Proceedings of the 1st Bangladesh Delta Plan 2100 International Conference:

Issues and Challenges of Implementation

Venue: Pan Pacific Sonargaon Dhaka
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1 Introduction

Bangladesh is the first country in the world to develop a comprehensive 100-year plan for its entire Delta. The plan gives a vision of *'Achieving safe, climate-resilient and prosperous delta for the desired future spanning up to 2100'*. The intended mission of the plan is to *'Ensure long term water and food security, economic growth, and environmental sustainability, while effectively coping with natural disasters, climate change and other delta issues through robust, adaptive and integrated strategies and equitable water governance.'*

The 1st International Conference on the Bangladesh Delta Plan 2100: Issues and Challenges of Implementation (the BDP 2100 Conference) took place on 26-27 May 2022 in Dhaka including series of events and sessions. The conference was organized under auspices of the Delta Governance Council (DGC), organized by General Economics Division (GED), Ministry of Planning (MoP) with support from the Embassy of the Kingdome of The Netherlands, the World Bank (WB), Japan international Cooperation Agency (JICA) and Japan Embassy Bangladesh, European Union (EU) and the Food and Agricultural Organization (FAO) Bangladesh. The Objectives of the 1st International Conference on the Bangladesh Delta Plan 2100 is.

- To promote discussion on Bangladesh's Delta Plan implementation challenges,
- To align and foster possible actions for proper implementation of the Delta Plan,
- To connect the relevant national and international communities (ministers, members of parliament, policy makers, representatives of Governments, scientists, professionals, academics, business, youths, development partners, and other stakeholders) to the implementation of Bangladesh Delta Plan 2100 (BDP2100) implementation.

H.E. Sheikh Hasina, MP, the Hon'ble Prime Minister, Government of the People's Republic of Bangladesh graced the Inaugural session virtually from the Gono Bhaban. Discussions include on Bangladesh's Delta Plan 2100 implementation challenges, alignment and foster possible actions for ensuring proper implementation of the Delta Plan. The BDP 2100 Conference is an initiative of the Government of Bangladesh and renowned partners: the Embassy of the Kingdom of The Netherlands, Bangladesh, the World Bank Group, the Asian Development Bank, Japan International Cooperation Agency and Embassy of Japan in Bangladesh, the EU Embassy in Dhaka and FAO Bangladesh office.

The BDP Conference will be an annual event to share knowledge on the developments and discuss aspects of implementation and climate change adaptation. For this conference, a number of events has been organized in this conference; they are **one Plenary session** on Institutional challenges and opportunities with international experiences; **4 breakout sessions** on Coastal Zone, River Systems, Urban Areas and Agriculture Transformation along with **2 side events** on Valuing Water and Youth Panel Dialogue, **one Round Table Discussion** on improving and accelerating BDP2100 Implementation and concluding session apart from an inaugural session. Detailed programme of the conference is presented in Annex A.

In this report, summaries of the presentations and discussions of the sessions is provided. The report is structured as the 1st International BDP 2100 Conference session plan, the Inaugural Session, Breakout Sessions (parallel sessions) and De- briefing Session in into following sections and sub-sections.

The 2-days Conference addressed the implementation issues for overcoming the huge challenges of implementing BDP 2100 that to contribute to enhance knowledge and understanding of Climate Change Adaptation in practice. The conference was a hybrid event attended by 650 people physically and 500 participants connected online. The results will be included in the Bangladesh Delta Plan 2100 knowledge portal *www.bdp2100.gov.bd* and in a publication presentation the results and insights of the BDP2100 Conference.

After approval of the conference proceedings, the conclusions and recommendations will be discussed in the Delta Governance Council (DGC).

2 Day 1: 26th May, 2022

2.1 Inaugural Session

Prime Minister Sheikh Hasina addresses International Conference on the Delta Plan 2100 through a videoconference from Gono Bhaban. Photo: PID

Bangabandhu Sheikh Mujibur Rahman, Father of the Nation, the architect of independence, dreamt of building a prosperous and happy Bangladesh, free of poverty, hunger, corruption, and deprivation. Bangladesh Delta Plan (BDP) 2100 is an integrated techno-economic centennial mega plan that has been adopted in September 2018 under the leadership of Bangabandhu's abled daughter and epitome of miracle development of Bangladesh, the Hon'ble Prime Minister Sheikh Hasina to translate Bangabandhu's dream into reality. With that being in actions, the 1st Bangladesh Delta Plan 2100 International Conference was a big step in accelerating and improving the pace of BDP 2100 implementation.

The Hon'ble Prime Minister, Government of the People's Republic of Bangladesh, Her Excellency Sheikh Hasina was virtually connected to grace the inaugural ceremony as the chief guest of this international conference. The inaugural ceremony was chaired by Dr. Shamsul Alam, the Hon'ble state Minister, Ministry of Planning. Dr. Mohammad Abdur Razzaque, MP, the Hon'ble Minister, Ministry of Agriculture enlightened the conference as the special Guest. Mr. Zaheed Farooque, MP, the Hon'ble state Minister, Ministry of Water Resources, and Mr. Anne van Leeuwen, H.E. Ambassador, Embassy of the Kingdom of Netherlands, Bangladesh were present in the inaugural ceremony as guests of honor, The inaugural ceremony was honored by the presence of respected members of the Cabinet, senior secretaries, secretaries and high officials of the govt, diplomates, representatives of Development Partners, NGOs, Private sector bodies, CSOs, Researchers, Academicians, Experts from home and abroad, journalists and representatives of various print and electronic media.

Photo 1: The Hon'ble Prime Minister addressing in the Inaugural session virtually connected from the Gono Bhaban, and other dignitaries in the dais at Pan Pacific Sonargaon Hotel, Dhaka 26 May 2022. From Left, Mr. Zaheed Farooque, MP, the Hon'ble state Minister, Ministry of Water Resources, Dr. Muhammad Abdur Razzaque, MP, the Hon'ble Minister, Ministry of Agriculture, Dr. Shamsul Alam, the Hon'ble state Minister, Ministry of Planning and Mr. Anne van Leeuwen, H.E. Ambassador, Embassy of the Kingdom of Netherlands, Bangladesh

In this session it has been pointed out that to build the sustainability and strength against climate change, Bangladesh has become the only country in the world to have 100 years plan. The BDP 2100 objective has been discussed in this session which focus on the sustainable and commonly agreed upon strategy with all relevant stakeholders for an optimum level of water safety, food security as well as sustainable growth of Bangladesh providing a framework for implementation. This plan is serving as an umbrella to all other related national and sectoral plans with long term perspectives.

The session was graced by the valuable speeches of respected guests, special guest, chairperson, and chief guest. The speeches focused and discussed the formulation, implementation processes of BDP2100 along with the challenges and way forward for implementation. Despite being a country of many natural problems, Bangladesh has an incredible economic growth and formulating BDP2100 can be a pin to the success. In the inaugural session it has also been stated that full scale BDP2100 implementation is only possible if all the relevant stakeholders come together and work along. The session also stated that BDP2100 is a great effort to manage water and land. Safety from flood, water security river system management, integrated use of land and water resources are the essential ingredients to ensure the BDP2100 goals.

Photo 2: Addressing Mr. Zaheed Farooque, MP, the Hon'ble state Minister, Ministry of Water Resources

Photo 3: Addressing Dr. Muhammad Abdur Razzaque, MP, the Hon'ble Minister, Ministry of Agriculture

Photo 4: Addressing Mr. Anne van Leeuwen, H.E. Ambassador, Embassy of the Kingdom of Netherlands, Bangladesh

Photo 5: Addressing Dr. Shamsul Alam, the Hon'ble state Minister, Ministry of Planning.

The advancement in agriculture including innovation in this sector has been done in the recent past. In this session it has also been mentioned that agriculture is one of the main wheels of the economic development in Bangladesh as this sector is providing food security to about 170 million people. Bangladesh can make

remarkable progress by using efficient technologies in agriculture where BDP2100 can achieve its economic growth and environmental sustainability altogether with the proper linkage and formulation.

In his speech, the Netherland Ambassador, H.E, Mr. Anne van Leeuwen mentioned three challenges specifically to emphasize the BDP2100 implementation, which are.

- to increase inter-ministerial cooperation between the implementing ministries, the role of Delta Governing Council (DGC) is very important,
- to arrange funding for implementation of priority projects as well as other projects, and,
- to strengthen and align all stakeholders' participation in the implementation process

The Hon'ble Prime Minister mentioned that even though Bangladesh is no way responsible for the global climate change, it suffers a lot for it and hence BDP2100 has been formulated to make a safe, resilient and prosperous Bangladesh. The Hon'ble Prime Minister then briefly summarized her government's initiatives taken in the environment, climate change and water resource management sector. They were mainly, as the Prime minister mentioned, are signing water sharing treaty with India, signing UNCLOS, establishing Climate Change Strategy and Action Plan and Bangladesh Climate Change Trust Fund, etc. She said that Bangladesh, being a delta, has been facing challenges of natural and climate change induced disasters and these challenges will further increase in future. So, the country is needed to build in such a way that its future generations can lead a decent life. Keeping this view in mind and in order to achieve long term food security, water safety and sustained economic growth, her government had adopted this techno-economic mega plan based on information, technology and knowledge, she added.

Summarize from the four keynote speeches at the inaugural session:

A. Dr. Shamsul Alam, the Hon'ble state Minister, Ministry of Planning, in his address mentioned about the BDP2100 project status along with their implementing agencies and activities. BDP2100 mentioned 80 projects to be implemented up to 2030 – short term. Different Agencies under number of ministries started implementation of few projects, a few of them already completed and numbers are in progress from the GoB budget but need more participation from the Development Partners for wider implementation of BDP2100 projects.

B. Mr. Anne van Leeuwen, H.E. Ambassador, Embassy of the Kingdom of The Netherlands, Bangladesh, in his address mentioned about not building big structures against nature rather making structures like higher dykes, close cooperation between Govt of Bangladesh and Government of the Netherlands for implementing Bangladesh Delta Plan 2100, wider participation and engagement of the youth to implement BDP2100. Participation and working together of all relevant stakeholders, research institutes, private sectors would make better enabling environment for implementation of the BDP2100. We are now entering a new phase. While the previous phase was all about planning, designing and understanding, this new phase is all about implementation, coordination and cooperation. Because climate change will not wait for us. We need to act now.

   He also added that most experts, both scientist and government officials involved in the BDP2100 implementation process continuously focus on the content. In other words: on the "what" and the "why" questions. In practice however, institutional fragmentation and low coordination levels are hampering the transformation process.

   Therefore, 4 years after approval of the BDP2100, it is time to put more emphasis on to the "who" and "how" questions. The BDP2100 can only be implemented successfully if all relevant stakeholders within the government, research institutes and private sector commit to work together to create energy and boost project implementation.

C. Mr. Zaheed Farooque, MP, the Hon'ble state Minister, Ministry of Water Resources, in his address emphasized on the safety of water resources management capacity development and cooperation of the agencies and stakeholders. He requested more active participation of the Development Partners for the full implementation of the BDP2100. He mentioned that the BWDB is the dedicated largest

Agency under MoWR working with the water resources and water induced Disaster Management of the country, well come more active support from all the Development Partners for the Implementation of the BDP2100.

D. Dr. Muhammad Abdur Razzaque, MP, the Hon'ble Minister, Ministry of Agriculture, in his address mentioned about sustainable land use with the use of efficient technology and resources. He thanked the Netherlands Government for supporting for the preparation of the BDP2100, he also mentioned that the Netherlands and all the Development Partners will come forward to expedite the implementation of the BDP2100, to make a sustainable prosperous Delta for the future generation. The plan, the BDP2100, is ready for implementation, now is the time for action, need activities at G to G - Government to Government and B to B - Business to Business involving all stakeholders.

The Chief Guest stated that Bangladesh amidst many confronting challenges has achieved success in many areas particularly in the socio-economic front and the country has been on track achieving SDGs. She added that her government is strongly committed to the implementation of the Delta plan and putting necessary efforts for that purpose. Many projects under BDP2100 are being implemented. The Hon'ble Prime Minister pointed out that implementation of BDP will require 2.5% of GDP by 2025. She urged the country's development partners to support implementation of this plan. She said cooperation or participation of all at home and abroad– the friendly countries or development partners is necessary in every field of knowledge, technology and exchange of experiences, starting from financing. The Hon'ble Prime Minister concluded her speech with a hope that the conference will be a success one and would come out with meaningful outcomes for faster implementation of BDP 2100.

2.2 Plenary Session on the Institutional Challenges & Opportunities with International Lessons

2.2.1 Panel member of the session

Immediate after inauguration of BDP 2100 International conference A Plenary session was held on 'Institutional challenges and opportunities with international lessons', which was moderated by Mr. John Roome, Regional Director South Asia Sustainable Development at World Bank (WB) and Professor Dr. Saleemul Huq, International Centre for Climate Change and Development (ICCCAD). Mr. S.M. Rezaul Karim, the Hon'ble Minister, Ministry of Fisheries and Livestock (MoFL); Mr. Md. Shahab Uddin Ahmed, the Hon'ble Minister, Ministry of Environment, Forests and Climate Change (MoEF&CC), Mr. Zaheed Farooque, MP, the Hon'ble state Minister, Ministry of Water Resources (MoWR), Dr. Kawser Ahmed, Member (Secretary), General Economics Division (GED), Planning Commission, Ministry of Planning (MoP), H.E. Mr. Anne van Leeuwen, Ambassador, Embassy of the Kingdom of Netherlands, Bangladesh, Country Director, World Bank, Mr. Yuho Hayakawa, Chief Representative, Japan International Cooperation Agency (JICA), Bangladesh and H.E. Charles Whiteley, Ambassador & Head of Delegation, Europian Union (EU) Bangladesh were present in the session as Panelists. Senior secretaries, secretaries and high officials of the government, Ambassadors and diplomates, representative of development partners, business community and civil society organizations, academicians, scientists, researchers, dignitaries from home and abroad attended the plenary session.

Photo 6: From left to right Mr. John Roome, World Bank; H.E. Mr. Anne van Leeuwen, Netherlands Ambassador in Bangladesh; Dr. Kawser Ahmed, Member (Secretary), General Economics Division (GED); Mr. Md. Shahab Uddin Ahmed, the Hon'ble Minister, Ministry of Environment, Forests and Climate Change (MoEF&CC); Mr. S.M. Rezaul Karim, the Hon'ble Minister, Ministry of Fisheries and Livestock; Mr. Zaheed Farooque, MP, the Hon'ble state Minister, Ministry of Water Resources; Country Director, World Bank; H.E. EU Ambassador and Head of Delegation Bangladesh; Chief Representative, JICA, Bangladesh; Professor Dr. Saleemul Huq, ICCCAD.

2.2.2 Purpose of the session

The plenary session aimed to the unprecedented long-term visionary plan with strong country ownership along with the key challenges and way forward towards BDP 2100 implementation and how to prepare the next generation for smooth implementation of this mega plan in future.

2.2.3 Discussed core issues and recommendations

The discussion on the key challenges brought to the fore the issue of the siloed approach of the different stakeholders, inadequate collaboration and cooperation amongst them, and the higher need for investment and financing. The need for more institutions like Delta Governing Council and Delta Wing within GED, for taking up implementation and coordination issues was also pointed out in the discussion. It was suggested that providing legal recognition for the Delta Plan can be a good way to address these challenges. The session was informed that government of Bangladesh is thinking to formulate an act (regulation) to govern the Delta Plan at all levels of the state machinery. It was also opined that strong cooperation from government to government, government to private, business to business, and whole of stakeholders' approach would be needed for BDP 2100 implementation.

Another challenge that was highlighted was engaging the youth in the implementation of this plan, since it is the youth who will eventually take over the role of implementation and will benefit from it. The opportunity that shrouds the challenges is also the prospect of the youth. It was echoed in the discussion that the BDP 2100 has been formulated and kicked-off by the matured ones, but as a long term plan the youth and the upcoming generations will have to foster it and carry it out. It is therefore crucial that BDP 2100 builds up good communication with the youth. The youth leaders, present in the plenary, expressed their deep interest to be actively involved in BDP 2100 implementation. In the discussion it was also stated that building awareness among the people and educating next generation about this plan should be one of the important strategies to move forward. It was stated that Delta Plan content will eventually be included in the school textbook curriculum. Introducing Delta plan into the curriculum of the universities of Bangladesh has also

been emphasized in panel discussion. An initiative is underway to introduce online course on Delta plan with partnership of Independent University of Bangladesh and Wagnerian University of the Netherlands.

The plenary therefore emphasized on common understanding and strong coordination among and within the government ministries, implementing agencies, private sector bodies and development partners in planning, designing, and implementing projects and programs for BDP 2100. For sound implementation of BDP sensitizing the stakeholders and building capacity of the implementing partners were also emphasized. The session highlighted the need for aligning all other plans and policies with delta plan. Establishing more institutions particularly setting up Delta Wing in GED is strongly recommended.

Involving youth and mainstreaming BDP 2100 into educational curriculum have been strongly recommended in this session. It is important to not just engage youth in BDP 2100 implementation but engage them meaningfully so that they can contribute significantly. The panel also suggested to use learnings from the experience of the other Delta and building partnership for education, knowledge, and technology.

2.3 Breakout Session

2.3.1 Breakout session on the River Systems and Estuaries

The Breakout Session on the River systems and estuaries was chaired by Mr. Kabir bin Anwar, Senior Secretary, Ministry of Water Resources while Mr. Malik Fida A Khan, Executive Director, CEGIS moderated the session.

Purpose of the session

The purposes of this breakout session on rivers were to discuss and review implementation approaches, challenges, and prospects for managing the river system of Bangladesh in general and the Ganges-Padma and the Brahmaputra-Jamuna and Meghna River Systems in particular. The session helped to provide the future directives on what, how, and when to implement different strategies of the river hotspot for sustainable and integrated management of rivers and estuaries. With the introductory speech of the moderator along with the active participation from the audience regarding modalities of the river course stabilization plan and river dredging made this session no less than a success.

Discussed core issues

In the session, a few core issues were introduced in line with the implementation of BDP 2100 based on which discussion was made. These include River Stabilization/Master Plan , navigation, and dredging considering international protocol route, sedimentation and river erosion, synchronization of all initiatives for making coherence and coordination within and among ministries, divisions, and development partners for integrated river and water resources management, implementation and financing of river system management projects of BDP investment plan, institutional reforms and capacity building, project readiness, and priorities for water resources management, etc .


Photo 7: Question answer session and knowledge sharing at River Break out session

Dredging is required to improve the navigation route or corridor, mage flood with flood-bypass and connectivity among the rivers and river with flood plains, also smart dredging can be introduced with appropriate dredged earth management. The stabilization of major rivers like the Brahmaputra/Jamuna River would open the door to improve navigation and enhance the international protocol navigation facility and improve the multi-modal communication facilities. There should be linked between river training works and navigation route or corridor to ensure uninterrupted navigation. The session put importance in formulating Char stabilization plan along with master plan.

Discussion urged on strengthening coordination between BWDB and BIWTA for designing and planning the dredging activities and maintaining water level suitable for navigation along with coordination among development partners like WB, JICA, ADB, the Netherlands in implementing the projects for efficient management of the rivers is necessary.

Next steps

A river stabilization/master plan is required for sustainable development and management of the rivers. A holistic approach should be followed in this respect that not only focus on the river training works and dredging but also connects drainage, biodiversity, and floodplain issues. Transboundary issues are needed to be considered to take optimize the water flow and maximize benefits of co-riparian countries, especially for Bangladesh being the lowest riparian. Development Project Proforma (DPP) should be flexible so that monitoring and implementation could be done simultaneously.

2.3.2 Breakout session on the Coastal Zone

The breakout session on coastal zone was chaired by Mr. Zaheed Farooque, MP, the Hon'ble state Minister, Ministry of Water Resources while Mr. Zahirul Haque Khan, Deputy Executive Director, IWM moderated the session.

Purpose of the session

The purpose of this break out session was to finding out appropriate coastal resilience interventions in line with BDP 2100 through discussion and sharing experience of the informed participants. Therefore, the focus of the session was on coastal resilience, next coastal program, coastal interventions, and coastal innovations.

Discussed core issues

Tropical cyclones, salinity intrusion, coastal polder protection and development, freshwater availability etc. are the major challenges in the coastal area. Another challenge as discussed in the breakout session is the poor coordination among the different agencies involved including LGED, BWDB, DPHE, DAE, DOF, DDM, etc., BCG for which projects are not implemented effectively. In addition, due to lack of community

participation, funding and priority also minimize the way of implementation. Land acquisition is a critical issuer for the progress of the works in this area which has been faced by previous projects as well.

Photo 8: Question answer session and knowledge sharing at Coastal Break out session

Photo 9: Question answer session and knowledge sharing at Coastal Break out session

The dire need highlighted is .to increase the resilience of coastal population to natural disasters and climate change in a planned manner. It is also noted that enhancement of coastal resilience should be supported by a sound financial planning of the operations and maintenance of existing and future infrastructure in the coastal zone are much needed than any other factors.

Next Steps

Mangrove afforestation for reduction of storm surge height and wind velocity, Design of Climate resilient coastal Polder, addressing salinity Intrusion, Adaptation Measures Gorai River Restoration and Ganges

Barrage, Engineering and nature-based measures, Polder rationalization program, proper Operation and Maintenance(O&M), climate proofing measures are required for the sustainability of the coastal area. Hybrid approach to safeguard the coastal region along with meaningful community participation and timely maintenance are critical and needed for sustainable management. Emphasized to include the learnings from the past, adopting good practices and shaping future interventions. Though all locations are not suitable for mangrove forestation, but mangrove systems can also be helpful to prevent erosion and reduce wave attack by reducing wave energy.

In-depth knowledge of the coast and the interaction with the interventions are essential, given the unique landscape and dynamics of coastal Bangladesh. Continuous development of knowledge and the application of state-of-the-art tools should be prioritized, including knowledge transfer of these developments, and adapting local community are also necessary.

Department of Forest has been implementing social forestry programme involving local communities to ensure benefit-sharing and achieve social, environmental, and economic sustainability. This will be providing an additional layer of protection for embankments, riverbank stability and community livelihoods by potentially reducing the impact of tidal flooding, wave damages and reducing storm surge energy.

2.3.3 Breakout session on the Urban Areas

The Breakout Session on the Urban Areas was chaired by Mr. Md. Tazul Islam, MP, the Hon'ble Minister, Ministry of Local Government, Rural Development and Cooperatives while Mr. Chris Zevenbergen, IHE moderated the session.

