful and effective. His question to the Government of India was whether there is any plan to start the ban period from the same day, and continue 65 days parallelly.

One of the distinguished audiences pointed out two concrete suggestions towards the effective conservation of Sundarbans. One is mandated at the highest level, which is working towards convening of the next joint working group meeting, and we would need, of course, support from the Bangladesh side. The last meeting was in Delhi, but we will see where the next meeting is, probably in Bangladesh, or we have to work that out, but that would be the most important thing from our perspective. The other one that I spoke about when we spoke for the first time is there is already an existing ongoing cooperation. We call it High Impact Community Development Projects in Bangladesh. We have done 60-odd of them already, either done or continuing, and we can actually have project or projects, proposals coming from the Bangladesh side. Both can be civil society, can be government institutions, local bodies, where we can work with the community. We've spoke a great deal about engaging the community. We can work in areas of sustainable livelihood. We can work in areas of community development, ecotourism, etc. So that is another thought that could be a concrete way forward.

One participant from the audience agreed with Dr Pattanaik and said that there has been a tiny progress in this regard. The second meeting on the transboundary conservation of tigers in Sundarbans landscape in Bangladesh and India was held this year in April at Kolkata. The minutes of that meeting looked to be quite ambitious to start mapping the tiger corridors and start mapping the biodiversity, both flora and fauna to see what kind of risks that actually is being faced by that ecosystem.

Another participant from the audience agreed with what Dr Pattanaik said about this whole India Bangladesh Sundarbans kind of network. To him, that is a completely win-win scenario, and he knows that there is a need to work at it. He thinks the civil society experts also have not pushed it the way it should have been. He thinks there is a discontinuity in work. He proposed that with this new momentum coming up, perhaps there can be a plan of six months, rather than having two or three events and having a lot of time in between. He further suggested learning from the BISRCI activity, i.e., the Bangladesh India Sundarbans Regional Cooperative Initiative activity. He said that there are a few areas where it can be better done. There are a few areas which were wonderful. There is a need to learn from that and go ahead. So that is number one to him. Secondly he pointed out that there is a wonderful example of Bangladesh and India working together in fishery. Because in West Bengal, taking the queue from Bangladesh has actually done the Hilsa sanctuary. The Hilsa sanctuary was initially done by Bangladesh and looking at the success of the Hilsa sanctuary, it was also created in West Bengal. He thinks this sort of case studies need to be pushed forward so that it can roll on into more kind of a multiplier effect on the whole kind of discourse.



## RESPONSE FROM THE PANELISTS



**Mr A T M Rokebul Haque**  
*Director General (SA), Ministry of  
Foreign Affairs, GoB*

Mr Haque emphasised that commitment is very important. And this commitment, he added, will continue to be present all throughout the implementations of these MoUs. That's why actually in 2011, the MoU was signed. He stressed that if there is a need to move ahead with some instruments, there is a need to have some framework or MoUs or agreements. So MoUs are also there. In 2011, two MoUs were signed. One was in Sundarbans, the other one was protecting tigers. Mr Haque stressed that there is a need to build more awareness and build consensus. He said that it is not the joint working group on Sundarbans that should sit together and always try to move forward. The issue of Sundarbans should be discussed in other forums and joint working group meetings regarding climate change, land force, protections of the environment or coastal area. So as long as work is done on bringing consensus, he thinks that the momentum will definitely, will be restored and will be able to work on, as far as the MoU is concerned. The 2011 MoU is a very comprehensive MoU. It has covered almost all the major areas. He emphasised that the think tanks like BIISS and VIF can work on it to make it more effective, and build more awareness on this. Mr Haque thinks that the discussion should be on how man

and nature can be combined. It is very important for a government that the political government always focuses on their popularity. And for that, they sometimes take some measures which go against nature. But it is all the more important to focus on how to combine man and nature. That is why Mr Haque thinks that a focus on the community-oriented economic growth, especially in the case of the Sundarbans local people is important to do some justice for them.

Mr Haque considers that the exchange of visits of the community members between the two parts of Sundarban, that is, the part belonging to Bangladesh and the part belonging to West Bengal to be more important. He emphasised that these visits will help to develop people-to-people contact, which will work to build the confidence and bring the consensus. He also thinks that tourism is also a very important aspect, because it can also help building awareness about Sundarbans.