Purpose of the session

The objective of this breakout session are to discuss the challenges and opportunities pourashavas and GCs are facing to overcome their increasing urban infrastructure deficit, leading to poor living conditions, environmental degradation and future growth opportunities, and identify enabling conditions for practical action (urban demonstrators) and rapid upscaling of climate resilient infrastructure including lessons learned (best- and bad practices from frontrunners). Ramping up preservation and restoration efforts of green and blue public spaces is crucial to safeguarding the livability of pourashavas.

Photo 10: Question answer session and knowledge sharing at Urban Break out session

Discussed core issues

Investments in climate resilient urban infrastructure in Bangladesh are increasingly vital to increase productive capacity as well as to enhance economic growth, while improving the living conditions in cities and their adaptive capacity to address future climate risks. Collectively the pourashavas and Urban Growth centers play a key role in the sustainable development of Bangladesh. The rapid growth of the urban population poses a severe challenge for the urban institutions responsible for water supply, sanitation, and solid waste management, particularly water and soil pollution will have long lasting impacts.

One of the challenges concerns the alignment between the long-term horizon of BDP2100 and the urgent and acute need for actions at local level. Coordination between the two is urgently needed. In the upcoming Delta act, Urban Hotspots based on legal footing should be developed. A national planning act or urban and regional planning act need to be in place. The pourashavas lack the financial resource and technical expertise to plan, design and implement climate-resilient smart infrastructure. There is an urgent need to build these capacities at the local level. It is important that for upscaling of small scale initiatives (such as upscaling of Urban Demonstrators) criteria for selecting priority of the projects should be appropriately devised and practiced to maximize synergies with other ongoing and planned urban infrastructure improvement programs and that the community is engaged in the process. This breakout session recommended to update the old master plans where applicable and highlighted the importance of involving the local stakeholders including LGIs in formulating plans.

Next steps

Rapid implementation of small-scale interventions involving urban infrastructure is needed. There should be step by step approach as city transformation takes time and cannot be completed at once. It is therefore important that these interventions are embedded in a holistic/integrated plan and aligned with other ongoing/planned development projects and programs. Hence, good planning and coordination is crucial at local level including the integration with planning of all sectors and all levels.

A new initiative referred to as 'Urban Governance' aims to accelerate improvements in the cities by restoring and preserving public spaces, well-connectivity, and addressing water storage, prosper drainage, cleaning, green city, cooling and maintenance of urban infrastructure. The first two pilots will be implemented in the pourashavas Keshobpur and Roazan in 2023 under a financial and technical support (grant) from the Netherlands Government. The pilots will focus on the establishment and maintenance of multi-functional public spaces, such as a river side walkway and beautification (Keshobpur), and a recreational park with water retention (Roazan). The results will be evaluated, and if found successful, this model will be implemented in 100 other pourashavas and Growth Centers in next three years. The 'Urban Governance' initiative also aims to build the capacities within local government bodies and other local stakeholders (learning by doing and peer learning) that are required for further up-scaling within and across pourashavas and urban growth centers.

MoU signing for Urban Demonstration Program

A new initiative referred to as 'Urban Governance' aims to accelerate improvements in the Bangladeshi towns by restoring and preserving public spaces, and addressing water storage, development and maintenance of urban infrastructure, well-connectivity, Green City, Clean City etc. The 'Urban Governance' consists of 3 cycles. Each cycle will last about one year. The 1st cycle (year one) comprises the design, engineering, and implementation of a pilot urban governance in two pourashavas. In the 2nd cycle (year two) and 3rd cycle (year three) 'Urban Governance' will be implemented in 10 and 100 pourashavas, respectively. The pourashavas which will be selected in this action are similar to the ones of the programs of ADB (UGIIP-3) and WB. These programs aim to strengthen urban governance and improve urban infrastructure and service delivery in these pourashavas (municipalities), respectively, in Bangladesh. The programs provide investment funds to pourashavas based on their governance performance. The adoption of Urban Demonstrators by these projects will accelerate and strengthen roll out and learning and reach-out activities.

Already, a MOU has been signed by the Ministry of LGRD&C and the Embassy of the Kingdome of The Netherlands at the 1st International Delta Conference held in 27-28 May 2022 in Hotel Pan Pacific Sonargaon.

Photo 11: MoU signing for the urban demonstration program

2.3.4 Breakout Session on Agriculture Transformation

Dr. Muhammad Abdur Razzaque, the Hon'ble Minister, Ministry of Agriculture presided over the event. H.E. Mr. Anne van Leeuwen, the Ambassador of The Kingdom of the Netherlands to Bangladesh, and Mr. Christian Berger, Senior Rural Development Specialist, the World Bank-Dhaka, were special guests. Prof Dr Louise Fresco, President of Wageningen University and Research, provided an inspiring keynote, stressing the need for working together, jointly exploring new avenues to feed the people, and align BDP2100 and agriculture transformation.

Purpose of the session

Over the last 50 years, the Government of Bangladesh is addressing the challenge to feed the nation. To ensure this in future, there is the need to respond to the new realities of meeting the ever-increasing demand for diversified, adequate, safe, nutritious, and affordable food and diets. It is necessary to adopt multi-level consultative and participatory approaches to engage with stakeholders, jointly develop a vision for the food and agriculture transformation processes across the country's relevant sectors and geographic areas, and enhance implementation action, addressing increased climate change challenges. One of the areas for alignment is the Bangladesh Delta Plan 2100. Considering the importance of water to agriculture, and related governance and infrastructure in the Bangladesh delta, the main purpose of the session was to discuss Agricultural Transformation Program to engage national and international partners for working in their capacity on various actions. The goal was to discuss and agree on how agriculture transitions to a sustainable and prosperous future would occur within the ATP so that it may be aligned with BDP2100 and who would take which action and when.

Discussed core issues

In this session the challenges faced by the sector and the potential areas that could be further utilized to overcome livelihood challenges and create diverse economic opportunities have been discussed. The session further emphasized on the progress Bangladesh has made using new technology in agricultural production and believed this would need to be harnessed to support high-value crops production and increased food export to ultimately support commercialization of the sector. The significance of alignment and coordination with respect to all stakeholders relevant to the agricultural sector as well as the technical support from development partners have to be continued as a necessity for achieving the required transformation in agriculture sector.

Photo 12: Question answer session and knowledge sharing at Agriculture Transformation break out session

The participants discussed the WHO and HOW question, about agricultural transformation, in 3 sub-groups: 1. Future Food Export; 2. Climate Smart and Resilient Agriculture; 3. Coordination and Alignment. In the future food export group participants stressed to focus on the domestic market first (the fast income growth leading to changing dietary patterns and increasing demand for safe and nutritious food). The importance to have better quality products, cooling systems, and packaging to extend products shelf lives along with certification and branding of local products, following up with government policy support to increase products competitiveness and nutrition have been stated in this session. When looking at the value chain, the need to use a systematic approach, to show not only the interconnection between production and markets, but also environmental, climate change and societal concerns, and how different goals are balanced has also been discussed in this group. A better distribution of the profit must be addressed urgently as well as encouraging Public-Private investments in food waste and the post-harvest loss reduction process would lead to the long-term sustainability of food self-sufficiency.

Next steps

In climate-smart and resilient agriculture a necessity for capacity building and training of Agri-producers on new production and post-harvest methods have been addressed. The existing production systems need to be reinforced through support by extension advisory services and digital agriculture solutions accessible to farming communities. Youth should play important role in promoting Climate Smart Agriculture systems and innovations, and promotion of Youth Entrepreneur incubations to promote Climate Resilient Agriculture technologies. To address the clime change, improved access for financing and financial services to the private sector to engage and promote Climate Smart and Resilient Agriculture within value chains is crucial. In this group discussion it has also been found that developing sustainable resource practices, based on agriculture and food system approaches is necessary to ensure long-term sustainability.

In alignment and coordination group the discussion focused on the successful implementation of programs and that can be achieved by identifying all relevant stakeholders/ partners as a starting point. Importance of horizontal inter-ministerial and vertical intra-ministry coordination is start point towards achieving government goals. Learnings from positive experience from other countries, to prevent starting from scratch and losing time has been emphasized.

In summary, the session supported the vision on Agriculture Transformation of the Hon'ble Minister and highlighted the need of coordination for a policy driven revitalization of agriculture, in which farmers are acknowledged for their contributions to feeding then nation, and agriculture becomes an attractive sector for youth. For this, active multisector collaboration is required in interventions. By breaking down the vision of BDP 2100 and ATP into strategies with scenarios and measurable goals is possible to assess and enhance the capacity of the Delta Plan and ATP to deliver its activities efficiently and in due time through priority programs. The World Bank and Food and Agriculture Organization will support from their sides, as will youth,

NGOs, other financial institutions present and private sector, as stated in the meeting. Overall, this session emphasized, among others, on increasing farm productivity, promoting agro-processing and developing agricultural marketing chain, engaging youth in climate change adaptation, strengthening research, minimizing post-harvest loss and strengthening inter- agency, inter - partner and inter-sectoral coordination both vertically and horizontally.

2.4 Side Event

2.4.1 Side event on Valuing Water Initiative

This side event was chaired by Ms. Sharifa Khan, Member (Secretary), Agriculture, Water Resources and Rural Institution Division while Mr. Md. Delwar Hossain, DG, WARPO moderated the event

Purpose of the session

The objective of the session is to provide the participants with the diverse range of views in the valuing water space, create a road map for adopting valuing water in public decision making and especially in the delta investment projects, ensure the participation of the private sector in the valuing water initiative, create mass awareness for valuing water which may lead to adoption of better water practices in general.

Photo 13: Question answer session and knowledge sharing at valuing water session

Discussed core issues and Next steps

There are major issues which are yet to acknowledge for the valuing water. Lack of data is a major constraint for conducting appropriate valuing of water. There are lack of institutional framework and infrastructure for collecting and dissemination water data. Value of water is not properly addressed in public procurement and

investment processes. Capacity building and mass awareness raising are important in valuation of water uses. Appropriate incentive mechanisms for private sector are to be in place for ensuring right use of water as it would require technological upgradation and innovation. Appropriate institutional mechanism must be in place for collecting water data as well as BBS may be involved in generating and disseminating water data for public use. Water data for agriculture, residential, municipal, eco-system and industrial use must be collected for appropriate valuation, pricing and encouraging efficient use of water. Valuing water should be a part of both the public and private procurement and investment process; however, it is especially important for public sector. Projects undertaken by the Delta Investment Plan should use valuing water principles in prioritizing projects and assessing investment needs.

The awareness raising must be continued for each segment of the society. Shadow prices may be estimated in prioritizing and selecting projects and allocation of funds. Incentives for activities related to valuing water in the private sector may be designed and encouraged as it would require technological upgradation and innovation. Research and development in the valuing water space and sharing of knowledge in national and international success stories may be institutionalized through developing knowledge sharing hub on valuing water.

2.4.2 Side event on Youth Panel Dialogue

Dr. Shamsul Alam, the Hon'ble state Minister, Ministry Planning chaired this side event while Mr. Mohibul Hassan Chowdhoury, MP, the Hon'ble deputy Minister, Ministry of Education, Mr. Kabir Bin Anwar, Senior Secretary, Ministry of Water Resources, Mercy Tembon, Country Director WB and Prof. Dr. Saleemul Huq, Director, ICCCAD were present as Panelists. Ms. Roos Middelkoop, EKN, Ms. Benzir Huq Mou, SIBDP, Ms. Alexia Sotiriadou, Delta Context and Sohail bin Saifullah, ICCCAD jointly moderated this session. Four representatives, Ludmila Sarah Khan, Maria Mehrin, Arif Chowdhury and Faisal Mahmood, discussed from their perspective and asked questions to the respected panelists.

Purpose of the session

It is important for different stakeholders to come together and share their experiences and knowledge on how to create a space for youth to engage actively with the implementation of BDP2100 as youth are the future, it is important to take them into account and to hear what they have to say about the BDP2100. The main purpose of the session was to to incorporate the youth participants in the broader agenda of the Bangladesh Delta Plan 2100 along with allowing youth participants to share their voices and concerns in this respect.

Discussed core issues and Next steps

ICCCAD, together with WUR and EKN, has engaged with a number of young people from around the country, from different parts of Bangladesh to make them understand about different aspects of Bangladesh Delta Plan 2100 and reflect on the linkage to their own social engagement. Young people's involvement in the implementation phase of Delta Plan 2100 is crucial. They will be working in many fields, can contribute in many ways and BDP2100 will play an important role in their future.

The session was graced with interactive discussions among the youth participants and discussant panel members. One of the key issues that has been addressed in this session was the importance to be inclusive and how the youth could be meaningfully involved and how they can be empowered to participate in the decision-making process of different projects related to the Bangladesh Delta Plan 2100. The senior secretary of MoWR, Mr Kabir bin Anwar, positively responded to the question, and invited youth to be part of every water related project in future, by taking part in the project implementation committee. The other issues that

have been addressed are inclusiveness of youth in climate change adaptation activities, data availability in the country, chance of incorporating youth in nature-based solution adaptation, incorporating the experience of youth and knowledge in the education level in all sort of sectors like in institutional level or to rural people so that everyone can take part in with implementation.

Photo 14: Netherlands Ambassador H.E, Mr. Anne van Leeuwen, Discussant Panel members, moderators, speakers, and all youth action track participants after Certificate distribution

There are quite a good responses and solutions have been found from the panel members. If youth is there in decision making, they will give their own opinion, they will contribute to the plans and support and take part in implementation. Inclusiveness in the process, inclusiveness in the implementation, inclusiveness in the benefits for youth are always needed. The government has a commitment to implement the Delta Plan and for that, Delta Plan needs to collaborate with NGOs working in the different parts of the country addressing different socio-economic problems, environmental issues and so on. The older generation has fostered the Bangladesh Delta Plan as a gift to the young and next generation. The young generation has to design and implement that gift. The planning of the Delta Plan is over, but the implementation is just at the beginning. So the involvement of young people is needed for the implementation of the Delta Plan. BWDB has more than 900 project implementation committees which consist of local allies as well as youths. By the end of the Delta plan, the old generation might not be there, but this young generation will implement the plan accordingly by that time and benefit from the results. Climate resilience to disaster management is included in the educational curriculum and it is taught in schools and colleges that has helped building the climate resilient nation to some extent. It was discussed that it is essential to inform youth about BDP2100. As the young people are more sensitized about this particular Plan beyond the life and luxury of Dhaka, it is considered that nature-based solutions or sustainable solutions can be incorporated more in the life of youths. There is a constraint in data availability in our country and it has not been addressed in an significant and comprehensive manner yet, though the knowledge portal of BDP2100 is a good start. Data collection is a big challenge for the youth in our educational sectors. If we collect information from the youths across the country about climate change and how to manage the daily challenges they are having, it can be assumed that policy solutions will be far more sustainable.

2.5 Celebration of 50 years Bangladesh-Netherlands Friendship

At the end of the first day conference at the evening, a MoU was signed in between Md. Kawser Ahmed, Member (Secretary), GED, Planning Commission, Ministry of Planning and H.E, Mr. Anne van Leeuwen Ambassador of the Kingdome of The Netherlands Bangladesh in the presence of Mr. Kabir Bin Anwar, Senior Secretary, Ministry of Water Resources and other officials. The MoU was entitled to the formulation plan of Revitalization and restoration of Chalan Beel, Bangladesh.

Photo 15: MoU was signing at the end of the day-1 even on 26th May 2022

3 Day 2: 27th May 2022

3.1 High Round Table Discussion on Improving and Accelerating BDP 2100 Implementation

The Round Table discussion on Improving and Accelerating BDP 2100 Implementation was moderated by Mr. John Roome of World Bank. The session was attended by many participants of government, non-government, organizations, development partners, academicians, researchers, practitioners, etc. from both home and abroad. Among others, Senior Secretary, Ministry of Water Resources, Member (Secretary), Agriculture Division, Secretary, Ministry of Environment, Forests and Climate Change, Member (Secretary), GED, the Ambassador of the Embassy of the Netherlands, Country Director of World Bank, Chief Representative, Japan International Cooperation Agency (JICA), Bangladesh.

Discussed core issues and recommendations

The session discussed the various issues like creating enabling environment, mobilizing finance, strengthening capacity and other possible means for accelerating BDP 2100 implementation. In doing so, discussions centered around the issues of gaps of existing policies, strategies, regulations, institutions, investment, financing and capacity building, etc. The session noted that a lot of progress has been made in the implementation of BDP 2100, however, there remain a number of areas where further interventions and improvement are necessary. As regards to institution, the necessity of formation of a National Executive Committee to support Delta Governing Council, establishing Delta Wing within GED, setting up Project and Program Selection Committee (PPPSC) for screening and prioritizing BDP related projects came up in discussion. It was viewed that Members of the Planning Commission of the respective sector-divisions are needed to be included in the National Executive Committee of Delta Governing Council. The discussion put emphasis on formation of more committees or working groups, if needed, to facilitate implementation of this huge plan. It was also pointed out that Adaptive Delta Management (ADM) as an approach or technique is to be integrated in project appraisal system of Planning Commission.

It was stated in the round table discussion that due to lack of proper operations and maintenance (O&M) in water resource management, the built-in infrastructure become non-functional or destroyed well before the expected life year in one hand and the people do not get desired service on the other hand. The O&M mostly suffers from inadequate and untimely budget allocation. It was therefore proposed that sufficient budget allocation is required to be provisioned in the project proposal (DPP) to take care of the O&M of the newly developed infrastructure even after 3-5 years after the completion of the project, which can also be incorporated in the tender document as well.

The round table emphasized on orienting BDP 2100 among the people and strengthening capacity of the implementing agencies for accelerating the pace of BDP implementation. The audience was informed that GED, Planning Commission had been implementing a technical assistance project, namely, Supporting Implementation of BDP 2100 (SIBDP 2100) in cooperation with the Government of the Netherlands. With the help of this project, GED has undertaken a huge program of appraising BDP 2100 and providing training on approach, goals, strategies, investment programs of BDP. More than 500 officials of government ministries, divisions and agencies have already been trained on different aspects of delta plan. A good number of seminar and workshops have also been organized on BDP 2100. GED will continue its efforts of implementing this program in the coming days. The round table viewed that other ministry/division should undertake and implement similar capacity building programs.

Photo 16: High Round Table Discussion on Improving and Accelerating BDP 2100 Implementation

It was pointed out that though allocation to BDP related projects has increased from 0.8% of GDP in pre-BDP stage to 1.13 % of GDP in 2021-22 ADP, delta related projects are still under funded, and utilization of fund is also low. Private sector financing is yet to take place in BDP projects financing. The discussion emphasized on increasing allocation through diversification of financing sources and improving quality of spending of the allocation. The development partners present in the session including World Bank, JICA, EU, ADB, Netherlands, etc. reiterated their all-out support for improving and accelerating BDP 2100 implementation.

The Round table discussion therefore strongly recommended for removing gaps among existing plans, policies and strategies and aligning them with BDP 2100.The session flagged the need for establishing required institutions for accelerating the pace of BDP implementation, like setting up Delta Wing in GED, establishing National Executive Committee for Delta Governing Council and Project and Program Selection Committee (PPSC), was strongly recommended. Strengthening capacity of the implementing agencies

including enhancing institutional capacity had also been emphasized. In order to closing financing gap, the roundtable strongly emphasized on putting further efforts of mobilizing resources from diversified sources like domestic resource generation through enhancing taxes, private sector engagement, more allocation from development partners and specialized funds (e.g. Green Climate Fund), blended finance through guarantees, bonds, etc. Sequencing of projects, prioritizing ADP financing to BDP and operationalizing of Delta Fund had also been recommended in the round table discussion.

3.2 Concluding Session

3.2.1 Debriefing of the conference

Mr. Md. Tazul Islam, MP, the Hon'ble Minister, Ministry of Local Government, Rural Development and Co-operatives graced the concluding event as chief guest while Mr. AKM Enamul Hoque Shameem, MP, the Hon'ble deputy Minister, Ministry of Water Resources were present as special guest. Dr. Kawser Ahmed, Member (Secretary), GED, Planning Commission, Ministry of Planning presided over the session.

The concluding session began with a debriefing session which had created opportunity to share the outcomes of all the sessions and along with the implementation challenges. The chairpersons and moderators briefly presented outcomes of their respective sessions, which are summarized below:

The breakout session on Rivers and Estuaries mainly highlighted the dire need of preparing river stabilization/master plan for sustainable management of the rivers. It could be done basin-wise or on the basis of river system. Maintaining navigation facility is very challenging during monsoon due to high flow velocity. On the other hand, narrowing rivers is also critical as it has been a hindrance to the navigation, especially in the medium rivers. For river stabilization/master plan, prioritization should be given to major rivers like the Jamuna, Padma, Ganges, and Meghna Rivers. Prioritization of the interventions and locations is also needed for effective stabilization of the rivers and implementation should take place phase by phase for sustainable management of the rivers.

From the coastal breakout session, it has been clearly messaged out that mangrove afforestation for reduction of storm surge height, design of climate resilient coastal Polder, addressing salinity Intrusion, Adaptation Measures (Gorai River Restoration), Engineering and nature-based measures, Polder development program, effective Operation and Maintenance, structural adaptive measures are required for the sustainability of the coastal area.

From the breakout session on urban it has been revealed that rapid implementation of small scale interventions involving LGIS is the prime need for urban development. For proper and balanced development of the urban sector good planning and effective coordination are crucial at local level including the connection with planning at the higher institutional level. It is important that for upscaling of small-scale initiatives (such as upscaling of Urban Demonstrators) criteria for selecting priority of the projects should be appropriately devised and practiced maximizing synergies with other ongoing and planned urban infrastructure projects and that the community is engaged in the process.

In climate-smart and resilient agriculture necessity for capacity building and training of Agri-producers on new production and post-production methods had been emphasized in the agriculture transformation break out session. The need of coordination for a policy driven revitalization of agriculture, in which farmers are acknowledged for their contributions to feeding the nation and involving youth in agricultural adaptation system have also been highlighted. Another important issue that was flagged in the session is horizontal and vertical coordination among the government, development partner and private sector entities for effective implementation of projects/programs taken in this sector.

The valuing water session focused on awareness building on water use in each segment of the society and estimating shadow prices of water in prioritizing and selecting projects and allocation of funds. The event stressed on setting up institutional arrangement for collecting water data and appropriate incentive mechanisms for private sector for ensuring right use of water.