Mr Haque suggested that if there is proper tourism, then some good employment opportunities can be offered and also created to give some opportunity to have more disposable income. He thinks that the MoU is also in place, but work should be done on how to make it effectively implemented.

Mr Haque elaborated that going back to the effective implementation of MoU, in their diplomacy, it is said that foreign policy is an extension of domestic policy. So for implementing this MoU in an effective or appropriate manner, or up to expectation, there is a need to focus on how actually this whole issue of Sundarbans feature in our national aspects also. So unless the people, the bureaucrats or the policy makers are being sensitised in an appropriate manner, they would not feel the necessity, the uniqueness or the importance of having a sustainable Sundarbans. Therefore, it is also very important that MoUs are done between the two countries.

He then emphasised that at the national level, there is a requirement of taking action so that proper attention is given on the various aspects of Sundarbans so that the policy makers, the politicians, the rule makers and everybody will be sensitised and they would feel the necessity of doing justice to Sundarbans. And of course, to that effect, the MoU is just one of the components. But he also thinks that there is a need to focus on bringing proper attention and awareness to the national aspect.

Mr ATM Rokebul Haque explained that in the word Sundarbans, ‘Sundar’ is a common word used in Hindi and Bangla, which means beautiful and ‘ban’ means forest. Sundarbans itself is a beautiful forest, and it is our global responsibility to protect it. He emphasised that as the owners of Sundarbans, it is all the more important for Bangladesh and India because we share it, and it is part of us. He thinks that as long as Bangladesh is concerned, Bangladesh stands ready to work with India or any other country, even any other organisation like World Bank or any think tank for the management and protection of Sundarbans. But for that, he pointed out that we need more awareness, sensitization, and bringing consensus.



**Dr Mahfuz Kabir**  
*Research Director, BIIS*

Dr Kabir said that, regarding ecotourism, protocols that need to be formulated specially regarding the noise, light pollution, and speed control. There also exists a significant impact of the high-end cruise ship which he thinks is needed to be commercialised and accepted by the mass population of this kind of initiative because of its very high expense. He also emphasised on high-end low-impact ecotourism since it is important for the amount of employment included. If the movement of ports within national ones is seen, it is a labour-intensive activity at least in the part of Bangladesh. Dr Kabir thinks that because of investment, converting these kinds of ports into low-emitting ships or ports is and will be challenging. As such, source of investment is a critical factor and also is a political matter. So there is a need to consider the political economy of this kind of transformation.

Another issue Dr Kabir referred to is the track 2 levels of cooperation. He in this regard reminded the audience about the close relation between the BIIS and VIF and there is a possibility of signing MoU between the two institutions. Referring to this, he said that other institutions

can implement the pledges of the MoU, at least on the conservation of the Sundarbans. He considers that more MoUs are required, and there should be some of the action plans that can be implemented by the think-tanks, research institutions, the academia, and universities. The MoUs of 2011 can be referred to in this regard. For example, on climate resilience and disaster management, relevant departments of Dhaka University and similar institutions and departments of other universities can cooperate among each other. He also proposed MoU between the Indian Bureau of Statistics, the Indian Statistical Institute, and Bangladesh Bureau of Statistics. These can work together at bilateral level to generate the knowledge, the scientific evidence, referring to the MoUs on the Sundarbans. That is very much implementable and these are medium-hanging fruit. He emphasised that these kinds of innovations need to be considered, and also need to be effectively thought of, so in order to implement the commitments made at the highest level. Commitments are there that need to innovate at the civil society level, at the think-tank and academia.