Photo 17: Debreifing and closing session

3.2.2 Next step

The conference has contributed for the better understanding of Bangladesh Delta Plan 2100 issues and challenges of implementation. The fruitful outcome of the conference has enlightened the implementing agencies in such way so that they can accelerate the future actions in a more coordinated and integrated way to make safe, prosperous delta for the future generation. Wider and greater participation from the all the Development Partners expected for accelerated implementation of the BDP2100. General understanding is that the water resources systems and projects need to be rationalized focusing on the future development driven demand and climate change. The river system needs plans for stabilization as well as coast needs the climate resilient adaptive measures. The audience agreed to proper and balanced development of the urban sector for good planning and effective coordination along with the need of coordination for a policy driven revitalization of agriculture. Moreover, the outcome of the conference reflected on the facts of creating more integrated holistic approach for climate change adaptation. However, it was seen that the spontaneous participation of the participants from different government, International and private organizations made the conference a successful one.

For such success in the 1st International Delta Conference, it was agreed to organize the second international conference on February, 2023.

3.2.3 Conclusion

The two-day Delta Conference had been an eyeopener for all the policy makers, implementing agencies, sectoral institutions, development partners and private sector regarding the issues and challenges of Bangladesh Delta Plan 2100. It has been clearly mentioned that without the implementation of Bangladesh Delta Plan, Bangladesh delta cannot be a resilient and prosperous one. In the concluding events, the speakers including the chief guest and the special guest echoed the need and urgency of implementing Delta Plan for building climate resilient prosperous Bangladesh and reiterated their commitment and all out support for its full-scale implementation. It is stated said that government has taken the necessary steps by solving the navigation problem, restoring the urban area, building safeguard around coast area for making a prosperous delta for the future generation, however, there is a long way to travel for full scale implementation of this mega plan. The speakers viewed that organizing this international seminar was a very timely initiative and had been found effective in delivering and realizing needed outputs. The session highly emphasized on following up and implementation of the recommendations and suggestions made in the conference, particularly enhancing coordination, and collaboration among all the stakeholders, alignment of plan, policies and strategies of the government and development partners with BDP 2100, capacity building, institutional and policy reforms, investing more resources from both domestic and eternal source, etc. The plan, the BDP2100 is ready for implementation, now is the time for action, need activities G to G- Government to Government and B to B- Business to Business involving all stakeholders. The session also suggested for arranging similar event and dialogue for sensitizing the stakeholders at all levels about BDP in one hand and accelerate the pace of its implementation on the other.

The 1st International Conference emphasized on the plan, accelerated implementation of the BDP2100, which need activities at G to G - Government to Government and B to B - Business to Business involving all stakeholders.

This 2-day seminar was then ended with vote of thanks and appreciations from Dr. Kawser Ahmed, Member (Secretary), GED, Planning Commission, Ministry of Planning.

Annex A: Program Schedule of the Conference

Kingdom of the Netherlands

Detailed Program Schedule:
Bangladesh Delta Plan 2100 International Conference:
'Issues and Challenges of Implementation'

Venue : Pan Pacific Sonargaon Dhaka
Date : 26 & 27 May 2022

Day 1: 26 May 2022, Morning:

Time	Activity	Remarks
08.30 am	Registration	
09.30 am	Guests take their seats	
	INAUGURAL SESSION	
10.00 am	Arrival of the Hon'ble Prime Minister	
10.00 am	Opening Speech by the Chairperson	Dr. Shamsul Alam, Hon'ble State Minister, Ministry of Planning
10.05 am	Speech by the Guest of Honor	H.E. Anne van Leeuwen, Ambassador of the Kingdom of the Netherlands in Bangladesh
10.10 am	Speech by the Guest of Honor	Mr. Zaheed Farooque, MP, Hon'ble State Minister, Ministry of Water Resources
10.15 am	Speech by the Special Guest	Dr. Muhammad Abdur Razzaque, MP, Hon'ble Minister, Ministry of Agriculture
10.20 am	Speech by the Chief Guest	**H.E. Sheikh Hasina, MP** Hon'ble Prime Minister Government of the People's Republic of Bangladesh
10:45 am-11:30 am	**COFFEE & TEA BREAK**	
	PLENARY SESSION	
11.30 am	Panel Dialogue: Institutional Challenges & Opportunities with International Lessons	**Moderators:** - Mr. John Roome, World Bank - Mr. Professor Saleemul Huq, ICCCAD
01.00 pm	Explanation on Breakouts Sessions and Side Event	Masters of the Ceremony
1:15 pm-2:30 pm	**LUNCH**	

After the lunch break, all participants join their respective parallel sessions.

Kingdom of the Netherlands

Detailed Program Schedule:
Bangladesh Delta Plan 2100 International Conference:
'Issues and Challenges of Implementation'

Day 1: 26 May 2022, Afternoon:

Time	Activity	Remarks
	PARALLEL BREAKOUT SESSIONS	
2.30 pm-4.00 pm	Breakout Session on Coastal Zone **Venue:** Ball Room, Pan Pacific Sonargaon Dhaka	**Chairperson:** -Mr. Zaheed Farooque, MP, Hon'ble State Minister, Ministry of Water Resources **Moderator:** -Mr. Md. Zahirul Haque Khan, Deputy Executive Director, Institute of Water Modelling
	Breakout Session on River Systems **Venue:** Padma, Pan Pacific Sonargaon Dhaka	**Chairperson:** -Mr. Kabir Bin Anwar, Senior Secretary, Ministry of Water Resources **Moderator:** -Mr. Malik Fida A Khan, Executive Director, Center for Environmental and Geographic Information Services
	Breakout Session on Urban Areas **Venue:** Chitra, Pan Pacific Sonargaon Dhaka	**Chairperson:** -Mr. Md. Tazul Islam, MP, Hon'ble Minister, Ministry of Local Government, Rural Development and Co-operatives **Moderator:** -Mr. Chris Zevenbergen, IHE
	Breakout Session on Agriculture Transformation **Venue:** Surma, Pan Pacific Sonargaon Dhaka	**Chairperson:** -Dr. Shamsul Alam, Hon'ble State Minister, Ministry of Planning **Moderator:** -Mr. Robert D. Simpson, Country Representative, FAO
	Side-event on Valuing Water Initiative **Venue:** Meghna, Pan Pacific Sonargaon Dhaka	**Chairperson:** -Ms. Sharifa Khan, Member (Secretary), Agriculture, Water Resources and Rural Institution Division. **Moderator:** -Mr. Md. Delwar Hossain, DG, WARPO
4.00 pm-4.15 pm	**COFFEE & TEA BREAK**	
4.15 pm	Side-event on Youth Panel Dialogue **Venue:** Ball Room, Pan Pacific Sonargaon Dhaka	**Chairperson:** -Dr. Shamsul Alam, Hon'ble State Minister, Ministry of Planning

Kingdom of the Netherlands

Detailed Program Schedule:
Bangladesh Delta Plan 2100 International Conference:
'Issues and Challenges of Implementation'

Time	Activity	Remarks
		Panel Discussant: -Mr. Mohibul Hassan Chowdhoury, MP, Hon'ble Deputy Minister, Ministry of Education; -Mr. Kabir Bin Anwar, Senior Secretary, MoWR; -Dr. Saleemul Huq, Director, ICCCAD **Moderator:** -Ms. Roos Middelkoop, EKN -Ms. Benzir Huq Mou, SIBDP -Ms. Alexia Sotiriadou, Delta Context
5.15 pm	Concluding Remarks of Day 1	Master of the Ceremony
5.20 pm	Networking Reception	Offered by NL Embassy for 50 years of Cooperation with Bangladesh

Day 2: 27 May 2022, Morning:

Time	Activity	Remarks
9.15 am-10.30 am	Round Table Discussion on Improving and Accelerating BDP 2100 Implementation **Venue:** Padma, Pan Pacific Sonargaon Dhaka	**Moderator:** -Mr. John Roome, World Bank
10.30 am-11.00 am	**COFFEE & TEA BREAK**	
CONCLUDING SESSION		
11.00 am-12.45 pm	Debriefing of All Sessions and Concluding Program of the Conference (10 minutes for Each Session) Debriefing will be done by the Moderators	**Chief Guest:** -Mr. Md. Tazul Islam, MP, Hon'ble Minister, Ministry of Local Government, Rural Development and Co-operatives **Special Guest:** -Mr. A K M Enamul Hoque Shameem, MP, Hon'ble Deputy Minister, Ministry of Water Resources **Chairperson:** -Mr. Pradip Ranjan Chakraborty, Secretary, Planning Division
12.45 pm-1.00 pm	Final announcements with Vote of Thanks	Master of the Ceremony
1.00 pm	**LUNCH**	

Annex B: Bangladesh Delta Plan 2100 Conference paper

BDP 2100 Conference Paper

1 Introduction

The 1st International Conference on the Bangladesh Delta Plan 2100 (the BDP 2100 Conference) provides a series of events, which will take place in May 2022. The BDP 2100 Conference aims to promote discussion on Bangladesh's Delta Plan implementation challenges, alignment and foster possible actions for ensuring proper implementation of the Delta Plan. The BDP 2100 Conference also plans to connect relevant national and international communities (Governments, scientists, businesses, students and other stakeholders) to the Bangladesh Delta Plan 2100 (BDP 2100) implementation.

The BDP 2100 Conference will play an important role in addressing the issues and challenges involved, given the ambitious long-term Delta Plan Vision: 'Achieving a safe, climate-resilient and prosperous delta.' The Plan focuses on water and food security, socio-economic development, and environmental sustainability while reducing vulnerability to natural disasters, climate change, and other delta-related challenges. It supports Bangladesh's ambition to become an upper-middle-income economy by 2030 and sees upon all water-related challenges and efforts to achieve the Delta Vision and Goals. Now that the implementation of the Delta Plan has started, this BDP 2100 Conference will reflect on identified issues and challenges of implementation and learning insights of the process. This will lead to meaningful outcomes for further implementation and effectively contribute to Bangladesh's economy and society.

The BDP 2100 Conference has been planned based on a series of discussion sessions with Government of Bangladesh (GoB) officials and of preparatory events from October 2021 to May 2022. The sessions and events were focused on issues and challenges of BDP 2100 hotspots Major River Systems, Extended Coastal Zone, Urban Areas, and on Agriculture and Funding.

A 'Youth Action Track'-side program connects the next generation to the Delta Plan for building awareness and taking it further, especially concerning adaptation to climate change.

The BDP 2100 Conference is an initiative of the Government of Bangladesh and renowned partners: the Embassy of the Kingdom of The Netherlands in Dhaka, The World Bank Group, Asian Development Bank, Japan International Cooperation Agency and Embassy, the EU Embassy in Dhaka and FAO. The BDP 2100 Conference Organizing Committee consists of GoB representatives from General Economics Division (GED), Planning Commission, while the Delta Governance Council will also be involved for supervision, guidance, monitoring and decision making.

The content legacy is expected to address implementation issues for overcoming the huge challenges of implementing BDP 2100 and to contribute to enhancing knowledge and understanding of climate change adaptation in practice. These results will be included in the Bangladesh Delta Plan 2100 Knowledge Portal ***www.bdp2100kp.gov.bd*** and in a publication presenting the results and insights of the BDP 2100 Conference.

The BDP 2100 Conference will be an annual event to share knowledge on latest developments and discuss aspects of implementation and climate change adaptation.

1

2 Challenges in the Development Context

Bangladesh is currently confronted with enormous challenges in managing its water resources and achieving the long-term delta vision of "achieving a safe, climate-resilient, and prosperous delta." Due to the deltaic formation, configuration of the rivers, coastal zone and climate change, Bangladesh is ranked as the sixth most vulnerable country worldwide in terms of risks from natural hazards. Despite being one of the most vulnerable countries due to climate change, Bangladesh develops a fast-growing economy with an average 7.0% growth during 2009–2020. Along with ensuring growth, Bangladesh has also achieved a fall of poverty incidence from 35.0% to 20.5%.

While water and food security belong to the main objectives of water resources management, it is nowadays also necessary to fulfill the water needs of all different types of water users. Water management in this complex environment with different kinds of water users is akin to dealing with conflicting interests between agriculture and aquaculture, lower and higher land, landless and landowners, water safety and water transport or industrial and domestic water uses. Along with its water user dynamics, Bangladesh also needs to constantly deal with the visible effects of climate change.

2.1 Overview of Delta Challenges

Bangladesh focuses since long on water resources management and related disasters risk reduction (DRR). Despite successes, Bangladesh faces considerable development challenges posed by its unique deltaic geographic position, dynamics and associated vulnerability.

Cyclones and Storm Surges: Low-lying areas of the coastal zone are highly vulnerable to cyclones, which pose a serious threat to the lives and properties of the region. Nearly every year, cyclones hit the country's coastal zone, and on average, a severe cyclone strikes the country every three years. The intensity of cyclonic storm surges and the depth and extent of storm surge-induced coastal inundation are likely to increase in changing climate through rising sea surface temperature (SST) and sea level.

Sea Level Rise (SLR) and Salinity Intrusion: Sea level rise and salinity intrusion are key challenges for the Bangladesh delta. IPCC predicts sea level rise up to 1 meter for low to high emission scenarios in 2100 for the Bay of Bengal. Analysis indicates that under extreme scenarios, flooding extent will increase up to 6% and 8% from the base (2005) in the central part of the Coastal zone by 2050 and 2100, respectively. By 2050 and 2100, the west portion of the coastal region will face 5% and 6% more coastal flooding.

Floods: Flood is a recurrent phenomenon in Bangladesh that occurs almost every year. Three mighty rivers, the Ganges, Brahmaputra (or Jamuna), and Meghna, meet in central Bangladesh, forming the world's largest delta. Consequently, most of the country consists of huge flood plain and of which, around 70% of the total area is less than 1 meter above sea level. Bangladesh experiences heavy monsoon rains and frequent tropical storms in the coastal zone. On average, an estimated 20-25% of the country becomes inundated due to encroachment, river spilling and drainage congestion. An extreme situation arises when the three major rivers (Ganges, Brahmaputra, and Meghna) simultaneously reach their peak discharge. Because of climate change, the rainfall pattern in Bangladesh will be more variable and erratic in the future and flooding is expected to increase.

Waterlogging: Waterlogging in urban and rural areas is caused by a number of factors, including unplanned and ineffective drainage infrastructure provision in local infrastructure. Besides, the encroachment on wetlands in urban and rural areas, and the hampering of tidal flows in the coastal

area, especially in the southwest (Satkhira, Jessore, Khulna, and Bagerhat) and southeast (Noakhali, Feni) coastal zones is also contributing to the water logging issues. This region of Bangladesh is characterized by numerous morphologically active tidal rivers, which are the main drainage network for coastal polders and low-lying beels. Thus, the natural drainage pattern of the area is predominantly characterized by the influence of the incoming tide from the sea together with upstream discharges. When unplanned developments occur, the chance of water logging is increasing.

Riverbank Erosion: The morphology of the country's rivers is highly dynamic, and riverbank erosion is also a regular phenomenon, particularly along the banks of the main rivers. Between 1973 and 2021, erosion along the Jamuna, Padma and Ganges Rivers is 93,965 ha, 33,585 ha and 30,300, ha respectively. While Lower Meghna eroded about 123,000 ha during the period 1973-2020. A major reason for the increase in eroded area is that the discharges in the rivers are increasing. Also here the tidal regime plays an important role. Data in the last 25 years ago suggest, that the about 9500 ha of land eroded in the year 1995 along the Jamuna, Ganges and Padma Rivers. However, the statistics of recent times provide the clear picture of declining the erosion rate which is within 3000 to 4000 ha per year. Although the erosion is decreasing, it is still a concern which needs to be properly managed.

Droughts: The droughts occurring in Bangladesh are not meteorological droughts but rather agricultural droughts, which could also be termed as severe moisture stress. In the drought-prone agro-ecological regions, the period of dry days ranges between 32-48 days, starting from 24 March to 21 May. During this period, the temperature rises more than 40°C for 5 to 15 days.

Upstream Developments: Being highly dependent upon developments upstream, the diversion, use, or storage of flows from the Transboundary Rivers is of major importance to Bangladesh. International developments (i.e., the Indian River-Linking Project or IRLP) are expected to have a notable and possibly negative impact on the dry season flow of Bangladesh. Impacts on dry and monsoon season flow, salinization, siltation of rivers, and sediment deposition in the Meghna estuary have important implications for Bangladesh. These, in turn, have a direct impact on the ability of the (coastal) floodplains to keep up with the sea-level rise and increasing salinity in the Meghna estuary.

Water Quality: In Bangladesh, about 12.6% of the supply water contains arsenic. A recent study (Flanagan et al. 2012) reports that over the next 20 years, arsenic-related mortality in Bangladesh (1 of every 18 deaths) could lead to a loss of US $12,5 billion, assuming a steady economic growth and an unchanged population exposure to arsenic contamination. Further, Bangladesh's rapid industrialization and urbanization have increased unregulated water use and water pollution.

Soil and Environmental Pollution: Soil pollution is another environmental pollution that threatens the ecosystem and human health but is hardly recognized in different policy documents. Currently, Bangladesh does not have any authentic monitoring mechanism of soil pollution. Soil Resource Development Institute (SRDI) monitors soil quality with respect to soil fertility. Department of Environment regularly monitors air and water quality, but DoE does not have any program for soil pollution monitoring.

2.2 Impact of Climate Change

The recent IPCC report (2022) indicates current expectations about climate change and consequences. The following impacts of climate changes have already been observed in Bangladesh: summers are becoming hotter, monsoon irregular, untimely rainfall, heavy rainfall over short period causing waterlogging and landslides, very little rainfall in the dry period, rising sea level and salinity intrusion,

increased river flow and inundation during monsoon, increased siltation. Climate change will affect many sectors in Bangladesh, including water resources, agriculture and food security, ecosystems and biodiversity, human health, and coastal zones. The Bangladesh Delta is more at risk from climate change than almost anywhere else in the world, adaption to climate change is a must.

3 Achievements after Approval of BDP 2100

The mentioned challenges were addressed in comprehensive analysis resulting in 26 Background Studies. During this process, many stakeholder and consultation sessions were organized. The plan has taken delta conditions into cognizance and has proposed a host of initiatives that would contribute to the safety and development of the country. The BDP 2100 strategies are prepared following Adaptive Delta Management (ADM) principles; they are adaptive in the sense that they need periodic review and updates which takes place in the 'Five Year Plan' cycle based on the updated climate data, progress and development needs. The BDP Investment Plan includes 80 projects which have been identified and selected based on the issues and challenges, delta vision, goals, future scenarios, and by stakeholders and experts preferred strategies. The Bangladesh Delta Plan 2100 (BDP 2100) was approved by the National Economic Council (NEC) on 4 September 2018.

See the blue booklet BDP 2100 (abridged version). The Bangladesh Delta Plan 2100 can be downloaded from the BDP 2100 Knowledge Portal www.bdp2100kp.gov.bd or Planning Commission website www.plancomm.gov.bd/

3.1 Implementation Achievements so far

BDP 2100 related projects, interventions, programs, and strategies have already been considered priority issues in the guidelines of Annual Development Program (ADP) formulation. Besides, in the proposed revised guidelines for the development project proposal appraisal document, necessary changes have been incorporated to include BDP 2100 related issues. This revised guideline is expected to be soon approved by the GoB.

Institutional Framework

Delta Governance Council (DGC): the DGC has already been formed as a high-level inter-ministerial Council of decision-makers on BDP 2100 matters. It has been constituted with the Prime Minister as Chairperson and the Minister of Planning as Vice-Chairperson while other members are the most in BDP 2100 involved ministers. A Project/Program Selection Committee (PPSC) will advise the DGC; the proposal for a PPSC is with GED for approval.

Delta Wing: According to decisions on BDP 2100, a dedicated Delta Wing will coordinate and monitor the BDP implementation. GoB assigned the GED of the Planning Commission the responsibility of coordinating BDP 2100 implementation, and currently, the International Economics Wing of GED is looking after the related works of BDP 2100. To develop the Delta Wing, GED has submitted a proposal to the Ministry of Planning. In the meantime, the Ministry of Planning has taken the initiative to bring structural reforms to the Bangladesh Planning Commission and has integrated the proposal of establishing Delta Wing in this structural reform initiative. This proposal is under consideration by the Ministry of Public Administration.

While the overall structural reform initiative may take time, the International Economics Wing of GED may be strengthened through internal management and may be renamed or declared as Delta Wing

on an interim basis. Such initiative will play a crucial role in developing the Institutional Framework of BDP and facilitate the implementation process of BDP 2100.

Mainstreaming of BDP 2100 in the Five Year Planning cycle: from national coordination and funding points of view, BDP 2100 and investment package have been incorporated in the 8th Five Year Plan, which gives direction and priorities for this plan period. The Planning Ministry indicated the investment package with priority projects to ERD and implementing ministries.

Focal Point Network: BDP 2100 is a holistic plan and covers multiple sectors. For coherent implementation, a multi-sectoral coordination mechanism is required. GED established Focal Points in involved ministries/ agencies to ensure coordination of BDP implementation, it is essential to include the focal point members in the Delta Wing, to work together with different ministries and agencies in delta project planning. As the Ministry of Water Resources/ BWDB already did, the Focal Points can be modified into Delta Cells as a ministries' planning entry point for BDP 2100 implementation. In interaction with the Focal Points and Delta Governance Council, GED/ Delta Wing can select priority delta projects, to be further prepared by involved ministries.

Water Institutions: BDP 2100 focuses on implementing Participatory Water Management Rules (2014) for ensuring stakeholders' representation, participation and accountability. Despite the importance of Participatory Water Management, community members currently have limited participation in water infrastructure management and development. In many cases, instead of regular O&M, local people get involved in the maintenance process after considerable damage occurs. Often, these last-minute attempts do not bring meaningful results. In November 2021, the SIBDP 2100 arranged a national level Workshop on "Participatory Water Management: Challenges and Way Forward" which provided useful guidelines. SIBDP prepared an institutional analysis and policy document for establishing local/ regional participation and Platform of Water Users Associations. Water Institutions should become sustainable while adequate support and forms of cost sharing for water related services are under consideration.

Results-Based Monitoring and Evaluation (M&E): The BDP 2100 goals and 8th Five Year Plan targets constitute the Development Results Framework (DRF) for BDP 2100. The M&E approach provides a decision-making structure that fosters communication between implementing agencies and decision-makers. The M&E system is envisioned to be a living process and would need to remain flexible to respond effectively to unanticipated events. A multi-sectoral web tool for M&E will be developed as soon as the Delta Wing has been formed.

Knowledge Portal: The Knowledge Portal has been developed under the SIBDP 2100 with the overall objective to create a common and inclusive database and knowledge hub on administrative, basic data, hydrology, morphology, geology, floods, surface and ground water, droughts, cyclone, storm surges etc. Besides, the knowledge portal will also provide data on navigation, water supply, and sanitation, spatial planning and land use, environment, agriculture, fisheries, socioeconomic etc. Currently, the database has 84 data layers and is still under development. The web address of the knowledge portal is www.bdp2100kp.gov.bd.