Dr Kabir said that he belongs to a civil society organization, so he pointed out that there might be initiatives or any kind of meeting at the official level, at track one level or track 1.5 level. He thinks that civil society has a very good potential role and started the initiative supported by the World Bank between BIISS and VIF. He thinks there is a need for enlarging this kind of initiative in Bangladesh and by corresponding organisations, universities and think tanks, cross-border cooperation can be enlarged. Dr Kabir elaborated that there might be similar institutions in India and there might be other institutions beyond the region, for example, ICIMOD, so that they can work, SANDEE, or there might be other institutions, universities outside the region, but working on Sundarbans. He suggested that there might be collaboration of this kind at the researcher level or the civil society activist level, so that they can work together to implement the MoU at the track 2 level. He considers that it can be done very well without any major cost implications, but there might be support from either the government or from the World Bank and there might be other organisations like UNES, CAP, ADB which can come together. Dr Kabir suggested that there is a need to push this MoU to preserve the prestige, grace, and the beauty of the Sundarbans, which he emphasised as one of the foremost objective of the stakeholder countries.

Dr Kabir emphasised the factor of development and referred to the fact that Bangladesh Tourism Board is preparing the tourism master plan. He said that there are different segments in different geological parts of Bangladesh and also the ecological spaces. There is an attention towards the Sundarbans including the ecotourism aspect. Although, so far it is not sure what aspects are being covered in the tourism master plan but it is undertaken and the government is taking it seriously with a special focus on the ecological and livelihood aspects and on how to showcase this area as a tourist space.



**Dr Smruti S Pattanaik**

*Research Fellow, MP-IDSA, India*

Dr Pattanaik said that in the last visit of Prime Minister Sheikh Hasina, there was a re-emphasis on Sundarbans cooperation. That actually says that both the government is very much aware and this is something which is implementable. She addressed the question of the fishery and the cooperation on the ban period. The MoU of 2011 says to carry out research and develop a common and shared understanding of the impacts of climate change, along with adaptation strategies. She stressed the importance of habitat restoration and rehabilitation. She said that between the two countries, there is a lot of institutionalisation that has happened in the last one decade. She has not seen that kind of institutionalisation before. Institutionalisation, to a very large extent, encourages a kind of interaction. That is very significant.

Dr Pattanaik then pointed out that consensus on these issues can be built slowly. She also stressed that all the efforts that are happening at the non-governmental level are also contributing to the debate. She doesn't think it is necessary to have two different outlooks towards what the government is doing, and towards what the civil society and the NGOs are doing, because these are not separate

streams. Some are moving, some are not moving. And the moment both move, there will be a kind of rhythm. And that rhythm probably will push the cooperation much faster compared to which appears like a kind of parallel kind of thing. However, Dr Pattanaik said that she doesn't think it is a parallel. Somewhere it will meet. So the more there is cooperation between the local authorities at the non-governmental level, she thinks some of the time the narratives and discourses are very significant for the government to move forward. Because unless narrative discourse is built, a kind of public awareness around certain issues, there will not be that kind of pressure from the people for the government to act, because both the countries are democratic countries elected by the people. None of the government can wish away the wishes of the people. She stressed the need to be aware of the development in Sundarbans, which is happening very well in the past many years. She said that the private push has been there. If the push comes from the government, strides can certainly be made.

Dr Pattanaik stressed the importance of conducting small and joint studies as outlined in the MoU. She suggested that think tanks could take the lead in conducting concise studies, around four pages in length, to provide input to both ministries. This approach, she believed, would contribute to setting an agenda. While the ministry would ultimately determine the agenda, Dr Pattanaik believed that such work, driven by the larger interest, would enhance understanding of the Sundarbans. She proposed engaging in joint research projects, emphasising their small scale and limited time frame to ensure feasibility and avoid turning them into purely academic exercises.

Dr Pattanaik said that she just saw the circular for this year that Bangladesh has circulated, and she assured that all stakeholders were being informed that this is a fishing ban that has been imposed by the Bangladesh government.



But the issue of aligning the timings looks like a low hanging fruit. She suggested that the discussion can be taken forward among the appropriate ministries who can sort of come up with a mutually agreed timeframe for this. Coming back to the question of MoUs and frameworks, she stated that there are other MoUs which actually greatly complement our efforts. One is the Bangladesh-India Inland Waterway Protocol. There is an agreement on how cruise ships will operate between the two countries. And there is a very live and recent example of the Ganga Vilas. It was in the media for some time. It actually entered Bangladesh through Sundarbans, and the tourists would visit the India part of Sundarbans, as well as it entered Bangladesh through a place called Angtiara, and it went to Mongla. That showed how much ecotourism can benefit the entire region. She pointed out that PIWTT is a complimentary framework for developing ecotourism within Sundarbans on both sides. However, she also pointed out that disaster resilience has not yet been discussed so far in this panel. She emphasised that Sundarbans is a disaster-prone area, and there is a framework agreement with Bangladesh on cooperating more and more on disaster management. She proposed that a look can be taken at activities which will find some resonance in the case of Sundarbans. India especially has put a lot of emphasis, and tries to bring to the global stage the importance of DRR, importance of climate resilience infrastructure and having a financing structure in a country where disaster-resilient infrastructure can be built and build back better. So it is part of G20 priorities where Bangladesh is a country which is participating as a special invitee. There is also the CDRI, which is the Coalition for Disaster Resilience Infrastructure, where there is possibility of not just bilateral, but a bigger cooperation.



**Dr Arvind Gupta**  
*Director, VIF*

Dr Arvind Gupta said that a small solution and probably low hanging fruit might also be effective. He said that there are 100 MoU and that it is very difficult for policy makers to really keep track. So the position of the policymakers is understandable. However, he stressed that the role of the civil society and the people who are affected, is also very important. He said that the talks on sensitization of the policy makers are very important and the think tanks can play a role. Today, fortunately, in this day and age of technology, it is much easier to talk to each other than was the case earlier. He considers that in-person meetings are very important. He suggests that BIISS and VIF can take initiative and jointly set up a WhatsApp group as so many people here know Sundarbans very well. He asked to share constructive suggestions and share whatever one has to say. And these suggestions can be discussed in a meeting after six months, one year, two years. Dr Gupta said that it is a process and further suggested to just keep telling each other on what is happening in this field. And he thinks that the policy makers, even if they do not actively contribute, should be there as in a listening mode. He thinks it will make a lot of difference. He said that because some similar groups in other areas have been

created and there is always this constant urge amongst people, enthusiasts to contribute to that, talk to each other, et cetera. Dr Gupta said that through this process, very useful suggestions had come forward.



## SPECIAL REMARKS



**Ambassador Veena Sikri**

*Former Indian High Commissioner to Bangladesh*

Ambassador Veena Sikri addressed the question of the chair at the beginning which inquired about what it takes to implement the 2011 MoU. The question asked by the chair of the previous session was to see if anybody could highlight a single initiative that could make a difference in the Sundarbans. She thinks the answer to both these questions combines through eco-tourism. But actually, when the MoU is looked at, eco-tourism is the only specific initiative which is there in the MoU in the very second article, which talks about three points. Firstly it talks about joint management and joint development and secondly, it talks about adaptation mitigation strategies and carbon sequestration, among others. Thirdly, it talks about developing a long-term strategy for creating eco-tourism opportunities for both countries which will create synergy and generate greater revenue. So eco-tourism is looked upon directly as a poverty reduction measure. Ms Sikri emphasised that ecotourism is also going to create a synergy which

includes the consideration of all issues like environment, health, poverty reduction, and also education to a very great degree because education about these issues is one of the crucial factors missing in the Sundarbans. Young children do not learn about their own problems. They do not learn about how they can change the Sundarbans for the better and thus they do not learn the importance of not cutting the mangrove forests.

Ambassador Sikri then raised the questions regarding why the mangrove forests were being cut and further asked why is saltwater shrimp cultivation increasing in that area when salinity is such a big problem. she said that this question of economic activity by the bigger industrialists and the grassroots problem of environment and health, will come together if ecotourism is looked at because eco-tourism is an economic activity. It can bring a lot of benefit to the big industry, to the people who are involved, but more than anything else, it benefits the women at the grassroots level. Through the organisation, the South Asia Women's Network, eco-tourism can be looked upon, actually now it is called rural tourism because eco-tourism seems like a more esoteric, academic kind of approach. So calling it rural tourism where we are focusing on the grassroots at the rural areas. And rural tourism is being looked at as a medium.