Regional Implementation Programming: project implementation needs to be prepared in the context where the intervention takes place, in terms of physical context as well as institutional and socio-economic context. A river basin offers a coherent set of physical social and economic characteristics. BDP 2100 implementation is therefore elaborated in Basin Wise Implementation Programs, following hydrological regions. Besides, for proper implementation of the BDP investment plan, it is essential to focus on feasibility study of a project. Usually, after the feasibility study, the funding source for project

implementation is considered, and a Development Project Proposal (DPP) can be prepared. The BDP considers different funding sources for implementing delta projects, including the GoB fund, development partner support, Public-Private Partnership (PPP), and Green Climate Fund (GCF). However, it is impossible to access most funding sources without proper feasibility studies. For instance, it is mandatory to have a detailed feasibility study for applying for GCF funding. A similar concept is also applicable for PPP projects. As next step to Programming, feasibility study and its funding are essential.

Bangladesh Metamodel: This is a decision support tool to provide quantitative information for investment planning of BDP 2100. The metamodel describes the behavior of the entire water system and quantifies the various impacts of measures through the analysis and evaluation of project interventions. It is a high level integrated summary of detailed sectoral models based on the existing data and knowledge, used at the planning level with less detail to support development, selection, prioritization, and sequencing of interventions. The Bangladesh Metamodel incorporates models from the physical and socioeconomic domains: it provides information of the impact of interventions on the state of the water system and impact on the socioeconomic conditions. The Metamodel is being applied in the river basin and coastal zone programming.

Advisory and Guidance Committees: GoB has also formed different advisory and guidance committees have already been formed, and these committees are well-functional. For instance, an inter-ministerial Project Steering Committee (PSC) has already been established to review the overall progress and provide policy guidelines. Project Implementation Committee (PIC) and Technical Advisory Committee (TAC) have been established to guide the project activities. A Focal Point network has already been formed to promote coordination and collaboration between GED and different delta-related ministries and agencies.

3.2 Delta Fund and Funding

The BDP 2100 projected that Delta spending would reach 2.5% of GDP annually by FY2025 (the terminal year for the 8FYP), comprising 2% of GDP for investment purposes and 0.5% of GDP for O&M purposes. With the COVID 19 pandemic, the targeted revenue collection may not be realized by GoB.

After the approval of BDP 2100 in 2018, Bangladesh has gradually increased its delta investment. A recent review of the public sector's investment in delta projects through the ADP revealed that public sector investment in delta-related projects has gradually increased from 0.75 % GDP in FY 2017-2018 to 1.13 % of GDP in FY 2021-22. The resource gap remains high as current public spending on BDP 2100 hovers around 1.1% of GDP. The key question is how Bangladesh will obtain the necessary funding for implementing the BDP 2100. Support from IFI's and development partners is needed as well as options for private sector contribution and cost recovery or taxation.

Delta Fund: For realizing BDP 2100 investment plan, the implementation of the Delta Fund is crucial. The Bangladesh Delta Fund concept can be visualized through a two-stage process. In the first stage, the Delta Fund could be conceived as a policy to allocate resources in an incremental way to finance all Delta-related spending, both investment and operations and maintenance (O&M). This spending will be based on the principle of annually investing at least 2.5% of GDP in implementing the BDP 2100 by 2025. Of this, approximately 2% of GDP would be for new investments, and 0.5% of GDP will be for operations and maintenance (O&M) purposes. Along with the public sector, the private sector will also contribute by investing 0.5% of the GDP. Delta management's resources can then be monitored and assessed against the BDP 2100 spending target. All public, private, domestic, and external investments would be pooled together while assessing whether allocated resources meet the target sets.

In the second stage, the experience with actual Delta financing over the next 5 years can be examined to assess whether the current arrangement is delivering the needed results. If it is not feasible to achieve the required process through the current mechanism, the option of establishing an ear-marked Delta Fund like the Dutch Delta Fund can be re-visited, along with the need for an appropriate legal and institutional framework. This legal and institutional framework will be necessary for establishing and managing the Bangladesh Delta Fund.

Cost Recovery and Cost Sharing: besides BDP 2100, other societal sectors are facing increasing financing needs. Therefore, it is essential to fund BDP 2100 investments through a well-structured cost recovery policy based on the beneficiary pays principle. As cost recovery is a new concept in Bangladesh, the effective application of this policy will take time, but this policy must be pursued vigorously. Additionally, it is essential to ensure that a significant part of the funding is financed from the private sector and the global funds for environment and climate change adaptation, including the Green Climate Fund. Attempts are being initiated towards mobilizing resources from GCF and the Private sector through PPP.

PPP: from the 2.5% of GDP, 0.5% is expected from private sector investment. Through specific water services delivery related projects, GoB wants to introduce private sector financing in the water sector. SIBDP explored several options. However, private sector parties are careful to invest in the involved public sectors due to uncertain returns on investment.

GCF: for addressing challenges presented by climate change and natural hazards, Bangladesh needs to access external funding from global climate funds like GCF. So far, Bangladesh has achieved GCF funding in only five projects. SIBDP 2100 has already developed several GCF project concept notes, following the GCF-formats and submitted these to GED.

4 Information on the Breakout Sessions

The BDP 2100 Conference will have six thematic sessions covering important delta priorities and hotspots, apart from an inaugural session, plenary youth panel and a closing session. The thematic sessions are designed to discuss Bangladesh's existing strategy for fulfilling different delta priorities and current challenges. Each session starts with a brief presentation on the concerned theme with issues or challenges of implementation. The presentation will be followed by a discussion session where the participants will interact in various forms with one another and discuss the aspects of the presented topic and probable measures to move forward. The following themes will be discussed.

- ***Coastal Zone***

Objective: While the coastal zone accounts for approximately 30% of Bangladesh's GDP, the zone is already witnessing the effect of climate change. Coastal populations are extremely vulnerable to climate change, and sea level rise is expected to amplify coastal flood risk in the future. For promoting vulnerable community's resilience, Bangladesh needs to make considerable climate change adaptation investments in this region, and the traditional public sector investment is quite inadequate to fulfil Bangladesh's adaptation investment requirement. The thematic session will discuss the implementation issues and challenges in Bangladesh's coastal zone and how, together with partners and the private sector to implement measures/ projects to deal with the effect of climate change in coastal regions.

Implementation Challenges: The coastal zone is full of natural resources and vulnerable due to natural calamities and adversities of climate change. Coastal protection is a must given the frequent cyclones, storm surges, floods, waterlogging, sea erosion, and salinity intrusion which have a huge impact on the

coastal zone's people and livelihood. Previously different cyclonic storms severely affected Bangladesh's water infrastructures and polders. Bangladesh's river system in coastal areas is dynamic with the frequent shifting of riverbanks. The region constantly shapes and reshapes the landscape by destroying and creating lands through erosion and accretion. There are visible sites of sea erosion in the coastal zone, like Cox's Bazar and Kuakata.

In response to these challenges, embankments were built throughout the coastal zone to minimize the effect of cyclones and flooding. Through embankments, polders are created, which along with their canals and sluice gates, have been playing a key role in minimizing the coastal communities' struggle against flooding and cyclone. Till 2018, about 139 polders have been implemented by the Bangladesh Water Development Board (BWDB) of the Ministry of Water Resources (MoWR). However, this transformation has also contributed to the decline in inland fisheries by reducing the scope for fish movement and conversion of seasonal flood plains into paddy land. While the planning and construction of these embankments is a complex and time-consuming process, the O&M of these infrastructures is creating additional challenges for Bangladesh.

Most of the existing polders were constructed in coastal zones during the sixties to protect people from regular high tide (flooding) and saline water intrusion with adequate drainage facilities. Few of the polder embankments exposed to sea also protects the coastal zone from cyclone surge. However, these polders are not climate-resilient and may not be effective in addressing the potential impacts of climate change. Moreover, the internal drainage channels have become silted up and need to be re-excavated. Water management within the Polders through "In Polder Water Management" is yet to be properly addressed.

With the completion of the Payra port and Padma bridge, the coastal region will experience further industrialization and change in land-use patterns. This changing land use pattern will lead to an increased conflict of interest among different user groups, and Bangladesh needs to carefully plan this upcoming industrialization in the coastal region. The same counts for the ambition of GoB to reclaim large areas of land in the coastal zone for multi sectoral purposes.

GoB Strategies for Addressing the Existing Challenges:

The coastal zone and polders are high priority areas for the GoB, and in line with this, BDP 2100 provided specific strategies for coastal zone management including coastal protection, polder management and disaster management. In BDP 2100, GoB focused also on increase of drainage capacity and reduction of flood risk to increase both water and food security in the coastal zone. In addition, BDP 2100 highlighted the importance of balancing water supply and demand for sustainable growth and reclaim new land in the coastal zone. GoB has high expectations of reclaiming new and well protected land in relation to the needs of the expanding population and economy.

The specific objective for the Coastal Zone Hotspot is to discuss the way forward for coastal resilience interventions in Bangladesh, in line with the BDP 2100, and informed by lessons learned. The expected outcome of the discussion is a brief paper written by the involved stakeholders together summarizing key outcomes of the discussion and potentially a road map for 2-3 no-regret interventions. Key issues related to coastal resilience in Bangladesh that will be addressed are the following:

1. Coastal resilience: where do we come from, where are we now and what is to be expected in the future?
2. Next coastal program: what are the plans, how to prioritize and finance priorities, and align these with BDP 2100?

3. Coastal interventions: what are challenges for implementation and sustainability of interventions and how to overcome these?
4. Coastal innovations: how to become more people-centric, how to leverage modern technology and approaches like nature-based solutions and more risk-based approaches?

- ***Major Rivers and Estuaries***

Objective: This session will address implementation related approaches for managing the Ganges-Padma and the Brahmaputra-Jamuna River Systems. These can include sediment management, river dredging for establishing/ maintaining connectivity, dredging materials management, and environmental aspects such as maintenance of e-flow and ecosystems considerations. In addition, discussions will be held on key topics such as river stabilization plans, necessary dredging and land reclamation in the context of BDP 2100. Besides, the adaptive delta management and aligning river interventions like the Jamuna economic corridor development and FRERMIP (Tranche-2) will also be discussed. Separate emphasis may be given to transboundary initiatives with upper riparian states. Climate aspects will be considered during discussions, and generated ideas will be related to the current BDP 2100 adaptation strategies.

Implementation Challenges: As Bangladesh is located in the low-lying delta of these mighty rivers, water resources management is complex and highly sensitive to upstream developments. Within Bangladesh also, these river systems display varying hydro-morphological characteristics, being distributed within separate hydrological regions. The northern tributaries of Ganges and Brahmaputra are dominated by the fluvial (fresh water) processes; while the southern portion of Ganges distributaries are tide and wave dominated. On average the erosion rate in the Jamuna, Ganges and Padma Rivers in the last 48 years are 1,960 ha, 630 ha and 700 ha respectively. The various issues that arise are thus best addressed through and integrated delta-scale planning approach involving river basin-wise planning and management.

Bangladesh is prone to climate induced disasters, altering local climate regimes and seasonal shifting resulting in impacts in the form of segregated droughts in the northwest and southwest region, increased frequency and intensity of cyclonic storm events, sea-level rise, salinity intrusion, increased intensity and temporal shifts in flash floods in the north-eastern regions and increased duration of monsoon flooding all throughout the country. The flood of 2020 affected 5.4 million people in the northern, central, and north-eastern parts of the country, flooding approximately 37 percent of the country across 33 districts. This year, early heavy rainfall in the north-eastern part of the country already causes severe flooding and damage.

How Bangladesh is addressing the Existing Challenges: GoB has prepared the Bangladesh Delta Plan 2100, where Rivers and Estuaries have been kept as a separate hotspot area. BDP 2100 also emphasized on enhancing the navigability of inland waterways to reduce travel time and transport costs. Effective river management requires integration within the different socio-economic sectors of the country and needs coherent transboundary river management. Regional cooperation with the upper riparian country is very much needed as there are 57 transboundary rivers in total, of which 54 with India and the remaining three with Myanmar.

In addition to that, Bangladesh Water Development Board (BWDB) has prepared the River Stabilization Plan of the Jamuna and Padma Rivers in 2016 under the project Flood and Riverbank Erosion Risk Management Investment Program (FRERMIP) Tranche-1 where a total of 1,587 km^2 (1,120 km^2 and 467 km^2 along the Jamuna and Padma Rivers respectively) of the land area will be reclaimed by channelizing

the rivers with river training structures. It is to be mentioned that already 21 km^2 of land has been reclaimed at Harirampur, Manikganj, along the left bank of the Padma River. Besides, riverbank protection structures were also constructed at Chauhali and Zafarganj along the left bank of the Jamuna River under this project.

To translate the above ambitions in concrete steps, an attempt will be made to answer the following questions:

1. River stabilization: What needs to be done to stabilize major rivers with current interventions in a consistent way over time, to reach effective river management considering the environment?
2. Land reclamation: How to utilize these interventions for land reclamation along the rivers including climate and nature based approaches?
3. Operations and Maintenance: What do above items mean for O&M?
4. Transportation: How to stimulate transportation and logistics on the major rivers in relation to inland waterway transport, inland ports and seaports?
5. Institutional: which institutions oversee the above items and which (joint) actions and funding are needed?

- ***Agricultural Transformation***

Objective: This thematic session will explore the possible policy options for enhancing the growth potential and sustainability of Bangladesh's changing agriculture sector. During the pre-conference session, common grounds and options to ensure Bangladesh's agricultural transformation were discussed. The conference session will discuss a systematic approach for Bangladesh's agricultural transformation and related adaptation strategies and alignment e.g. with possible future water development initiatives for enhancing the resilience of vulnerable communities.

Implementation Challenges: Bangladesh's agriculture sector's challenges emanate from continuing population growth changing dietary requirements and deceleration in agricultural productivity growth. Besides, due to urbanization, the total agricultural lands are rapidly declining, and therefore, the limited growth of agricultural productivity has become an alarming factor for Bangladesh.

The country and agricultural production have been severely affected by weather conditions and floods, while climate change and adaptation form another key challenge for the agriculture sector. Climate change and related developments lead to salinity intrusion in the coastal belt. Alteration of different climatic parameters associated with the water environment has caused deleterious impacts on fisheries' resources. On the other hand, the trend of culture fishery habitat areas is gradually increasing. In the livestock sector, the shortage of feeds and fodder is currently one of the major constraints for developing the sector. In addition, inefficiency in the production chain often leads to wastage of milk and other dairy products. To reduce such wastage, cold storage and quality control are essential for the production and marketing of agricultural products. Bangladesh can make considerable progress by utilization research results and efficient technologies e.g. by means of a science-policy interface where questions of farmers are addressed and outcomes reach the farmers. To raise income from food export, quality processes for export need to be in place and monitored. With regard to water management in agriculture, alignment with water resources development along with the foreseen agriculture transformation, needs to take place.

GoB Strategies for Addressing the Challenges: for the crop sub-sector, GoB focused on promoting sustainable agriculture and green growth, rational use of quality inputs, and the promotion of measures to expand mechanization. The Minister of Agriculture has initiated the Agriculture Transformation

Programme (ATP), to address the changes in the agriculture and food system in a systematic and integrated way. With regard to water, as the most important input to agriculture, the government has taken specific water management strategies in both BDP 2100 and 8th Five-Year Plan. The water sector strategies are based on the several broad pillars: flood risk management strategy, freshwater strategy, and strategies for six hotspots – namely, Barind and Drought Prone Areas, coastal zone, river systems, and estuaries, urban areas, haor, and flash flood areas, Chattogram Hill Tracts. Further alignment between BDP 2100 and ATP is foreseen.

- ***Urban Development and Water Security***

Objective: Investments in climate resilient urban infrastructure in Bangladesh are increasingly vital to increase productive capacity as well as to enhance economic growth, while improving the living conditions in cities and their adaptive capacity to address future climate risks. Collectively the pourashavas and Urban Growth centers play a key role in the sustainable development of Bangladesh. In addition to the improvements foreseen and accomplished through earlier and ongoing projects, a majority of the pourashavas and Growth Centers still need significant additional and immediate financing/investment support to accelerate uptake and upscaling of climate resilient urban infrastructure and service delivery in order to accommodate the rapid urbanization. The session on urban development will address the challenges and opportunities the pourashavas and Growth Centers are facing to create tangible and rapid development impacts on the ground. The session will discuss the BDP 2100 related issues and explore how an effective partnership, (pilot) demonstration and peer learning can be built with the development partners, private sector, and civil society to create an enabling environment for rapid upscaling (strengthening institutional capacity, governance and awareness) of climate resilient urban infrastructure.

Implementation Challenges: Most of the cities in Bangladesh lack necessary urban infrastructure, particularly in areas prone to environmental risks such as flooding and cyclone. In the effort to provide its citizens with less risky living conditions, the Government has taken different initiatives. However, currently, Bangladesh lacks the required financial resource and technical expertise to design climate-resilient smart cities. The rapid growth of the urban population poses a severe challenge for the urban institutions responsible for water supply, sanitation, and solid waste management. Currently, the institutional arrangements for handling the water-related challenges are weak, and in the future, the impact of climate change is expected to lead to an influx of climate migrants in different urban areas.

In most cities, groundwater is used for providing the drinking water supply. For instance, 87% of the water supply is abstracted from groundwater resources in Dhaka city. As a result, the groundwater table is decreasing very rapidly due to overexploitation. Due to domestic, industrial, and agricultural pollution, the quality of the surface has rapidly deteriorated. Currently, the piped water supply coverage is reaching only about 40% of the urban population, while the remaining have to depend on shallow hand pumps, tube-wells, and other informal sources of water supply. The poor people, especially the slum dwellers, have to spend considerable time and resources to obtain drinking water. Despite significant progress to increase access to improved sanitation, large investments are still needed, also for health and environmental reasons. Currently, major cities like Dhaka and Chittagong have a sewerage system, but most residents do not have sewerage coverage even in these cities.

Addressing the Existing Challenges: The BDP 2100 focused on improving the urban environment and water quality management and emphasized the expansion of piped water supply, sanitation and urban drainage systems. BDP 2100 emphasized on enhancing urban water security and water use efficiency.

BDP 2100 also placed special attention on the increase drainage capacity and reduce flood risk in urban areas.

In the future, climate change can trigger large-scale urban migration and lead to extensive resource competition among the urban inhabitants. Such a situation will most severely affect the poorer groups, especially the vulnerable groups living in urban slum areas. For addressing these challenges, effective urban development and water security programs need to be designed.

- ***Blue Economy***

Objective: Given its unique geographical location in the Bay of Bengal, the blue economy can be a next driving force for Bangladesh's economy. Bangladesh has made minimal progress in exploring its blue economy potential as it lacks the required technology and human resources in this emerging sector. The thematic session on the blue economy will address the issue-how Bangladesh can innovate in its blue economy development. The private sector will play a crucial role in promoting the blue economy concept, and the session will also discuss the required policy support for facilitating private sector investment in Bangladesh's blue economy.

Implementation Challenges: Despite the massive opportunities, Bangladesh is currently facing numerous challenges in the development process of the blue economy. First, inadequate access to finance and low technical capability is affecting the growth of Bangladesh's blue economy. Second, Bangladesh currently lacks in depth knowledge, skills and experience of many aspects of emerging Blue Economy sectors, such as marine aquatic products, aquaculture, marine biotechnology, ocean tidal energy, and deep-sea mining. Promoting the blue economy concept will require a large number of skilled coastal and offshore engineers, merchant mariners, navigators, fisheries technologists, biotechnologists, and various other professions. Third, while Bangladesh is gradually implementing projects for capacity building, awareness-raising, and socio-economic development under the blue economy, it is essential to ensure required funding allocation for this important sector. Finally, it is essential to ensure proper coordination between different government agencies for ensuring sustainable management of Bangladesh's ocean and marine resources.

Addressing the Existing Challenges: With the settlement of maritime border disputes with neighbouring states Myanmar and India in 2014, the Government of Bangladesh embarked on unlocking the potential. In the 8th Five-year Plan, the GoB has focused on stock assessment of marine fisheries and promoting sustainable marine fishes' exploitation. The capacity development of fishermen in the deep sea has been a major focus of the 8FYP. Bangladesh Climate Change Trust Fund two projects are being taken for capacity building, awareness-raising, and socio-economic development in relation to blue economy.

- ***Valuing Water***

Objective: for ensuring sustainable water management and long-term socio-economic development, Bangladesh needs to focus on the appropriate water valuation process. The session will address which options could be leveraged to promote proper water valuation for ensuring efficient water utilization. By properly valuing water, Bangladesh will be able to consider trade-offs and balance multiple water uses, thus making appropriate water project investment decisions. The session will attempt to identify other countries' strategies for valuing water and explore building effective partnerships with different stakeholders.

Implementation Challenges: Although Bangladesh enjoys abundant monsoon water flow, water availability in the dry season is gradually declining. Bangladesh is also facing multiple water-related management issues, including growing water demands, diminishing groundwater aquifers, and increasingly polluted surface and groundwater bodies. Besides, arsenic pollution is also affecting the availability of safe water. Understanding the total economic value of water can provide a basis to find strategic responses to Bangladesh's existing water resource challenges.

Currently, public project investment decisions are made based on the Development Project Proforma/Proposals (DPP). While financial and economic analysis is conducted in preparing the DPP, the impact of water resources is often not adequately measured during the economic analysis. For instance, a new groundwater-based irrigation project can considerably impact the falling groundwater tables, but these impacts are not adequately measured during the DPP formulation process. In most cases, these impacts may be mentioned, without any quantitative measurements, leading to only a partial overview of a proposed project's possible benefit and impact.

Valuing water is also essential for the private sector, as different industries are currently inefficiently using water. Bangladesh's apparel factory uses 250 liters of water to wash one kg of apparel, whereas the global standard is 60 to 70 liters. Currently, Bangladesh is not following cost recovery principles, often leading to water misuse. Therefore, considering the existing water resource challenges, valuing water can provide a basis to find adequate responses.

Initiatives for Valuing Water: The 8th Five-Year Plan includes strategies related to water valuation. Here, GoB has focused on the valuation (water pricing and water auditing) aspect of the water to limit its unsustainable use. To further move the initiative of Valuing Water in Bangladesh forward, the National Steering Board (NSB) of the Bangladesh Water Multi-Stakeholder Partnership (BWMSP) set up a High-Level Valuing Water Committee to lead this initiative. This Committee, with support of the Technical Valuing Water Committee and in cooperation with the Ministry of Water Resources, developed a Proforma for Study Proposal (PFS) on a Study to Develop Operational Shadow Prices for Water to Support Informed Policy and Investment Decision Making Processes. Currently, WARPO is considering a study on shadow water prices. In addition, WARPO is considering the use of the shadow price for water in its industrial water use policy.