Ambassador Sikri further emphasised that sustainable development cannot be achieved today without gender empowerment. The sustainable development goals are non-achievable, particularly in rural areas. And in all of South Asia, 65 per cent of the people still live in rural areas. In Sri Lanka, it is 81 per cent, even today. So

until the women of the rural areas are involved, sustainable development goals are not going to be achievable. She thinks that, gender empowerment for sustainable development and ecotourism for gender empowerment is very important. This is the message that the South Asia Women's Network has been bringing in in a big way. There are many other developments and positive growth in India-Bangladesh relations that have taken place in the last 12 years. She said that there has been an enormous amount of progress and an enormous amount of achievements, which any two countries can be justifiably proud of. But now there is a need to look at this grassroots level as well. She thinks if a people-focused initiative is looked at and if a public-private partnership is looked at, which will allow it to happen, and this will bring in all the issues of sharing best practices, creating the framework for developing eco-tourism, exchanges across the border through eco-tourism, and that will make the women there the protectors of the forest. There is a whole tradition of bon-bibi, in the Sundarbans on the Indian side and the Bangladesh side. Ms Sikri stressed that there are so many common traditions on the Indian side and the Bangladesh side which are not being looked at. Even the children do not grow up valuing these old traditions. She suggested that the women should be made the stakeholders for conserving this using their traditional methods for their health, using their cuisine, attracting people to come and visit, and this will bring in gender empowerment and sustainable development. This is the message of South Asia Women's Network. Ms Sikri said that she will be bringing a proposal on this. She expressed her hope that this will be included as part of the conclusions of the discussions.



## SUMMARY BY THE MODERATOR

At the end of the session, Ms Cecile Fruman said that this has been an incredibly rich conversation. She brought a few of the strands of thought together. What she takes from the conversation is certainly that they are starting from a very strong base of a previous MoU. She said that there was a MoU in 2011 which is said to be a very strong MoU. It has withstood the test of time, certainly in its design and there is a renewed momentum for cooperation. She added that there have been visits from the prime ministers, there have been joint statements and therefore, there is a shared vision and a shared mandate. She thinks that things have been slow in implementation for now, but it seems that today may be the start of a new wind of cooperation and a new wind for engagement. Ms Fruman does think that this will be a bit of a historic date in the history of the Sundarbans. She pointed out that what has been highlighted in this panel is that there is much that can be done and some of the underlying institutions and infrastructures there. The first is certainly at an institutional level, reviving the joint working group. She said she heard the date of November and hopes indeed that it can be seen happening within this year. She saw a very strong collaboration on this panel on both sides of Bangladesh and India. And she does not know if it was by design that separated with her in the middle, but certainly she would like to step out of this and let everyone mingle and make this happen. She thinks that many have highlighted the importance of track two think tanks. Currently BIIS and VIF are very committed to this agenda and bringing others into that conversation by extending it to the scientific community and to academia. She said that everyone has talked about the importance of data, of evidence, of grounding this in very sound analysis. She emphasised on exposing people to each other, study tours, bringing stakeholders, decision makers and communities together. In all of this, she also mentioned the importance of sharing data, of sharing knowledge, of sharing information and then having some aligned programs. She said that it is not just that we talk, we come together. There is a need to have experience that is shared and then tested and implemented across the border. She said that there were many mentioned areas where cooperation would be welcome, be it community-driven projects, be it tourism.

Ms Cecile said that there has been a lot of talk about ecotourism and rural tourism. It is not only because of the economic benefits, but also because that is how people are exposed to each other. The whole people-to-people agenda is very important to her. She mentioned that the panel talked about disaster risk management, conservation, tigers, dolphins, and others. In the end, it is about protecting livelihoods and making the lives of the people in the Sundarbans better and helping them build resilience for the future.

Ms Cecile thinks that with this very engaged conversation, there can be a roadmap for action for the future. She said that she certainly can speak on behalf of the World Bank that they are very committed to this agenda. She said that preparation for today was quite involved. Getting everyone here in a room was in itself quite an accomplishment. They have the instruments to support through analytical work, through investment work, through dialogue platforms. And this is an agenda that they are incredibly committed to. So in the future, she hopes not to sit between the panels. She hopes to step back to support from behind, but to ensure indeed that this cooperation between Bangladesh and India is fruitful, is deep, and not as episodic as seen in the past. She hopes that everyone will be meeting on a much more regular basis and see significant traction on this agenda.

## SUMMARY OF THE DAY'S PROCEEDINGS



### **Dr Pablo Benitez**

*Senior Environmental Economist, World Bank*

Dr Pablo Benitez expressed his satisfaction with the rich discussion and the opportunity to connect with speakers not only in Delhi, Dhaka, or Kolkata but also in the Sundarbans. He acknowledged the participants' familiarity with the Sundarbans ecosystem and the challenges it faces.

In terms of summarizing the discussion, Dr Benitez commended Ms Fruman for her excellent summary on collaboration and highlighted a few key issues. He emphasised that the Sundarbans encompasses various aspects, including nature, people, biodiversity, and climate change. He stressed the importance of addressing developmental issues and building resilience by working across pillars such as vulnerability reduction, biodiversity protection, advancing social protection schemes, and adopting a comprehensive government approach.

The discussion highlighted the significance of biodiversity for providing livelihood benefits and ecosystem services that contribute to short and long-term resilience and adaptation. Ecotourism development emerged as a promising avenue for livelihood diversification, although careful consideration of the sector's capacity is necessary. Dr Benitez encouraged collaboration on this front and envisioned cross-border tours and carbon-neutral facilities. Planning was deemed essential, particularly for saving some islands through appropriate

technology while allowing others to be left untouched. The challenge lies in making informed decisions, for which spatial planning and LIDAR surveys were proposed as valuable tools.

Ecosystems were recognised as crucial for sediment management and preserving soil, presenting opportunities for scalable approaches in different countries. The discussion also highlighted the role of women-led cooperatives in diversifying income sources and empowering women entrepreneurs. Dr Benitez highlighted the importance of considering the relationship between climate and migration, acknowledging the difficult decisions that may need to be made in managing climate refugees. He expressed hope that the loss and damage discussion under the COP could mobilize concessional resources to support such communities.

Regarding agriculture, salinity was identified as a challenge, but both governments have developed approaches to address it. Aquaculture, with its profitability, requires careful environmental management, ideally incorporating a resilient approach by integrating mangroves. Dr Benitez highlighted the value of blue natural capital accounting, mentioning India's evaluation of the Sundarbans and the importance of assessing both market and non-market values. He encouraged informing decision makers, including finance and economic affairs ministers, about these evaluations.

Collaboration was repeatedly emphasised, and Dr Benitez proposed prioritising key sectors such as ecotourism, fisheries, biodiversity, early warning systems, pollution control, shipping standards, and water quality monitoring. He suggested the establishment of working groups or technical groups to facilitate collaboration, while also mentioning the World Bank's resources available through trust funds or specific financing requests.

Dr Benitez emphasised the need to elevate certain issues at the national, regional, and international levels, ensuring greater understanding and awareness. He mentioned proposals for a joint platform mechanism to plan and coordinate joint activities within existing organisational structures. Furthermore, he encouraged the inclusion of Sundarbans-related discussions in global forums, such as biodiversity and climate change, COPs, as they resonate strongly with participants. He mentioned that a more detailed document would be produced and provided his email address for further questions, comments, and suggestions. The responses received would be consolidated into a workshop report.

Dr Benitez concluded by expressing his gratitude on behalf of the World Bank for the hard work of the VIF and the collaborative efforts of BIIS in bringing together counterparts from Bangladesh. He appreciated the high-level representation from the governments of Bangladesh, India, and West Bengal, as well as the researchers and non-governmental institutions involved. He expressed his commitment to continued collaboration and highlighted the availability of World Bank financing programmes to support ongoing efforts.













# ANNEX

## Memorandum of Understanding

Between

the Government of the Republic of India and

the Government of the People's Republic of Bangladesh

### on Conservation of the Sundarban

The Government of the Republic of India and the Government of the People's Republic of Bangladesh hereinafter referred to as "Parties":

Considering that both the Governments are parties to the Convention on Biological Diversity 1992 and are contracting parties to the Ramsar Convention on Wetlands 1971;

Recognizing that the Sundarban of India and Bangladesh represent a single ecosystem divided between the two countries;

Acknowledging that the wildlife sanctuaries of the Sundarban located in both countries is recognized as UNESCO World Heritage Site and in Bangladesh as Ramsar site as well;

Have Reached the Following Understanding:

#### ARTICLE I

Both Parties recognize the need to monitor and conserve the Sundarban, which is home to rich biodiversity consisting of large variety of rare species of flora and fauna, and acts as a vital protective barrier protecting the mainland from flooding, tidal waves and cyclones.