In Bangladesh, the water resource distribution for multiple uses and services is uneven, making usable water resources scarcer. Therefore, GoB considers water valuation important on a national scale, to incorporate results in public and private decision-making. Collaboration on shadow prices will ensure efficient water use and allow stakeholders to pave the way for broader adoption across the public and private sectors.

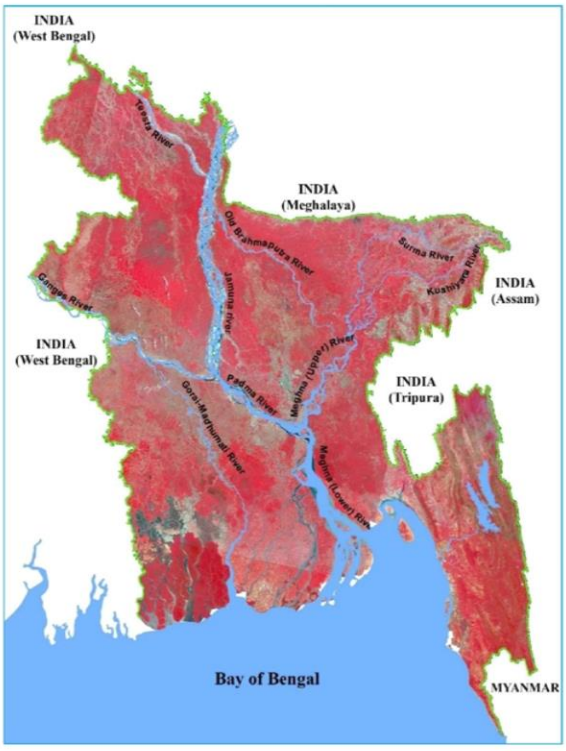
Annex C: Concept paper of the Breakout session

Concept paper on the River systems and estuaries

Bangladesh Delta Plan 2100 International Conference: Issues and Challenges

Concept Notes and Agenda for the Breakout Session on

"River Systems"



May 26-27, 2022

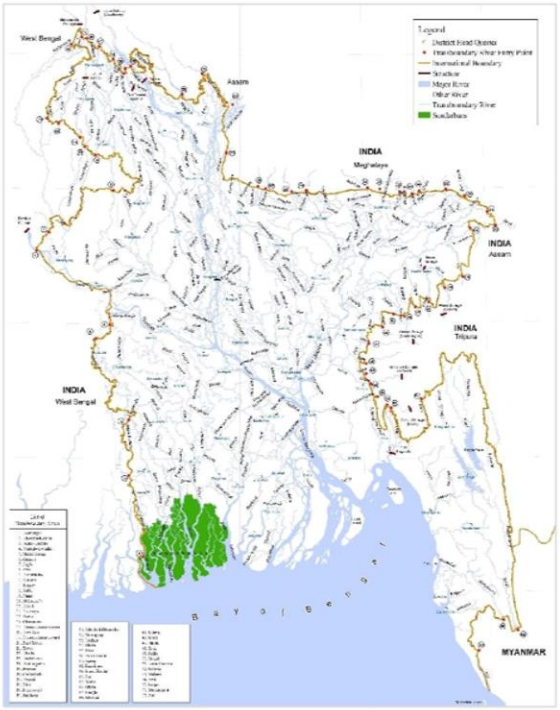
Dhaka, Bangladesh

Introduction

Bangladesh is one of the largest active deltas in the world which is formed by the deposition of the sediment carried by the three great rivers of the planet namely the Brahmaputra-Jamuna, the Ganges and the Meghna (GBM). Although Bangladesh is crisscrossed by numerous rivers of various proportions, the GBM heavily influence the river systems of the country and water resources management.

Part of the great GBM Basins, the Ganges Basin is a vast 1,087,300 km^2, 4% of which lies in Bangladesh, amounting to 32% of the country's area. The Brahmaputra Basin (543,400 km^2) is approximately half the size of the Ganges, with 7% falling in Bangladesh, amounting to 27% of the country's area. Despite the basin size differences, 54% of the cross-boundary inflow of the GBM systems is contributed by the Brahmaputra-Jamuna and 31% by the Ganges River, rendering 85% of the flow through the country being controlled by these mighty river systems.

The headwaters of both the Ganges and the Brahmaputra River originate in the Himalayan mountain range in China, after which these two rivers traverse through completely separate routes and enter Bangladesh, ultimately meeting as Ganges and Jamuna, forming Padma. The Ganges river enters Bangladesh through Nawabganj District about 50 km below Farakka, joins the Brahmaputra-Jamuna (entering through Kurigram as Brahmaputra) river another 220 km further downstream, near Goalanda Ghat, as the Padma and further down the combined discharge joins the Meghna river at Chandpur after travelling another 70 km. The combined stream is called the Meghna River, which 90 km further downstream discharges into the Bay of Bengal.

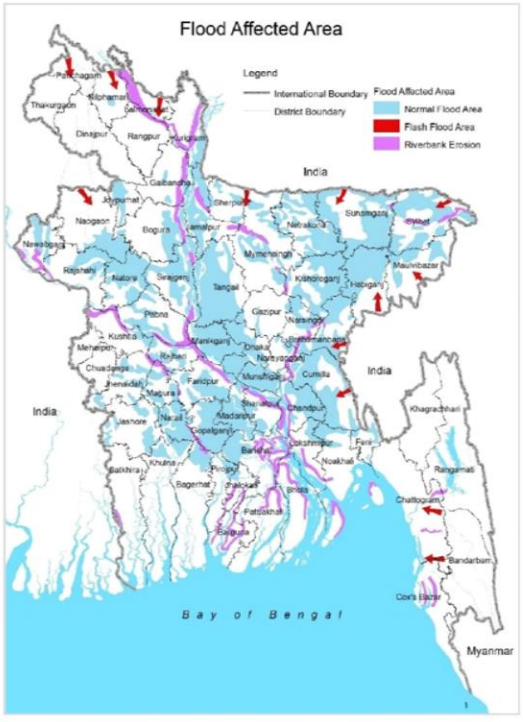


Major tributaries such as Mahananda, Punarbhaba, Atrai (Boral) and Karatoya join the Ganges River on its left bank. Major distributaries of Ganges include Mathabhanga, Gorai and Chandana-Barasia, all on the right bank. The right-bank tributaries of Brahmaputra-Jamuna are the Tista and Atrai-Gur rivers and the two left-bank distributaries include the abandoned course of the Brahmaputra now known as the Old Brahmaputra and the Dhaleshwari.

As Bangladesh is located in the low-lying delta of these mighty rivers, water resources management is rather complex and highly sensitive to upstream developments. Within

Bangladesh also, these river systems display varying hydro-morphological characteristics, being distributed within separate hydrological regions. The northern tributaries of Ganges and Brahmaputra are dominated by the fluvial (fresh water) processes; while the southern portion of Ganges distributaries are tide and wave dominated. On average the erosion rate in the Jamuna, Ganges and Padma Rivers in the last 48 years are 1960 ha, 630 ha and 700 ha respectively.

Bangladesh is prone to climate induced disasters such as erratic rainfall patterns, altering local climate regimes, seasonal shifting and resulting impacts in the form of segregated droughts in the northwest. The southwest region influenced by the increased frequency and intensity of cyclonic storm, sea-level rise, salinity intrusion and silt deposition. In the north-eastern region increased intensity and temporal shifts in flash floods. Rising trend of duration and intensity of monsoon fluvial flooding all throughout the country. The recent flood of 2020 affected 5.4 million people in the northern, central, and north-eastern part of the country, flooding approximately 40 percent of the country across 33 districts. Additionally, changing of the river bed, sedimentation, sustainable navigation, maintaining good water quality are also the challenging issues. The various issues that arise are thus best addressed through and integrated delta-scale planning approach involving river basin-wise planning and management as well as across multivariate development sectors. Management of the rivers is very important as economy like agriculture, fisheries, industry, shipping and transportation are heavily dependent on river systems of Bangladesh.



The Government of Bangladesh (GoB) has a vision to become a developed country in 2041. Without sustainable river management, it is difficult to achieve it through integrated approach. This approach not only requires integration within the different socio-economic sectors of the country but also requires transboundary river management. BDP would contribute significantly to achieve the GOB's aspiration of becoming developed country by 2041 and eliminating extreme poverty by 2031. Regional cooperation with the upper riparian country is very much needed as there are 57 trans-boundary rivers in total, of which 54 with India and the remaining three with

Myanmar. GoB has approved the Bangladesh Delta Plan 2100, in 2018 where Rivers and Estuarine has been kept as a separate hotspot area.

In addition to that, Bangladesh Water Development Board (BWDB) has prepared the River Stabilization Plan of the Jamuna and Padma Rivers in 2016 under the project Flood and Riverbank Erosion Risk Management Investment Program (FRERMIP) with the financial and technical assistance of Asian Development Bank (ADB) and the Government of the Kingdom of the Netherlands. Therefore, considering the vision 2041 of the GoB, it is imperative that a plan is prepared for overall water resources management for the Ganges-Padma, Brahmaputra-Jamuna and the Meghna River Systems incorporating basin-scale management and with transboundary water management concept in line with the Bangladesh Delta Plan 2100.

Purpose and Scopes of the Session

The BDP 2100 International Conference: Issues and Challenges is expected to accelerate and consolidate the BDP 2100 implementation efforts through discussion and exchange of views and experiences among the participating policy makers, practitioners, development partners, researchers, academicians and other stakeholders from home and abroad. The expected outcome of the conference is to have a concrete programme based on BDP 2100 investment projects with the aim to bring BDP 2100 investment programme and DP/IFI investment programme together. Breakout Session on Rivers System is one of the important events of this conference. The purposes of this breakout session on rivers are to discuss and review implementation approaches, challenges and prospects for managing the river system of Bangladesh in general and the Ganges-Padma and the Brahmaputra-Jamuna River Systems. These include spatial planning, sediment management, erosion prediction, flood management and its correlation with river systems, navigation issues with the international protocol route, river dredging for establishing/maintaining connectivity, dredging materials management, as well as river training techniques considering environmental aspects such as maintenance of e-flow, river-floodplain connectivity and ecosystems considerations in line with the goal and strategy of Bangladesh Delta Plan 2100.

In addition, discussions will be held on key topics such as whole river course stabilization plan along with land reclamation in the context of BDP2100 and adaptive delta management as well as aligning of river interventions like Jamuna Economic Corridor, FRERMIP, and the aspects/items along with possible research questions. Discussion could be made with the multi-purpose use of the embankment. The session will highly focus on the development of solution of River Course Stabilization Plan by focusing integrated river management approach which is vital to sustain our economic growth, regional cooperation, job creation and livelihoods development especially at rural setting and urban industrial hubs like Dhaka.

Furthermore, the session will highly emphasize on synchronization of all initiatives undertaken by Development partners like World Bank (WB), Asian Development Bank (ADB) and Japan International Cooperation Agency (JICA) on river system management. For example, River Stabilization Plan has been prepared for the Jamuna and Padma Rivers by FRERMIP, BWDB with financial assistance of ADB while WB is financing the Jamuna Economic Corridor Development project for the upper reach (International-Border to Bangabandhu Bridge). Development partners will share their activities undertaken not only in Bangladesh but also in upper riverine

countries like India. Additionally, the sharing of their future plan for water resources management would ensure the harmonization of the every interventions in the Jamuna, the Padma and the Ganges Rivers. In addition, experts and representatives from relevant GoB Ministries, Divisions and Agencies will also share their present activities and future plans. Overall, the session will include development of solution for river stabilization plan in consideration of environment and coherence and coordination within ministries, development partners and policy makers.

Modalities of the Session

The session modalities will be a unique one and not like the other conference. The duration of the conference will be 1 hour and 30 minutes. Considering the time limitation, there will not be any presentation rather few core questions will be thrown to the participants who will discuss on that particular questions/ topics. The subject of the core questions could be like the followings.

- ✓ River stabilization plan and its implementation challenges;
- ✓ Synchronization of all initiatives for making coherence and coordination within and among ministries, divisions and development partners for integrated river and water resources management;
- ✓ What are the priorities for River system and integrated water resources management;
- ✓ Navigation and dredging with international protocol route;
- ✓ Implementation and Financing of river system management projects of BDP investment plan.
- ✓ Institutional reforms and capacity building;
- ✓ Other river functions e.g., agriculture, fisheries, pollution control, tourism etc.; and
- ✓ Project readiness

Participants will be categorized by three circles. Such as Inner Circle, Middle Circle and Outer Circle. This is to mention here that participants of different circles will be interchanged based on the core questions/topics during the discussion of the session.

Inner Circle: Participants from the Inner Circle will play an important and active role during discussion on a particular topic. Prospective participants can be representative of MoWR (BWDB, WARPO, IWM, and CEGIS), MoS (BIWTA), academicians and researchers, experts from different public /private organizations/institution at both home and abroad.

Middle Circle: Participants from the Middle Circle will add value to the discussion. Potential participants would be national & international experts, academicians, development partners.

Outer Circle: Participants from the Outer Circle will listen and take notes. Later they will contribute to implement BDP2100 through integrated river management. But if any serious issues arise they will provide their notes to the Inner Circle for elaboration of the topic. Participants includes policy makers, national & international experts, representative from MoWR & MoS, development partners and NL embassy.

Expected Outcomes of the Session

- Modalities of river course stabilization plan of the major rivers;
- Modality of river dredging and incorporation into planning process;
- Development of solutions for river course stabilization;
- Environmental considerations for River training techniques and building with nature opportunities;
- Coherence and coordination between development partners, within ministries, and policy makers;
- Integration and coordination among the agencies involved in River Management;

- Coherence and coordination between development partners, within ministries and policy makers;
- Enhanced knowledge on transboundary water management;
- Potential sources of financing projects related to river system management;
- A concrete investment programme on Riv.er System aligning with BDP 2100 along with indicative source of financing;
- Recommendation on preparing a national river management master plan by incorporating basin wide flood and river management needs;
- Joint Agreement/ Understanding on Future actions regarding River System in Bangladesh.

Breakout Session on River Systems: May 26, 2022, Thursday

Time: 13:45 to 15:15 PM (1 hour and 30 minutes)
Chair: Mr. Kabir Bin Anwar, Senior Secretary, Ministry of Water Resources;
Moderator: Mr. Malik Fida A Khan, Executive Director, CEGIS.
Format: Inner Circle (10 persons) –active role in discussion, Middle Circle (15 persons) – add value to the discussion and Outer Circle (20 persons) – listen and take notes.

Time	Duration	Core Questions/Topics of the Discussion	Participants
13:45 to 13:50	Five (5) Minutes	Introductory Speech by the Moderator, Introduction of the participants and agenda of the discussion of the session	
13:50 to 14:15	Twenty Five (25) Minutes	**Core Question 1: River Course Stabilization Plan, Land reclamation and Challenges** ✓ Spatial planning, flood and riverbank erosion risk management; ✓ Actions for River management; ✓ Development of solutions; ✓ Innovative and building with nature type river training techniques considering the environment; ✓ Utilization of the interventions for land reclamation including climate and nature-based approaches; ✓ Setting up river-side economic zones; ✓ Revival and flow diversion via major distributaries like Gorai, Mathabhanga, Chandana, Old Brahmaputra, Dhaleshwari, Arial Khan river systems; ✓ Estuary management.	Core Group
14:15 to 14:40	Twenty Five (25) Minutes	**Core Question 2: Navigation, Dredging and Management of Dredged Materials** ✓ Present dredging practices and methods; ✓ Dredging operation for maintaining navigation channels-combine dredging with river training interventions for sustenance of navigation routes; ✓ Stimulating transportation and logistics on the major rivers in relation to inland waterway transport, inland ports and seaports; ✓ Navigation issues with international protocol routes; ✓ Innovative techniques for the dredging activities and management of the dredged materials- sand cement blocks to safeguard top soil, extract rare earth mineral etc.	Core Group
14:40 to 15:05	Twenty Five (25) Minutes	**Core Question 3: Coordination and coherence within development partners, ministries and policy makers** ✓ What are the initiatives implemented so far? ✓ Synchronization of all initiatives; ✓ Harmonization of every interventions in the Jamuna, Ganges and Padma Rivers in line with BDP 2100; ✓ Understanding future plan of interventions by different agencies on what are being planned and synchronized in the Transboundary Rivers and rivers. Honest brokering role of DPs for regional cooperation as envisioned in BDP 2100 and, linking	Core Group

Time	Duration	Core Questions/Topics of the Discussion	Participants
		regional hydropower generation to flood management and navigation improvement; ✓ Convening DP support to river management initiatives. ✓ What (joint) actions and funding are needed; ✓ What are the priorities for integrated water resources management in relation to river systems management?	
15:05 to 15:10	Five (5) Minutes	Summary of the session by the moderator	
15:10 to 15:15	Five (5) Minutes	Closing remarks of the session by the Chairperson	

Concept paper on the Coastal Zone

Bangladesh Delta Plan 2100
International Conference

Notes for the Coastal Zone Session

May 26-27, 2022

Dhaka, Bangladesh

Support to Implementation of Bangladesh Delta Plan 2100 (SIBDP)

THE WORLD BANK

ADB

JICA

EUROPEAN UNION

1. Introduction

The International Conference on the Bangladesh Delta Plan 2100[2]; 'Issues and Challenges of Implementation', is a high level, international meeting, consisting of a series of events, which aims to lead to meaningful and practical outcomes, furthering implementation. This Conference[1] will use the Bangladesh Delta Plan 2100[2] (BDP2100), framework as a basis for discussion. The framework for strategy development presented within BDP2100 is developed at three levels: the national level (flood risk management and fresh water), six hotspot areas (Coastal Zone, Barind and Drought prone areas, Haor and Flash Flood Areas, Chattogram Hill Tracts, River Systems and Estuaries, and Urban Areas) and strategies for cross-cutting issues (e.g. Sustainable Land Use and Spatial Planning; Agriculture, Food Security, Nutrition and Livelihoods; Transboundary Water Management; Dynamizing the Inland Water Transport System, Blue Economy, Renewable Energy, and Earthquakes).

The planned BDP2100 Conference will be held during a 1.5-day event on May 26-27, 2022 and will amongst others have *break-out and plenary sessions*. This note deals with the groundwork for the session on the Coastal Zone of Bangladesh.

2. Expected Outcomes of the BDP2100 Conference

The expected outcome[3] of the BDP2100 Conference on 26th and 27th May 2022 is to have a concrete program based on proposed investment projects including a roadmap, with the aim to bringing BDP2100 implementation programs and DP/ IFI investment programs together.

During the Conference, invited participants will work towards the above outcomes during various breakout sessions in the afternoon of 26th May 2022 and the morning of 27th May 2022. The coastal zone break-out session is scheduled for Thursday 26th May between 1345 – 1515 (Bangladesh time) with a recap of the session's results during the plenary session May 27, between 09.15 – 10.30 hours.

3. Objective and Expected Outcome Hotspot: Coastal Zone

The specific objective for the Coastal Zone Hotspot is to discuss the way forward for coastal resilience interventions in Bangladesh, in line with the BDP2100, and informed by lessons learned. The expected outcome of the discussion is a brief paper written by the involved stakeholders together summarizing key outcomes of the discussion and potentially a road map for 2-3 no-regret interventions. Key issues related to coastal resilience in Bangladesh that will be addressed are the following:

1. **Coastal resilience:** where do we come from, where are we now and what is to be expected in the future?
2. **Next coastal program:** what are the plans, how to prioritize and finance priorities, and align these with BDP2100?
3. **Coastal interventions:** what are challenges for implementation and sustainability of interventions and how to overcome these?
4. **Coastal innovations:** how to become more people-centric, how to leverage modern technology and approaches like nature-based solutions and more risk-based approaches?

[1] https://bdp2100conference.org/
[2] http://www.plancomm.gov.bd/site/files/0adcee77-2db8-41bf-b36b-657b5ee1efb9/Bangladesh-Delta-Plan-2100
[3] The website will be updated with the outcomes of the preparatory work

4. Format of the Coastal Zone Session

The proposed format of the Coastal Zone session on **Thursday May 26, 2022**, is as follows:

Duration and Format: 1.5 hour (13:45 BST to 15:15 BST) / In-Person

Chairperson and Chief Guest of the Coastal Zone Session:

- **Mr. Zaheed Farooque, MP**, Hon'ble Minister of State, Ministry of Water Resources (MoWR)

Guest of Honour:

- **Mr. AKM Enamul Hoque Shameem, MP**, Hon'ble Deputy Minister, MoWR

Special Guest:

- **Mr. Fazlur Rashid,** Director General, Bangladesh Water Development Board
- **Professor Ainun Nishat,** Professor Emeritus, C3ER, BRAC University
- **Professor Saleemul Huq,** OBE, Director, International Centre for Climate Change and Development (ICCCAD)

Moderator:

- **Mr. Md. Zahir-ul Haque Khan,** Deputy Executive Director (Operation), Institute of Water Modelling

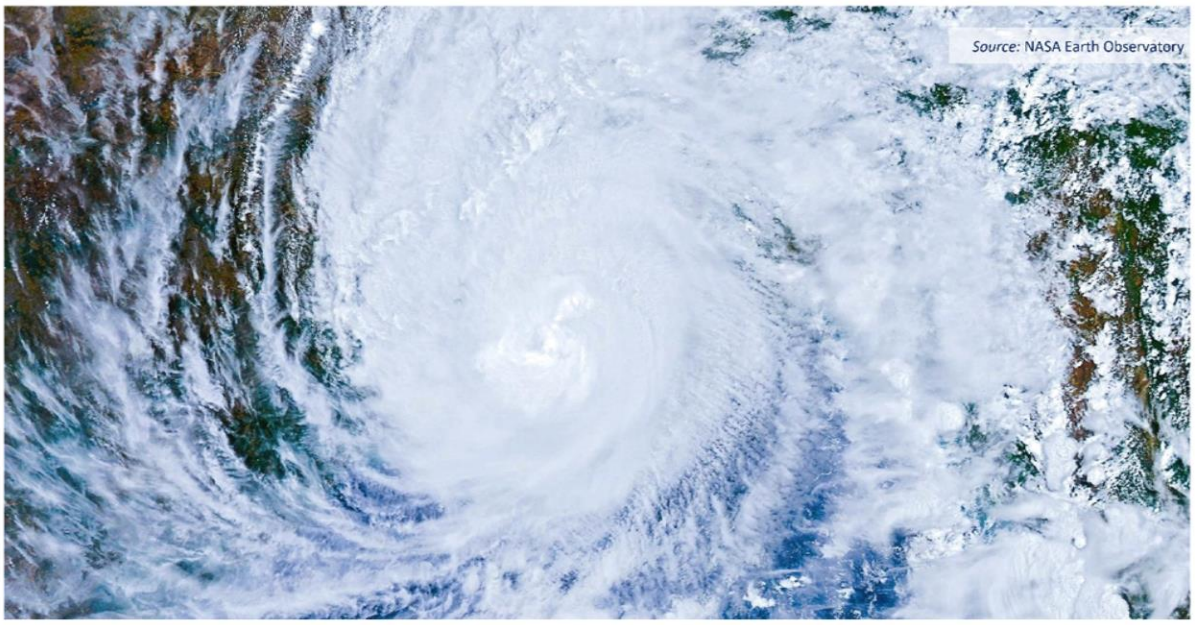
Panellists:

- **Mr. Syed Hasan Imam,** Project Director, Coastal Embankment Improvement Project (CEIP-I), Bangladesh Water Development Board (BWDB)
- **Mr. Md. Amir Hosain Chowdhury,** Chief Conservator of Forests – Proposed
- **Ms. Runa Khan,** Founder and Executive Director, Friendship NGO
- **Mr. J.H. Laboyrie,** Team Leader, Coastal Embankment Improvement Project (CEIP-I) and Managing Director, Delta Context
- **Mr. Ito Daisuke,** JICA Representative (Disaster Risk Reduction & Climate Change)
- **Ms. Swarna Kazi,** Sr. Disaster Risk Management Specialist, The World Bank

Coastal Zone Session Organized by:

THE WORLD BANK

JICA



Coastal Zone Session: May 26, 2022, 13.45 To 15.15 (90 Mins.)