#### Article II

Both Parties, with a view to exploiting the potential of the Sundarban for development and alleviation of poverty, agree to undertake, but not limited to, the following endeavors:

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- a. consider and adopt appropriate joint management and joint monitoring of resources;
- b. explore the possibility of implementing conservation and protection efforts, encourage mangrove regeneration, habitat restoration and rehabilitation programs, which would eventually increase the potential for carbon sequestration;
- c. develop a long term strategy for creating ecotourism opportunities for both countries, which will create synergy and generate greater revenue.

### **Article III**

The Parties are in agreement that the Sundarban ecosystem is greatly influenced by human use and the human beings living around the Sunderban. The Parties will map and delineate these human settlements on respective sides so that a better understanding emerges of the relationship between human settlements and the ecosystems. The Parties will further develop a management plan that utilizes this information to address issues of livelihood, deprivation by flooding and other climate related disasters, man-animal conflict, pollution, resource depletion, etc. The Parties will through the management plan, also identify opportunities for livelihood generation that do not adversely affect the Sundarban ecosystem.

### **Article IV**

Both Parties agree that an exercise needs to be conducted to identify and catalogue the diversity of flora and fauna that are found in the Sundarban along with their spatial distribution across the countries of Parties. Through this exercise, Parties will determine what areas and species are under pressure including those facing threat of endangerment and extinction. The Parties will develop a comprehensive plan to tackle these threats along with a detailed action plan to adapt against perceived threats.

### **Article V**

Both Parties will carry out research to develop a common and shared understanding of the impacts of climate change along with adaptation strategies that can be implemented.



## Article VI

The Parties, in order to contribute to strengthening the management of the Sundarban across the two countries, are committed to the advancement of collaboration in the following and other areas:

- (a) Share relevant information between the concerned officials, forest and otherwise, of both the countries;
- (b) Explore the possibilities of joint research and management projects;
- (c) Share technical knowledge with the common goal of conservation and management of biodiversity of Sundarban;
- (d) Organize joint tiger estimation at regular intervals;
- (e) Execution of patrolling exercises by the Forest and other relevant Officials of both the Parties along the respective borders to prevent poaching or smuggling of derivatives from wild life;
- (f) Promote capacity building exercise and exchange visits of Forest Officials of field level in order to better understand and share ideas and problems of management, biodiversity conservation, climate change adaptation and promotion of sustainable socio-economic development, and ecotourism;
- (g) Exchange personnel for training and promotion of education in forestry, including at the Wildlife Institute of India, Dehradun financed by the Government of India.

A Working Group will be set up to define activities, responsibilities, time, and resources involved, according to the activities established as per this Memorandum.

## Article VII

The Parties further agree that:

Should changes of national policies in either country result in difficulties in the further development and implementation of this Memorandum, both countries will do their utmost to ensure a reconciliation vis-à-vis the difficulties raised.

This Memorandum is non exclusive, allowing both Parties to enter into similar agreements with other countries.

This Memorandum does not constitute any legal obligations for either Party in any international forum and it does not conflict with any other treaty to which either country may be a party to.



### Article VIII

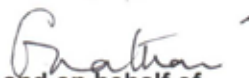
The Memorandum may be modified by mutual written consent of the Parties.  
The period of this Memorandum will be 5 (five) years and shall be extended automatically at the end of each period unless terminated by mutual consent by either Party by serving written notice 90 (ninety) days prior to the date of termination.

Termination of this Memorandum shall have no effect on other similar agreements or projects entered into by the Parties.

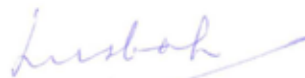
Termination shall not affect the programmes under implementation.

This Memorandum will come into effect on signature and will continue in operation, until terminated by either Party as stated in this Memorandum.

Signed in two originals in Dhaka on the Sixth day of September 2011 in English Language.



For and on behalf of  
the Government of  
the Republic of  
India



For and on behalf of  
the Government of the  
People's Republic of  
Bangladesh

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