Time	Duration	Question/ Discussion Points	Person
Opening Remarks – 5 mins			
13.45 To 13.50	5 mins	Moderator: Welcome Remarks, Introduction of the Panel, and Agenda	Mr. Md. Zahir-ul Haque Khan, IWM
Presentations and Brief Q&A – 20 mins			
Four presentations of 5 minutes each			
13.50 To 14.10	20 mins	Overview of Cyclone, Storm Surges and Salinity Intrusion along the Bangladesh Coast	Mr. Md. Zahir-ul Haque Khan, IWM
		Recent and ongoing interventions – emerging lessons learned	Mr. Syed Hasan Imam, Project Director, CEIP-I
		Coastal resilience challenges and history of approach/major interventions/key recommendations	Ms. Swarna Kazi, The World Bank
		Coastal resilience and adaptation in a changing climate	Professor Saleemul Huq, OBE, ICCCAD
Panel Discussion with Audience – 55 minutes			
Panel discussion with audience (5-6 minutes each by topic, and discussion with audience):			
14.10 To 15.05	40 mins	***Topic 1: Vision Towards Coastal Resilience*** • GoB's vision towards coastal resilience • What interventions are most urgent in the coastal zone and are there trade-offs? • Given limited financing and implementation capacity – how to prioritize interventions?	Mr. AKM Enamul Hoque Shameem, MP Ho'ble Deputy Minister, MoWR
		Topic 2: Coastal Resilience in the Framework of Emergency Rehabilitation – Experience post Cyclone Amphan	Mr. Ito Daisuke, JICA
		Topic 3: Importance of incorporating afforestation into the resilience planning	Mr. Md. Amir Hosain Chowdhury, Chief Conservator of Forests
		Topic 4: People-centric approach towards coastal resilience	Ms. Runa Khan, Founder and Executive Director, Friendship NGO
		Topic 5: Challenges for implementation and sustainability of interventions • Are there important knowledge gaps to inform decision making? • Land acquisition? • O&M capacity/resources for structural interventions?	Mr. J.H. Laboyrie Team Leader, CEIP-I and Managing Director Delta Context
		Topic 6: Opportunities to further develop or improve interventions • How to go about new technologies or approaches such as sand motor or beach nourishment, NBS, resettlement, land use change? • Leveraging use of state-of-the-art tools (e.g., CEIP-1 Long Term Research and Analysis of the Coastal Zone analytics work) into practice? Better data collection? Data sharing? Knowledge Transfer, etc.	Professor Ainun Nishat, Professor Emeritus
	15 mins	***Open Discussion***	
Final Statement from Panelists and Closing Remarks – 10 minutes			
15.05 To 15.10	5 mins	Summary by Moderator	Mr. Md. Zahir-ul Haque Khan, IWM
15.10 To 15.15	5 mins	Closing by Chairperson of Coastal Zone Session	Mr. Zaheed Farooque, MP, Hon'ble Minister of State, MoWR

Approach of the preparatory groundwork of coastal session

The 8th Five Year Plan[4] identifies the projects which will be taken forward by the Government of Bangladesh and the BDP2100 has proposed projects which could be implemented within the framework and ambitions of BDP2100. To achieve the first outcome of the conference, the investment projects should be identified with proper rationale and in line with Government's plans and ambitions.

The approach to arrive at the desired outcomes is to find the optimum synergy of the:

1. strategy and planning ambitions of Government of Bangladesh;
2. challenges and opportunities the physical system of the coastal zone of Bangladesh, including ecological processes and ecosystem services like mangroves, can offer;
3. potential financing and funding of the various Stakeholders.

The table below provides a preliminary framework in which ambitions, planning and content come together which guided the preparatory groundwork.

Aspects	Elements	Instruments and data	Potential actions
Challenges and opportunities the physical system of the coastal zone of Bangladesh can offer	▪ Mitigation measures related to cyclones and storm surge inundation, coastal erosion, salinity intrusion, waterlogging ▪ Understanding physical coastal mechanisms ▪ Addressing vulnerabilities and urgencies	▪ Bangladesh: Enhancing Coastal Resilience in a Changing Climate (forthcoming report) ▪ Various ongoing projects like e.g. Coastal Embankment Improvement Project (CEIP-1), Payra Port Development, Matarbari Port Development Project, CDSP, Blue Gold,	▪ Innovative solutions like Nature Based Solutions in Polder development ▪ Utilise dredged materials from access channels for Payra and Mongla Ports; ▪ Develop new land in Sandwip and Urir Char areas;
Strategy and planning ambitions of Government of Bangladesh	▪ Safeguarding lives and assets in the Coastal Zone ▪ Prosper socio-economic growth ▪ Enhance coastal resilience	▪ 8th Five Year Plan ▪ BDP2100 ▪ Draft Mujib Climate Prosperity Plan ▪ Draft National Adaptation Plan ▪ National Plan for Disaster Management 2021-2025 ▪ Second Perspective Plan 2021-2041	▪ Adaptive Water Management ▪ Strategies for specific parts of the coast as proposed by BDP2100 for rationalization of the different coastal sections
Potential financing and funding of the various Stakeholders.	▪ Addressing benefits and challenges attached to implementation of measures ▪ Projecting projects into a realistic investment map	▪ Funding plans of: ▪ Government of Bangladesh ▪ Development Partners ▪ Private Sector	▪ Updating PPP Law and Regulations ▪ Enhance the O&M framework including funding

[4] http://plancomm.gov.bd/site/files/8ec347dc-4926-4802-a839-7569897e1a7a/8th-Five-Year-Plan

Concept paper on Urban Areas

Concept note Breakout session Urban Hotspots

Background

Investments in climate resilient urban infrastructure in Bangladesh are vital to increase productivity and boost economic growth. At the same time, cities need to address climate risks and provide better living conditions. How to tackle this challenge will be the topic of this breakout session which will be chaired by Honorable Minister Md. Tazul Islam, Ministry of Local Government, Rural Development and Cooperatives of Bangladesh.

Collectively the small towns (pourashavas) and Growth Centers (GC) play a key role in the sustainable development of Bangladesh (for instance in the urban-food chain-market supply). The Bangladesh Delta Plan 2100 (BDP2100) is a long term integrated program targeting to "a safe, climate resilient and prosperous delta". One of the focus areas of BDP2100 is 'urban hotspots'.

In spite of the improvements accomplished through earlier and ongoing projects, a majority of the pourashavas and growth centers still need significant additional and immediate financing/investment support to accelerate uptake and upscaling of climate resilient urban infrastructure and service delivery in order to accommodate the rapid urbanisation. This requires inclusive, practical action and (pilot) demonstration of small-scale innovations in urban infrastructure and peer learning to create an enabling environment for rapid upscaling (strengthening institutional capacity, governance and awareness).

In the breakout session the Urban Demonstrators Initiative will be presented and discussed. The Urban Demonstrators initiative has been developed in the DeltaCAP project, in collaboration with LGED, and is inspired by international experiences. They involve small scale interventions to create tangible and rapid development impacts on the ground. They are considered an essential component to build the capacities within local government bodies and other local stakeholders that are required for further up-scaling of climate resilient urban infrastructure within and across pourashavas and urban growth centers. The first two pilots ('green' public spaces) will be implemented in the pourashavas Keshobpur and Roazan.

Objectives and expected outcome

The objectives of this breakout session are:

(i) to discuss the challenges and opportunities pourashavas and GCs are facing to overcome their increasing urban infrastructure deficit, leading to poor living conditions, environmental degradation and future growth opportunities, and

(ii) to identify enabling conditions for practical action (urban demonstrators) and rapid upscaling of climate resilient infrastructure including lessons learned (best- and bad practices from frontrunners).

Key questions that will drive the discussion are:

(i) What is the importance of strengthening the role and mandate of local governments?

(ii) How to build the necessary capacities at local level to accomplish that ?

(iii) What are the financing mechanisms to support urban green/sustainable growth at local level?

The expected outcome of the discussion is a Letter of Intent (LOI) to be signed by the involved stakeholders on a joint pathway towards rapid upscaling of Urban Demonstrators

Format of the session

The proposed format of the Urban Hotspots session on Thursday May 26, 2022, is as follows:

Duration and format: 1.5 hours/fish bowl setting (1st ring: short presentations and discussion with Hon'ble Minister LGRD and mayors and stakeholders pourahavas and representatives of the Youth Action Track, 2nd ring: panel of experts (technical, financial and governance) provide contribution on invitation (by the moderator)

Chairperson and participants 1st ring:

Mr. Md Tazul Islam, Honorable Minister LGRD (Chairperson)

Mr. Rafiqul Islam, Mayor Pourashava Keshabpur, Jeshore

Mr. Md. Jamir Uddin Parves, Mayor Pourashava Raozan

Mr. Mashiur Rahman, Keshobpur Pilot School & College

Mr. Hazi Md Abdul Gani, Mayor Savar Municipality, Executive President MAB

Mr. Manzurul Islam, Chief Engineer Khulna City Cooperation

Ms. Nazma Rahman Ruhi, Principal ,Gohira Ideal High School, Raozan, Chattogram.

Mr. Syed Akmal Ali, Director WARD Keshobpur, Jeshore.

Ms. Syeda Rehana Afroj, Department of Political Science, Raozan College, Chattogram

Mr. Riaz Hamidullah, Ambassador of Bangladesh to the Netherlands (online)

Md. Jane Alam Jony, Counselor, Ward No 5 Roazan Pourashava, Chittigong

Moderator: Md. Abul Kalam Azad, ex Chief Engineer LGED

time	duration	activity
13:45 - 13:50	5 mins	**Welcome and introduction** by Md. Abul Kalam Azad & Mr. Md Tazul Islam, Honorable Minister LGRD
13:50 – 14:10	20 mins	**Presentations** (max 5 mins each): Mr. Rafiqul Islam, Mayor Pourashava Keshabpur, Jeshore Mr. Md. Jamir Uddin Parves, Mayor Pourashava Raozan Mr. Manzurul Islam, Chief Engineer Khulna City Cooperation Ms. Nazma Rahman Ruhi, Gohira Ideal High School, Raozan, Chattogram
14:10 – 14:30	20 mins	**Discussion** 1st Circle "Challenges and opportunities pourashavas and GCs"
14:30 – 14:40	10 mins	**Feedback** experts 2nd Circle
14:40 – 15:00	20 mins	**Discussion** 1st Circle "Enabling conditions for practical action"
15:00 - 15:10	10 mins	**Feedback** experts 2nd Circle
15:10 - 15:15	5 mins	**Summary** by Moderator and closing by Chairperson

Concept paper on Agriculture Transformation

Concept Note

For the break out session on Agricultural Transformation at the International Conference on Bangladesh Delta Plan 2100, on 26-27 May 2022

Background: Agricultural Transformation Programme

Based on tremendous achievements in providing food and employment through the agricultural sector over the last 50 years, the Government of Bangladesh is addressing the challenge to transform of food and agriculture systems towards the future to respond to the new realities of meeting the ever-increasing demand for diversified, adequate, safe, nutritious, and affordable food and diets. Internationally, there is a systematic shift from 'focus on agricultural production only' toward systematic agriculture and food systems approach to ensure balanced outputs for healthy, safe, and nutritious food, income, sustaining the environment, and addressing climate change. In Bangladesh, Minister Dr. A. Razzaque leads the process of transformation of agriculture, and he foresees a programmatic approach for the Ministry of Agriculture, the Agriculture Transformation Programme (ATP), with national and international partners. All partners will be working in their capacity on various actions. Coordination and alignment will be crucial. It is necessary to adopt multi-level consultative and participatory approaches to engage with stakeholders, jointly develop a vision for the food and agriculture transformation processes across the country's relevant sectors and geographic areas, and enhance implementation action, addressing pressing climate change challenges.

One of the areas for alignment is the Bangladesh Delta Plan 2100. In light of the importance of agriculture of water and related governance and infrastructure in the Bangladesh delta, it is very relevant to discuss ATP in the International Conference on Bangladesh Delta Plan 2100 (shortly: BDP2100 Conference).

The main challenges and goals of the Agricultural Transformation Programme were discussed in a preparatory meeting on 30 March 2022 (see Box 1, below). All agreed that effective changes in agriculture are required to feed the nation in the shorter and longer-term future. The Agriculture Transformation Programme is essential to move towards middle-income country status.

At the same time, in the 30 March meeting, recommendations were also placed by ATP – For instance, regarding operationalizing the working group on investment in transforming agriculture (iTAG). The ATP iTAG group was formed on 27 October 2021, and the first meeting was held on 3 April 2022. The working group consists of government and development partners' representatives and is endorsed by the Ministry of Agriculture.

While the earlier meeting mainly focussed on the WHAT question, this meeting now will focus on the HOW and WHO questions. First, a brief overview of ATP in Bangladesh is given, followed by a line of how this can be taken forward, before touching upon recommendations from key stakeholders and alignment with BDP2100. The overall outcome of the meeting is a joint commitment toward ATP.

i. ATP in Bangladesh: Current Challenges and Goals

Over the last 50 years of the country's journey, agriculture has provided food and employment for the population. Also, through the past decades, the sector has been the significant driver of poverty reduction, providing income sources for most people, contributing to improved food security indicators, and achieving self-sufficiency.

Box 1: Main challenges and goals for ATP

Main Challenges for ATP	Goals to achieve
- Integrated collaboration within the aligned ministries, private sector, academics, and development partners - Increasing On-farm productivity - Adoption of good agriculture practices - Access to extension advice - Youth and Women empowerment - Post-harvest management (cool chain) - Involvement of the private sector - Resilient Agriculture adaptation - Role of the academia and research institutions - Food export and laboratory capacities - Alignment with Bangladesh Delta Plan 2100 - Identifying potential investment areas,	- Food security - Safe and nutritious food - Equality - Resilient and climate-smart agriculture - Strengthen food export capacity - Digitalization

Recently, emphasis has shifted from producing food to improving nutrition and well-being by providing safe food to all people while ensuring the environment. Challenges to be addressed entail further developing knowledge-based farming, climate-smart agriculture, increasing on-farm productivity, access to extension advice and finance, reducing loss and waste, ensuring safe food for the urban population with growing purchasing power, marketing, and upgrading the agricultural processing industry. Further transformation of the farm sector will occur in the years to come. A longer-term flexible plan is required, including fine-tuning to the regular Five Year Planning cycle.

The Government of Bangladesh has taken a proactive role in initiating the Agriculture Sector Transformation Programme (ATP). The program connects national and local activities and addresses short, medium, and longer-term goals, to enhance the profitability of crop production, nutrition-sensitive food planning, and agricultural marketing enhancement, including export and mechanization in agriculture in line with digitalization.

ATP is a longer-term commitment, will be based on a clear vision for the future, and needs a phased approach. Essential parts are summarized in Box 2 (below). In phase 1, the vision will be formulated, and potential investment areas will be identified using a territorial approach. At the same time, further steps will be developed as time goes by and will continue to build on the vision. Learning by doing will occur, with essential inputs from the private sector, NGOs, knowledge institutes, IFI, etc.

Box 2: Essential in ATP

Essential in ATP	**Goals to achieve**
- Farmers are feeding the nation - Sustainable and Resilient Agriculture - Knowledge - Export	- food security - safe and nutritious food - equality - resilient and climate-smart agriculture

ii. Agricultural and Food System Transformation: Taking it forward in Bangladesh

The program will have a systematic approach and adaptation strategies and alignments with other government initiatives such as Bangladesh Delta Plan to enhance local communities' resilience.

Changes in agriculture do not happen in isolation. They are part of a system in which the agriculture and food value chain is a center stage: from agricultural production to food storage, processing, retail, and consumption (blue blocks). Together with socio-economic drivers (markets, science, policies) and environmental drivers (land, water, climate, biodiversity, etc.), this forms a system and results in food security, safe and nutritious food, income/livelihood for all (socio-economic outcomes), and sustainable and climate-resilient environment (environmental outcomes)(see Figure 1, based on van Berkum et al., 2018)

The private sector, NGOs, and knowledge institutes all play an essential role in this system. So when the challenges are significant due to climate change, global developments, sustainability, and population pressure, the system needs to change, and all parties play a role in making this happen. The critical issue is who will do what and how to align, to reach the long-term goal of food security for all.

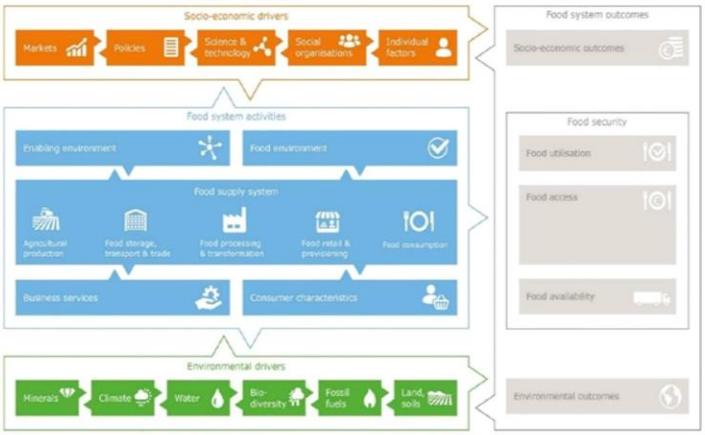


Figure 1: Schematic overview of agricultural and food system (Adapted from van Berkum et al., 2018)

iii. ATP: Recommendations from Key Stakeholders

Key Recommendations and Outputs preparatory discussion from preparatory meeting 30 March

All stakeholders positively acknowledged the growth of the agriculture sector. Alignment between agricultural transition and longer term planning as in BDP2100 are essential. In order to sustain growth and benefit from arising opportunities the following recommendations have been put forth:

- Support the private companies, entrepreneurs and farmers by increasing access to national instruments such as subsidies, crop insurance and access to finance that are inclusive.
- Strengthen efforts to enhance cropping intensity of land, improving soil health and integrated pest management, using balanced fertilizer, developing climate tolerant varieties of crops and increasing mechanization to maximize sustainable use of land and ensuring profitability.
- Decrease post-harvest loss, increase access to storage and cold chains to protect permissible items
- Taking climate resilient and climate smart agriculture approaches and increase implementation of environmentally sound agricultural practices.
- Ensure proper regulations, testing, and certification procedures for export of agricultural produce and processed agri-food products.
- Farmers are important to ensure save and sufficient food for the nation, and farmers should feel valued. The sigma surrounding farming as a profession should be mitigated by ensuring profit from farming. The agriculture sector should be attractive for youth and women.

For instance, to support the ATP, the Food and Agricultural Organization of the United Nations initiated a new holistic approach to agriculture/food system coordination. The ATP iTAG group was formed on 27 October 2021, with the first meeting being held on 3 April 2022. The working group consists of government and development partners' representatives and is endorsed by the Ministry of Agriculture.

Recommendation from ATP iTAG group

All stakeholders agreed on the necessity of ATP and recommended some next steps for the further development and implementation of an effective ATP.

- In-depth gap analysis on investment potentialities in different thematic areas of agriculture system
- Innovations, modernization and commercialization of agriculture, active participations of the stakeholders
- Policy intervention and innovation in agriculture system
- Alignments of projects/programs interventions research institutions
- Involvement of the private sector
- Coordinated work of the government, development partners, FAO, research institutions
- Support for inclusive and digital agricultural transformation
- Development of market hubs, cold storage, warehouse and cool chains
- Profitable and sustainable agriculture with consideration of fourth industrial revolution.
- Mapping the investment requirements of ATP

iv: Bangladesh Delta Plan 2100 and its alignment with ATP

In 2018, the Bangladesh Delta Plan 2100 (BDP2100) was approved by the National Economic Council to achieve a safe, climate-resilient, and prosperous Bangladesh Delta by the year 2100. The BDP 2100 includes a combination of long-term strategies and subsequent interventions for ensuring long term water

and food security, economic growth, and environmental sustainability while effectively reducing vulnerability to natural disasters and building resilience to climate change and other delta challenges through robust, adaptive, and integrated policies, strategies, and equitable water governance.

All BDP 2100 goals are fully linked with SDG goals, and this linkage will be continued in the 8th Five Year Plan (FYP) and the 2nd Perspective Plan (2021-2041) in achieving Bangladesh's Vision for the year 2041. In the BDP 2100, strategies, as well as interventions, are devised at three levels: the national level (flood risk management and freshwater supply), six hotspot areas, and strategies for cross-cutting issues, e.g., sustainable land use and spatial planning; agriculture, urban, inland water transport, renewable energy and preparedness for natural disasters. The common goals make alignment between ATP and BDP2100 obvious, and a clear next step is necessary.

v: Jointly making ATP happen

To make ATP happen, the matter is to work jointly. Not any single party will be able to make it happen on its own, and the question is how to do it together and who will do what.

When looking at the figure for agriculture and food systems, it is clear that ATP takes the value chain (the blue blocks) central stage. It may be expected that creating better and sustainable circumstances for agricultural production and the development of climate-smart agriculture, including adaptation to climate change, will be taken up by the government, NGOs, knowledge institutes, and the private sector. In contrast, better production storage will require investment from the government and private sector. The banking sector and IFIs will improve business services. Farmers will be feeding the nation. The government will provide new mechanisms for ensuring it. Export facilities are improved, and rules and regulations to do so developed. Testing facilities for food safety will be further developed, jointly with policies and regulations for main food and environmental protection. BDP2100 will assist in ensuring the right environmental circumstances (land, water, climate), e.g., through investments in char development, embankment and dredging programs, etc.).

vi: Break out session on Agricultural Transformation Program (ATP) in BDP 2100 conference

At the International Conference on the Bangladesh Delta Plan 2100 on 26 and 27 May, an interactive break-out session will be organized to create the joint commitment and action for the ATP, also in alignment with the BDP2100. Making such a commitment will be an essential milestone, jointly taken by leading parties from Bangladesh and abroad.

In the Break out session, we will, after an introduction summarizing the need for ATP (what), discuss the way forward with ATP (who – how – when) and the alignment of the ATP with the Bangladesh Delta Plan 2100, based on the future challenges and opportunities in agriculture. It is clear to all concerned that this is a multi-stakeholder activity, which none of the involved parties can do alone.

Objective and scope of the session

The goal is to discuss and agree on how agriculture transitions to a sustainable and prosperous future will occur within the ATP and who will take action. The commitment will be clear and consolidated by an agreement/partner statement following the conference.

Key issues will be addressed: Who takes the lead on what, and how will it be done? In the discussion,, three key areas can be identified

Annex D: Concept paper of the Side event

Concept paper on Valuing Water Initiative

Concept Note of the Valuing Water Thematic Session

Background

The Honorable Prime Minister of Bangladesh was a member of the United Nations and the World Bank High Level Panel on Water, which prioritized Valuing Water as an action to achieve sustainable water resources management. The National Steering Board of the BWMSP set up the High-Level Valuing Water Committee in 2018, chaired by a Principal Coordinator (SDG Affairs), to lead this initiative. It is supported by a Technical Valuing Water Committee. The Valuing Water initiative in Bangladesh is the first national-level initiative on valuing water anywhere in the world and the activities under the High-Level Valuing Water Committee are considered potential "lighthouse" examples to demonstrate international best practice to transform water resources management. The underlying position paper has been approved and was published in August 2020.

In policy and investment decisions, the consideration of all benefits and costs related to water provides the foundation for sustainable water management and long-term socioeconomic development. In Bangladesh, these benefits and costs related to water are currently not being explicitly considered. This may result in substantial misallocation of resources, which can lead to localized severe groundwater over-abstraction and water shortages, surface water pollution, and flooding. The approach of the Valuing Water initiative provides the basis for recognizing and considering all costs and benefits provided by water, including their economic, social, and ecological dimensions (Bellagio Principles, 2017). Valuing water has been included in the strategy for water resource management in the 8th Five Year Plan of the country. This is expected to allow the use of the social value of water value to be institutionalized and strengthening of the relevant agencies so that water value can be mainstreamed in the regular investment decision making process in terms of project development, appraisal, water use policy etc.

In cooperation with the Ministry of Water Resources, the High-Level Valuing Water Committee and the Technical Valuing Water Committee developed a Proforma Feasibility Study to Develop Operational Shadow Prices for Water to Support Informed Policy and Investment Decision-Making Processes. The specific objective of the study was to estimate the economic value of water in four sectors, viz., Agriculture, Industry, Municipal Residential water Use and Ecosystems. The industry sector was further divided into four (4) subsectors such as Power Generation, Construction, Food and Beverage and Apparels. The PFS was successfully completed, and the final report was published in early 2022. The PFS provided a large range of recommendations among which three were considered high priority: re-estimate the values with better data and samples; piloting in already approved projects to check the sensitivity regarding economic feasibility; and create a mechanism through which water accounting data can be collected.

Objectives and scope of the session

The objectives and scope of the session are as follows:

- Providing the participants with the diverse range of views in the valuing water space
- Creating a road map for adopting valuing water in public decision making and especially in the delta investment projects
- Ensuring the participation of the private sector in the valuing water initiative
- Creating mass awareness for valuing water which may lead to adoption of better water practices in general

Proposed agenda of the session

Chair: Ms. Zuena Aziz, Principal Coordinator, SDG Affairs, Prime Minister's Office

Moderator:

- Md. Delwar Hossain, Director General, WARPO, MoWR
- Mr. Sayef Tanzeem Qayyum, Regional Manager, 2030 WRG, Water Global Practice, World Bank Group

Presentations:

1. Keynote presentation by 2030 Water Resources Group, Water Global Practice, World Bank
2. Netherland's Valuing Water Initiative presentation on their activities by Ms. Iris Bijlsma, Lead of the Valuing Water Initiative, Government of the Netherlands
3. Presentation on PFS on operationalizing shadow prices for water in Bangladesh by Director (Planning), WARPO

Panel for Discussion and Q&A:

- Md. Delwar Hossain, Director General, WARPO, MoWR
- Mr. Sayef Tanzeem Qayyum, Regional Manager, 2030 WRG, Water Global Practice, World Bank Group

- Panel Members:
  1) Dr. Mohammad Rezaur Rahman, Professor, IWFM, BUET
  2) Mr. Raquibul Amin, Country Representative, IUCN
  3) Dr. Enamul Haque, Professor of Economics, East West University, Dhaka, and, Director Asian Center for Development, Bangladesh
  4) Mr. Toaha Muhammad, 2030 WRG, Water Global Practice, World Bank Group, Dhaka

Concept paper on Youth Panel Dialogue

International Conference on the Bangladesh Delta Plan 2100

Bangladesh Delta Plan 2100 – Youth Action Track Session

Session Host: International Centre for Climate Change and Adaptation (ICCCAD)

Session Date: 26TH May 2022 **Time: 16:15 – 17:15**

Concept Note

As the largest delta of the world, Bangladesh faces delta challenges which are related to water safety and food security. Moreover, the country is vulnerable for floods, cyclones, and drought which frequency will increase with climate change. The Bangladesh government approved the Bangladesh Delta Plan 2100 (BDP2100) in 2018, with the ambition to achieve a safe, climate-resilient and prosperous delta.

Since youth make up around a third of Bangladesh's total population, they form an important group of stakeholders. The 2030 Sustainable Development Goals Agenda also recognizes young people as critical agents of change. Also, H.E. Prime Minister Sheikh Hasina herself stressed that empowerment of youth is vital so that they can become responsible actors for water inclusiveness, efficiency and sustainability. Indeed, young people all over Bangladesh applied to be part of BDP Youth Action Track, indicating their wish and interest to be more involved in BDP2100 – not only as beneficiaries but as partners that are engaged in the decision-making processes. The objective of the Youth Action Track (YAT) was therefore to mobilize young Bangladeshi professionals (who study or work in areas such as water management, climate change, food production, environmental science etc.) and bring them together around BDP2100. As youth are not just the future but also the now, the program recognizes them as important stakeholders in the BDP2100 processes and invited them to share their ideas and suggestions for BDP2100.

In order to connect these youth to BDP2100, the Youth Action Track (YAT) was set-up by the Wageningen University (WUR), International Center for Climate Change and Development (ICCCAD), with funding from the Kingdom of the Netherlands and support from the Netherlands Embassy in Bangladesh (EKN). The YAT was implemented from October 2021 to January 2022, in which a first cohort of 25 youth leaders enrolled. Within this track they were informed about the BDP2100 and encouraged to take action for increasing awareness on and implementation of the BDP2100. They attended various presentations divided across four webinars to create a mentality that links theory to action. A total of seven subjects were discussed during these webinars: Overview of the BDP2100, Youth leadership, Long-term planning, Case coast, BDP2100 and cities, Act now- dialogue and action points and Contribution of Youth. A final session focusing on connection and sharing outputs was also organized. Active participation, in combination with

links to and input from major experts on the Bangladesh Delta Plan 2100 (BDP2100), supported youth to act on their BDP2100 priority issues - before, during and after the conference.

At this International Conference on BDP2100, we connect these youth to experts, to share experiences and knowledge on how to create a space for young professionals to engage actively with the implementation of BDP2100. To further this collaboration, we propose the following during the International Conference on the Bangladesh Delta Plan 2100:

Objectives

1. To provide one (dedicated) youth session within the Conference Agenda titled **"BDP2100 Youth Action Track: Lessons and Ways Forward"**
    - Speakers (moderators and youth participants) will present the BDP2100 Youth Action Track and host a facilitated Q&A between youth participants and experts, to exchange ideas on BDP2100 implementation and how youth can be involved.

Participants at the conference will be able to provide their valuable feedback during discussion sessions

2. To incorporate the youth participants in the broader agenda of the conference
    - Encourage the youth participants of the YAT (and other youth members) to actively participate during the conference sessions, share their voices and concerns about the role of youth in implementing the Delta Plan 2100.

Overall Session Time **16:15 - 17:15** Session Title: **Youth Panel Dialogue**		**Chairperson:** - Dr. Shamsul Alam, Hon'ble State Minister, Ministry of Planning **Panel Discussants:** 1. Mr. Mohibul Hassan Chowdhoury, MP, Hon'ble Deputy Minister, Ministry of Education 2. Mr. Kabir Bin Anwar, Senior Secretary, Ministry of Water Resources. 3. Ms Mercy Tembon, World Bank Country Director Bangladesh 4. Dr. Saleemul Huq, Director, ICCCAD **Moderator:** -Ms. Roos Middelkoop, NL Embassy in Bangladesh -Ms. Benzir Huq Mou, SIBDP -Ms. Alexia Sotiriadou, Delta Context -Shohail Bin Saifullah, ICCCAD **Youth Panel Speaker:** -Faisal Mahmood -Ludmila Sarah Khan -Arif Chowdhury - Maria Mehrin
Time	**Activity**	**Personnel**
16:15 – 16:20	Welcome (Anchor) & Opening Remarks	**Ms. Benzir Huq Mou, SIBDP** (Anchor) **Dr. Saleemul Huq (OBE), Director, ICCCAD**
16:20 – 16:25	Overview by Organizer	**Ms. Roos Middelkoop**, NL Embassy in Bangladesh **Ms. Alexia Sotiriadou**, Delta Context **Mr. Shohail Bin Saifullah**, ICCCAD
16:25 – 16:30	Youth Speakers	**Faisal Mahmood** **Ludmila Sarah Khan** **Md Amzad Hossain** **Maria Mehrin**
16:30 – 17:00	Guided Discussions	**Youth Speakers & Panel Discussants**

17:00 – 17:05	Speech by Chairperson & Vote of Thanks	**Dr. Shamsul Alam, Hon'ble State Minister, Ministry of Planning**
17:05-17:15	Certification and Picture moment	**Ms Paula Schindeler,** NL Embassy in Bangladesh

Annex E: Participant List

Sl.	Name	Designation	Organization
The Prime Minister's Office (PMO's)			
1	MA Rahman		BIDA
Ministry of Planning (MoP)			
2	Dr. Shamsul Alam	Hon'ble state Minister	MoP
3	Md. Abdul Aziz	PS	MoP
4	Moshama Naznin	Deputy Secretary	ERD
5	Shah Md. Habibul Hasan	Deputy Secretary	ERD
6	Dr. Nurunnahar	Joint Secretary	IMED
7	Dr. Md. Taibur Rahman	Director	IMED
8	Jewel Mia		Planning Division
9	Prodip Rahman Chowdhury		Planning Division
10	Mst. Nasima Begum	Member	Planning Commission
11	Md. Nazib	Chief (Additional Secretary)	Planning Commission
12	Dr. Md. Kawsar Ahmed	Member (Secretary)	GED
13	Khan Md. Nurul Amin NDC	Additional Secretary and Chief	GED
14	Md. Nazrul Islam	Additional Secretary and Project Director, SIBDP	GED
15	Mohammad Md Anisuzzaman	Deputy Chief	GED
16	Mohammad Asaduzzaman Sarker	Deputy Chief	GED
17	Jahanara Rahman	Deputy Chief	GED
18	Md. Bazhar Rahman	Joint Secretary	GED
19	Md. Forhad Seddeque	Joint Secretary	GED
20	Hosne Ara Popy	Senior Assistant Chief	GED
21	Mirza Md Mohiudin	Senior Assistant Chief	GED
22	Iffat Tanjia	Senior Assistant Chief	GED
23	Md. Mehedi Hasan	Senior Assistant Chief	GED
24	Mohammad Fahim Afsan Chowdhury	Senior Assistant Chief	GED
25	Nahida Akter	Senior Assistant Chief	GED
26	Runa Laila	Senior Assistant Chief	GED
27	Shabikunnahar Sharmin	Senior Assistant Secretary	GED
28	Shimul Sen	Senior Assistant Secretary	GED
29	Shamim Muhammad Babar	Assistant Secretary	GED
30	Md. Faysal Islam		GED
31	Md. Mustrul Khan		GED
32	Salma Khan		GED
33	Md. Zayed Hossain		GED
34	Selim Reza		GED
35	Dr. Jaap De Heer	Team Leader	SIBDP 2100
36	Giasuddin Choudhury	Deputy Team Leader	SIBDP 2100
37	Md. Mafidul Islam	Institutional Specialist	SIBDP 2100
38	M Rafiqul Islam	Institutional Specialist	SIBDP 2100
39	Md. Amirul Hossain	Senior Water Resources Engineer	SIBDP 2100
40	Dr. Fahim Faisal	Consultant	SIBDP 2100
41	Md. Sabbir Ahmed	Water Resource Engineer	SIBDP 2100
42	Benzir Huq Mou	Water Resource Engineer	SIBDP 2100
43	Md. Shaheen Reza	Manager Accounts	SIBDP 2100
44	Tania Islam	Communication Specialist	SIBDP 2100
45	Farhana Ahmed	Administrative Officer	SIBDP 2100
46	Anik Ahmed	Program Assistant	SIBDP 2100

Sl.	Name	Designation	Organization
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48	Md. Mahedi Hasan	Program Assistant	SIBDP 2100
49	Md. Mahidul Islam		SIBDP 2100
50	Tapos		SIBDP 2100
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49	AKM Enamul Haque Shamim, MP	Hon'ble deputy Minister	MoWR
50	Mr. Zaheed Farooque, MP	Hon'ble state Minister	MoWR
51	Mr. Kabir Bin Anwar	Senior Secretary	MoWR
52	K.M Abul Kalam Azad	Deputy Secretary	MoWR
53	Md Taufiqul Islam	Deputy Secretary	MoWR
54	Abdullah al Arif	Deputy Secretary	MoWR
55	Mohammad Gias Uddin	PRO	MoWR
56	S.M Azharul Islam	Ps to Secretary	MoWR
57	Fazlur Rashid	DG	BWDB
58	Dr. Zia Uddin Baig, PEng.	Additional Director General	BWDB
59	A.K.M Shariful Islam	Additional Chief Engineer	BWDB
60	A.K.M. Momtaj Uddin	Director General (Retired)	BWDB
61	A.M Aminul Haque	DG (Retired)	BWDB
62	Dr. Jiban Kumar Sarker	Superintending Engineer	BWDB
63	Dr. Robin K. Biswas	Superintending Engineer	BWDB
64	Dr. Shamal Chandra Das	Chief Engineer (Planning)	BWDB
65	Jato Proshad Ghosh	ADG (West)	BWDB
66	Jyed hasan Imam	Additional Chief Engineer & PD, CEIP	BWDB
67	MA Mem Razul	ADG (EAM)	BWDB
68	Mahbur Rahman	Additional Director General - ER	BWDB
69	Mallick Sayeed Mhmud	ADG - Admin	BWDB
70	Mashiur Rahman	Superintending Engineer/ Project Director	BWDB
71	Md Rumi Moniruzzaman	Photographer	BWDB
72	Md. Abdul Hannan	Chief Engineer, Hydrology	BWDB
73	Md. Abdul Motin Sarker	Chief Engineer	BWDB
74	Md. Habibur Rahman	ADG - Retired	BWDB
75	Md. Ruhul Amin	Additional Chief Engineer and PD	BWDB
76	S.M Ajior Rahman		BWDB
77	Sayeed Ahammad	Additional Chief Engineer & PD, CDSP	BWDB
78	TM Rashedul Kabir	Superintending Engineer	BWDB
79	Mihir Kumar Chakraborty	Deputy Team Leader	CDSP
80	Md Mashuk Miah	Director General	DBHWD
81	Dr. ALi Muhammad Omar Faruk	Director	DBHWD
82	Pintu Karnungor	Director	RRI
83	A.K.M Ashrafuzzaman	Principal Scientific Officer	RRI
84	Uma Saha	Principal Scientific Officer	RRI
85	Md. Delwar Hossain	DG (Add. Secretary)	WARPO
86	Dr. Aminul Haque	Principal Scientific Officer	WARPO
87	Md. Ekram Molla	Principal Scientific Officer	WARPO
88	Mohammad Alamgir	Principal Scientific Officer	WARPO
89	Md. Hasan Shahriar	Senior Scientific Officer	WARPO
90	Dr. Manjur Ahmed Chowdhury	Chairman	National River Conservation Commission
91	Md. Mahmudur Rahman	Member	JRC
92	Malik Fida A Khan	Executive Director	CEGIS

Sl.	Name	Designation	Organization
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94	Md Mostafizur Rahman	Principal Specialist	CEGIS
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96	Dr. Farhana Ahmed	Senior Specialist	CEGIS
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98	Dr. Md. Ruknul Ferdous	Senior Consultant	CEGIS
99	Dr. Mominul Haque Sarkar	Senior Advisor, River, Delta and Coastal Morphology	CEGIS
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104	Rifat Jahan	Research Associate	CEGIS
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107	Sudipta Kumar Hore	Associate Specialist	CEGIS
108	Md. Monowar-ul Haq	Junior Specialist	CEGIS
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111	Md. Sohel Masud	Director	IWM
112	Ismat Ara Pervin	Senior Specialist	IWM
113	Md. Musfequzaman	Senior Specialist	IWM
114	Md. Tohidul Islam	Senior Specialist	IWM
115	Morsheda Begum	Senior Specialist	IWM
116	Shume Akhter	Senior Specialist	IWM
117	Upal Mahmud	Senior Specialist	IWM
118	Saiful Alam Khan	Manager	IWM
119	Mohammod Samiun Nabi	Manager (Business & Strategy)	IWM
120	Md. Rakibul Hasib	Associate Specialist	IWM
Ministry of Agriculture (MoA)			
121	Dr. Muhammad Abdur Razzaque, MP	Hon'ble Minister	MoA
122	Md. Ruhul Amin Talukder	Additional Secretary	MoA
123	Md Razib Siddique	Deputy Secretary	MoA
124	Nasima Khanom	Deputy Secretary	MoA
125	Tanim Zeben Bentea	Senior Assistant Secretary	MoA
126	Arif Mohammad Mozakker	Additional Deputy Chief	DAE
127	Dilip Kumar Adhikary	Director, Planning Wing	DAE
128	Dr. Md. Akram Hossain Chowdhury	Project Director, DAE and Focal Point, BDP 2100, Khamarbari, Dhaka.	DAE
129	Md. Zahirul Hassan	Additional Agricultural Officer	DAE
130	Mohammad Humayun Kabir	Agricultural Officer	DAE
131	Engr. Sultan Ahmed	Chief Engineer	BADC
132	Md. Aminul Islam	Joint Secretary	BADC
133	Mohammad Khasru Noman	Principal	BADC
134	Mohammad Zafar Ullah	Chief Engineer	BADC
135	Dr. Md. Mosharraf Uddin Molla	Member Director (AERS)	BARC
136	DP Apurba Kanti Chowdhury	Director	BARI
137	Begum Aktar Saar		BMDA
138	Engr. Md. Jahangir Alam Khan	Superintending Engineer	BMDA
139	Md. Jahangir Alam Khan	SE	BMDA

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141	S.M. Rezaul Karim, MP	Hon'ble Minister	MoFL
142	Dr. A.N.M Abdus Sabur		MoFL
143	Forid Hossain		MoFL
144	Md. Iftekher Hossain	PRO of Minister	MoFL
145	Md. Mobarok Hossain	Manager	MoFL
146	Mijanur Rahman		MoFL
147	Dr. Md. Sharif Uddin	Director	DoF
148	Dr. Mohammad Jesmin Hossain Chowdhury	Deputy Chief (Marine)	DoF
149	Md. Magfur Rahman Lotif	Deputy Secretary	DoF
150	Shamim Ara Begum	Director	DoF
151	Md. Moyaeem Hossain	DG (Grade-1)	DLRS
152	Mohd Moniruzzaman	Deputy Director	DLRS
153	Dr. Harun Md Salim	Director (In-charge), Planning	DLS
154	Dr. Monjur Mohammad Sahjada		DLS
155	Dr. Sm Jahangir Hossain	Director General	BLRD
Ministry of Environment, Forest and Climate Change (MoEF&CC)			
156	Mr. Md. Shahab Uddin Ahmed, MP	Hon'ble Minister	MoEF&CC
157	Dr. Farhina Ahmed	Secretary	MoEF&CC
158	Zakir Afroz	Joint Secretary	MoEF&CC
159	Md. Amir Hossain	Chairman	Forest Department
160	Dr. Md. Zaglul Hossain	Deputy Chief Conservator of Forests	Forest Department
161	Md. Huzur Ahmed	Joint Secretary	Forest Department
162	Md. Harunor Rashid	Senior Scientific Officer	BFRI
163	Md Khairul Islam	Director	BCCT
Ministry of Foreign Affairs (MoFA)			
164	Md. Saidul Billal		MoFA
165	S.M Zakir Hossain	Additional Secretary	Blue Economy Cell
Ministry of Housing and Public Works (MoHPW)			
166	Shakila Sepin Ahmed	Additional Secretary	MoHPW
167	Dr. K.Z Hossain Toufique	Director	Urban Development Directorate
Ministry of Local Government, Rural Development and Cooperatives (MoLGRD&Co)			
168	Mr. Md. Tazul Islam, MP	Hon'ble Minister	MoLGRD&Co
169	Mohammad Mezbah Uddin Chowdhury	Secretary	LGD
170	Abu Md. Mohiuddin Mahbub	Joint Secretary	LGD
171	Sk. Md. Mohshin	Chief Engineer	LGED
172	Abu Md. Mohiuddin Quaderi	Joint Secretary	LGED
173	Gopal Krishna	Superintending Engineer and Focal Point	LGED
174	Gopal Krishna Debnath	Additional Chief Engineer	LGED
175	M.A. Sattar	Executive Engineer	LGED
176	Md. Abul Kalam Azad		LGED
177	Md. Nasim Hossain	XEN UGHP-3	LGED
178	Md. Nasir Hossain	Executive Engineer	LGED
179	Nurul Islam Sarker	Executive Engineer & PD Small Scale Wat	LGED
180	Prokash Chandra Biswas	Superintendent Engineer	LGED
181	S.M Nazrul Islam	Project Director, CTEIP	LGED

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183	Engr. Mohammed Anowar	SE, Planning Chief	DPHE
184	Md. Anwar Eusuf	SE, Planning Chief	DPHE
185	Eng. Taqsem A. Khan	MD and CEO	DWASA
186	Engr Md Abul Kashem	Director, Development	DWASA
187	Syed Shihabur Rahman	Executive Engineer	DWASA
188	Modod Shak	Chairman	BRDB
189	Jomir Uddin Parvez	Mayor	Raozan Pourashova, Ctg
190	Md Nazrul Islam	S.M Trading	Raozan Pourashova, Ctg
191	Md. Jone Alam Jony	Councilor	Raozan Pourashova, Ctg
192	Najma Rahman Rohe		Raozan Pourashova, Ctg
193	Nazma Rahman (Rohe)	Roazan Golura Ideal School	Raozan Pourashova, Ctg
194	Syed Akram Al	E.D WARD	WARD Keshabpur, Jessore
195	Rafianal Islam	Mayor	Kashabpur Pourashova, Jashore
Ministry of Shipping (MoS)			
196	Shaikh Sharif Uddin NDC	Joint Secretary	Ministry of Shipping
197	Commodore Golam Sadeq	Chairman	BIWTA
198	Md Mijanur Rahman	Superintending Engineer	BIWTA
199	Md Sirazul Islam Bhuiya	Deputy Director (Admin)	BIWTA
200	Md. Mibanur Rahman Bhuiya	Superintending Engineer	BIWTA
201	Md. Mohiuddin Chowdhury	Joint Director	BIWTA
202	Md. Saidur Rahman	Additional Chief Engineer	BIWTA
203	Mobarak Hossain Mozumder	Deputy Director (PBO) BIWTA	BIWTA
204	Commander Mohammad Hasan	Chief Hydrographer	Payra Port Authority
205	Md. Zahirul Huq	Chief Planning	Mongla Port Authority
Ministry of Disaster Management and Relief (MoDMR)			
206	Rabindra Nath Barman	Additional Secretary	MoDMR
207	ABM Shafiul Haider	Joint Secretary	MoDMR
208	Md. Sharafat Hossain Khan	Deputy Director (Admin)	Cyclone Preparedness Program
Ministry of Land (MoL)			
209	Md. Zahurul Haque	Additional Secretary	MoL
210	Dr. Razzaul Islam	Deputy Secretary	MoL
211	Dr. Md Razzaqul Islam, PAA	Deputy Secretary (PS of Minister)	MoL
212	S.M. Golam Robbani	Deputy Secretary	MoL
213	A.T.M Azharul Islam Mamun	Deputy Secretary	MoL
214	Dr. Md. Rabbaqul Islam	PS	MoL
Ministry of Chattogram Hill Tracts and Affairs (MoCHTA)			
215	Kazi Moklesur Rahman	Deputy Secretary	MoCHTA
216	Md. Hazur Ali	Joint Secretary	MoCHTA
217	Md. Abu Issa Ansary	Town Planner	Chattogram Development Authority
218	Sourav Biswas	Assistant Town Planner	Chattogram Development Authority
Ministry of Civil Aviation & Tourism (MoCAT)			
219	Md. Mokammal Hossain	Secretary	MoCAT
220	Golam Nabi		CAAB
221	Golam Reza		CAAB
Ministry of Industry (MoI)			
222	Md Nurul Alam	Additional Secretary (Planning)	MoI
Ministry of Defence (MoD)			
223	Capt M Minarul Hoque	DG	Bangladesh Institute of Maritime Research and Development (BIMRAD)
Ministry of Liberation War Affairs (MoLWA)			

Sl.	Name	Designation	Organization
224	Ranjit Kumer Das	Secretary	MoLWA
225	Abul Baker Md Touhid	Deputy Secretary	MoLWA
Ministry of Power, Energy & Mineral Resources (MoPEMR)			
226	Md. Golam Mostafa	Additional Secretary	SREDA, Power Division
Ministry of Food (MoF)			
227	AKM Mamunur Rashid	Joint Secretary	MoF
228	Md. Mahbur Rahman	Research Director	MoF
229	Md. Mojibor Rahman		MoF
230	Habibur Rahman		MoF
231	Md. Shakhawat Hossain	DG (Gr-1) Food	DoFood
Ministry of Education (MoE)			
232	Mr. Mohibul Hassan Chowdhoury, MP	Hon'ble Deputy Minister	MoE
233	Md. Abu Bakar Siddique	Secretary	MoE
Ministry of Youth and Sports (MoYS)			
234	Md Arifuzzaman	APD, DMPB	Department of Social Services
Development Partners			
235	Mercy Tembon	Country Director	The World Bank
236	Analuisa Gomes Lima	Senior Environmental Specialist	The World Bank
237	Arif Ahamed	Senior Water and Sanitation Specialist	The World Bank
238	ATM Khaleduzzaman	Senior WRM Specialist	The World Bank
239	Bunlra Nulut	Eng. Specialist	The World Bank
240	Bushra Nishat	Environment Specialist	The World Bank
241	Debashish Paul Shuvra	Disaster Risk Management Analyst	The World Bank
242	DEO Marvel Nioneku		The World Bank
243	Dhima M Samhr	Consultant DRM	The World Bank
244	Dr Sharif Ahmed Mukul	Consultant	The World Bank
245	Eun Joo Allison Yi	Senior Environmental Specialist	The World Bank
246	Ignaeio Umta	Senior DRM Specialist	The World Bank
247	Kirti Nishan Chakma	Social Safeguard Specialist	The World Bank
248	Lilian Pena	Lead Water Specialist	The World Bank
249	Lorgis Urrufia	Senior Disaster Risk Management Specialist	The World Bank
250	Md. Akhter Hossain	Specialist	The World Bank
251	Md. Towshik ur Rahman	Technical Consultant	The World Bank
252	Mohammad Abdul Basit	Disaster Risk Management Consultant	The World Bank
253	Mohammad Rahman Islam		The World Bank
254	Muhammad Karul Islam		The World Bank
255	Niyungeko	DEO- Manager	The World Bank
256	Olivia Sarker	Consultant	The World Bank
257	Partha Protim Nath	Consultant	The World Bank
258	S.M Mehedi Hasan	Consultant	The World Bank
259	Sabah Moyeen	Senior Social Development Specialist	The World Bank
260	Salam Mahmud		The World Bank
261	Sayed Ishteq Ahmed	Consultant	The World Bank
262	Shenha Wang	Senior Urban Development Specialist	The World Bank
263	Sk. Towhidur Rahman	Consultant	The World Bank
264	Swarna Kazi	Senior DRM Specialist	The World Bank
265	Syed Ishtiaque Ahmed		The World Bank
266	Taslkim Hadin	Team Associate	The World Bank

Sl.	Name	Designation	Organization
267	Yutaka Yoshino	Lead Country Economist	The World Bank
268	Anisuzzaman Chowdhury	Program Manager	JICA Bangladesh
269	Daisuke Ito	Country Officer	JICA Bangladesh
270	YUHO Haya Kawa	Chief Representative	JICA Bangladesh
271	Amit Datta Roy	Senior Project Officer	ADB
272	Masjaar Chowdhury	Water Resources Specialist	ADB
273	Abu Sanoy Bockhrie		Islamic Development Bank
274	S. M. Mehedi Ahsan	Senior Urban Resilience Specialist	KFW Development Bank
275	Charles Whiteles		WBG
276	Dr. Gayafio Acharya		WBG
277	Enamul YI		WBG
278	Md Habibur Rahman		WBG
279	Sumila Gulyani		WBG
Embassy			
280	Anne van Leeuwen	H. E. Ambassador	Netherlands Embassy
281	Bas Blaage is	Secretary	Netherlands Embassy
282	Anar Jages		Netherlands Embassy
283	Cor Stoufen		Netherlands Embassy
284	Folkert de Jager	1st Secretary and Thematic Expert	Netherlands Embassy
285	Martijn van de Groep	Delegated Representative Water	Netherlands Embassy
286	Michiel Slotema	Program Coordinate FDW	Netherlands Embassy
287	Mohanagor		Netherlands Embassy
288	Monwar		Netherlands Embassy
289	Muna Tamim		Netherlands Embassy
290	Namia Akter		Netherlands Embassy
291	Oamic Labarmi		Netherlands Embassy
292	Osman Harun	Senior Policy Admission FNS	Netherlands Embassy
293	Paula Schideler	Deputy Head mission of the Embassy of The Kingdom of the Netherlands	Netherlands Embassy
294	Reazuddin Khan	Senior Water Expert	Netherlands Embassy
295	Roos Middelkoop		Netherlands Embassy
296	Tolkevtg cl Jages		Netherlands Embassy
297	Wlan sdusfoc		Netherlands Embassy
298	Pham victclmi	Ambassador	Vietnam
299	Marjan Nur	Climate Change Policy Manager	British High Commission, Dhaka
Ministry of Science and Technology (MoST)			
300	Md. Ripon Uddin	Scientific Officer	Bangladesh Council of Scientific and Industrial Research (BCSIR)
Public/ Private Universities			
301	AKM Saiful Islam	Professor and Director, IWFM	BUET
302	Dr. Rezaur Rahman	Professor, IWFM	BUET
303	Dr Goutam Kumar Kundal	Assistant Professor	DU
304	Dr K.M Azam Chowdhury		DU
305	Dr. Goutam Kumar Kundol	Assistant Professor	DU
306	Dr. Kazi Mohshin		DU
307	Dr. M Shamsur Rahman		DU
308	Dr. Mohammad Raknuzzaman	Professor	DU
309	Jasim Tasnim		DU
310	M. Shahidul Islam	Professor, Dept. of Geography and Environment	DU
311	Mahidul Islam Khan		DU
312	Makidnl Islam Khan	Research Associate, International Central for Ocean Governance,	DU

Sl.	Name	Designation	Organization
313	Md. Momtaz Uddin, ndc	Additional Secretary	DU
314	Mohidul Islam Khan	Research Associate, International Centre for Ocean Governance	DU
315	Prof Dr. M Shamim Rahman	Department of Fisheries	DU
316	Prof. Dr. M Niamul Nasir	Professor and Chairman	DU
317	Prof. Dr. Md. Eillur Rahman		DU
318	Prof. Dr. Md. Roknuzzaman	Department of Fisheries	DU
319	Prof. Kazi Mahin Ahamed		DU
320	Tahmim Jannat Mowsumi	Research Assistant, Dept. of Oceanography	DU
321	Md. Arif Chowdhury	Lecturer	Jashore University of Science & Technology
322	M.A. Baki		Noakhali Science and Technology University
323	Md. Saiful Islam	Student	Noakhali Science and Technology University
324	Mehedi Mohammad Hasan		Noakhali Science and Technology University
325	Prof Dr. Swadesh Chandra Samanta	VC	Patuakhali Science and Technology University
326	Md. Golam Nabi Azad	President, Krishi Club	Sher-e- Bangla Agricultural University
327	Prof Dr. Parimal Kanti Biswas	Dean, Faculty of Agriculture	Sher-e- Bangla Agricultural University
328	Prof. Dr. Kazi Ahsan Habib		Sher-e- Bangla Agricultural University
329	Dr. Hamidul Huq	Professor & Director, IDSS	United International University
330	Dr. Younus Ahmed Khan	Professor, Dept. of Geology and Mining	University of Rajshahi
331	Syeda Rahman Aftaj	Lecturer Political Science	Raasan College
332	Dr. Mania Zaman	Asst. Professor	BSMR Maritime University, Bangladesh
333	Prof. Dr. A.S.M Mahmudul	Vice Chairman	Bangabandhu Sheikh Mujibur Rahman Science and Technology University (BSMRSTU)
National Organization			
334	Fazle Reza Saadin	President	Bangladesh Institute of Planners
335	Kazi Salman Hossain	Urban Planner	Bangladesh Institute of Planners
336	Prof.Dr. M Shafiq Ur Rahman	Vice President	Bangladesh Institute of Planners
337	Shamsun-Al-Noor	Full Member	Bangladesh Institute of Planners
338	Imamul Azam Shahi	Programme Head Urban Dev.	BRAC
339	Adiba Bintey kamal	Research officer	ICCCAD
340	Gousia Islam Keya		ICCCAD
341	Kazi Taiba Bari Nowsheen	Intern	ICCCAD
342	Mehnaz Tanisha	Gfier	ICCCAD
343	Nazmus sakib	Youth intra	ICCCAD
344	Noor -E-Elahi	Programme Assistant	ICCCAD
345	Saib Huq	Programme Councilor	ICCCAD
346	Saleemul Huq	Director	ICCCAD
347	Shohali BasaFullah		ICCCAD
348	Sumaiya Binte Selim	Research officer	ICCCAD
349	Tasfia Tasnim	Programme Coordinator	ICCCAD
350	Ashik AL Mohbub	Krishi Club	SAU Krishi Club
351	Md. Golam Nabi Azad		SAU Krishi Club
352	Md Ruhul Kuddus Khan	Supply Chain Director	Uniliver Bangladesh Ltd.

Sl.	Name	Designation	Organization
353	Shamina Akhter	Head for Corporate Affairs Partnership	Uniliver Bangladesh Ltd.
354	Sayed Akmal Ali	ED Ward	Work & Rural Development (WRD)
355	Mehrab Sakib Jaman	CEO, Founder	Life Bangladesh
356	Sadia Rahman	Program Director	Lite of Life
357	Zannatun Naim Shorna	Director	IAAS Bangladesh SAU- Dhaka
358	Md Solaiman	President	Adarsho Chashi Agro Care
359	Farah Sharmeen Aolad	Public affairs, Communications and Sustainability Lead	Coca-Cola Bangldesh
360	M. Shahadat Hossain	Executive Director	Dnet
361	Md. Ariful Islam	Manager, Research	Dnet
362	Md. Ariful Islam	Research Manager	Dnet
363	Minhaj Chowdhury	Co-founder and CEO	DrinkWell
364	Md Akramul Haque	CEO	DASCOH Foundation
365	Md Mostafizur Rahman	Secretary	Bodorgonj Upazilla Seba dankari Krishi
366	Md. Abu Taher		Bangladesh China Chamber of Commerce & Industry (BCCCI)
367	Md Mahmudul		Abdul Monem Ltd.
368	G.R Chowdhury	President	Bangladesh Dutch Chamber of Commerce
International Organizations			
369	Robert Douglas Simpson	Representative in Bangladesh	FAO
370	A.N.M Akhadale	Assistant FAO Rep, (Professor)	FAO
371	Dipty Chowdhury	Youth Leader	FAO
372	Emdadul Haq Chairmen		FAO
373	Gazi Sipan Hossain	Specialist	FAO
374	Nur A. Khondaker	Assistant FAO Representative	FAO
375	Saso Marvos	Senior Technician	FAO
376	Umme Kulsum		FAO
377	Dr. M Emdadul Haue		2030 WRG
378	Toaha Mohammad	Consultant	2030 WRG
379	Javed Bin Karim		2030 WRG
380	Syeda Sifat Shahed		2030 WRG
381	Faisal Ahmed	Consultant	2030 WRG
382	Bashir Ahmed		Action Aid
383	Alexia Sotiriadosce	Coastal Engineer	Delta Context
384	Team Heury Laboyne		Delta Context
385	Dr. Mohamed Yossef	River Expert	Deltares
386	Kazi Inam Ahmed	Director	GEMCON
387	M Mahmudur Rahman	Principal Advisor	GIZ
388	Mohamad Ishti Hassain		GIZ
389	Hemayet Hossain		Global Alliance
390	Tanim Istiaque	Senior Program Officer	Global Center on Adaptation
391	Khandakar Elius Kandhor		Gm Manine Firhenis Dept
392	Mohammad Robiul		Greentech Foundation
393	Md. Rifat		Action Aid
394	AR Waud. Hame	Rep IFAD	IFAD
395	Arnoud Hameleers	Country Director	IFAD
396	DD Shantonu		IFAD
397	Mariel Zimmermann	Programme Officer	IFAD
398	Dr Mehrab		IFPRI
399	Mehrab Bakrtir		IFPRI
400	Bassel Younan	Regional Team Lead, Asia & LatAm	Invest International

Sl.	Name	Designation	Organization
401	Maurits Bosman	Investment Manager - South Asia	Invest International
402	Shahnoor Hasan		Invest International
403	Digbijoy Dey	Environment professional	IRC WASH
404	Dr. Ahmed Salauddin	Consultant	IRRI
405	Michiel Slohan		RVO
406	Milior Slofrn		RVO
407	Seus Sohuth		RVO
408	Partha Heta Shaikh	Director Porov Advocate	Water Aid Bangladesh
409	Ranjan Kumar Ghosh	Advocacy Specialist	Water Aid Bangladesh
410	Dr. M.A. Wahab		WorldFish
411	Catharien Terwisscha van Scheltinga	Secretary	WUR
412	Judit Snethlage	Researcher, WUR	WUR
413	Kalyan Chakrabarthy Gurtusoyin		WUR
414	Yuout Shethlage Ureancher		WUR
415	Dr. Shahnoor Hasan		Utrecht University
416	Kalgan Geentsayine		UR, NL
417	Shahidul Islam	Student	SNV
418	S.M Tanvir Hassan	Program Coordinator-IWRM	Swiss Red Cross Bangladesh Delegation
419	Md. Farhad Zamil	Country Director	Syngenta Foundation for sustainable Agriculture
420	Mohammad Azaz	Chairman	River and Delta Research Center
421	Sebastiaan Hulsbergen	Country Representative	Royal HaskoningDHV
422	Ahbar Chowdhury	Project principal, International Water	Mott MacDonald
423	Ismi W Chemisthy	All Chemlimnd Chief	Managing Director
424	M Henayet Hossain		GAIN
425	Mandira Cofha Neogi	Senior Policy Associate	GAIN
426	Shahin Mannan	Program Officer	GCA
427	Josvan Alphn		Dutch Delta Programme Commission Staff
428	DARIO Trombetta	PM	EL
429	Dr. Monowar Hossain	Professor	ESCB/BWP
430	Lion Obsyni		DCBV
431	Melvin Van dar veen		Both ENDS
432	Engr Md. Siddiqur Rahman	GS	BWP
433	Nazmun Naher	Advisor	BWP
434	AHM Bazlur Rahman	CEO	BNNRC
Media			
435	Mamun		71 Television
436	Al Masum Shobu		Bangla Vision
437	Rokon Uj-Jaman		Bangla Vision
438	Fatema Sehuly		Bangladesh Betar
439	Kaji Sayef Ullah		Bangladesh Betar
440	Md Robiul Islam		Bangladesh Betar
441	Md. Atikur Rahman		Bangladesh Betar
442	Md. Jahangir Hossain		Bangladesh Betar
443	Mohammad Ariful Islam		Bangladesh Betar
444	Shamim Ahmed		Bangladesh Betar
445	Adifya Shahun		Channel
446	Shylh Seray		Channel
447	Tawfique Ahmed		Channel
448	Shapnil Shahriar Shishir		Channel 24

Sl.	Name	Designation	Organization
449	Ashik Ahmed Khan		Channel i
450	Ashik Tanbhir Ahammad Khan		Channel i
451	Mukul Hossain	Sr Cameraman	Channel i
452	Niladri Shekhar		Channel i
453	Rassel Shah		Channel i
454	Rezvi Newaj		Channel i
455	Tariqul Ahmed		Channel i
456	Resal keir		Daily Nabochaton
457	Khairul Islam Taj	Dev Journalist	Daily Peoples Time
458	Masud Hasan Mollah Ridum	Senior Reporter	Daily Sluadesh Biehitna
459	Sadique Polash	Senior Reporter	Daily Sokaler Somoy
460	Elahia Nakib	Reporter	Dainik Anandabazar
461	Emdad Hossain		Desh Rupantor
462	Delowar		Desh TV
463	Joy Jadab		Desh TV
464	Reaz Ahmad		Dhaka Tribune
465	Md. Kabir Ahamed		Ekushe Journal
466	Habibur Rahman		Journalist
467	Md Mamun ur Rashid		Journalist
468	Md. Habibullah Mejbah		Journalist
469	Md. Tamjid Hasan		Kaler Kantho
470	Md. Mehedi Hasan		Kazla Technologies Limited
471	Monir Hossain		Kazla Technologies Limited
472	Ibtesam Nanim Nou		Masranga Television
473	Md. Ali		Masranga Television
474	Md. Ariful Alam		S.R M. Khobor
475	Salauddin Bablu		SATV
476	MV Abir		Sokaler Somoy
477	Md. Abul Habib	Reporter	Soray Jomin
478	Sikaur Ali		The Business
479	Ferdus Hossain		The Business
480	M.A.H Imran	Asst. Manager	Swadesh Protition
481	Masum Billah		Share Biz
482	Khalid Snaokiar		Shomokol
483	Md. Alauddin		RTV
484	Ajit Alch		NTV
485	Md Nasir Re		Onire
486	Md Badrad	Photographer	PID
487	Md. Moniruzzaman		PID
488	Nakib	Reporter	Anandabazar
489	Md Zakirul Islam		Bartaman Bangla
490	Md Nurul Islam	CEO	BTV
491	Md. Bellal Hossain	Reporter	BTV
492	Mohmudul Hossain	Reporter	BTV
493	Ahad Hossan Tutul		Deepto TV
Others			
494	Abdullah Engr Shahin	Student	Youth Action Track
495	Faisal Mohmood		Youth Action Track
496	Ludmila Khan	Student, University of Dhaka	Youth Action Track
497	Maria Mehrin	Student	Youth Action Track
498	Md. Amzad Hossain	Student	Youth Action Track
499	Prantor Kumar Mondol		Youth Action Track
500	Sumaiya Zakir	Student, Jahangirnagar University	Youth Action Track

Sl.	Name	Designation	Organization
501	Sohaman Rahman	Executive Coordinator	Youth Net for Climate Justice
502	Dr. Mohammad Eyamin	Secretary	
503	Dr. Shahry		
504	Jakir Hossain		
505	M. Asaduzzaman		
506	Md. Kabir Hossain	VND, Ranpal, Bagerhat	
507	Md. Omar Faruk		
508	Md. Sumon Sardar		
509	S.M Razaul	D.S. Secretary	
510	Josim Shams Salam		Uttara
511	Md. Sanaul Mahmd		Summit
512	Rita Broma Busket		Sher-e- Bangla Krishok Society
513	Bashir		Shiping
514	Md Aminul		Secretary
515	Md Saber		Rozan
516	Sabina Yasmin Labiba		Program Manager
517	Crispus M. Noery		RAO, ETEE
518	Akm Foysal Hoq		Member
519	Md. Mosihur Rahman		Keshabpur Pilot School & College
520	Faisal Mohammod	Yat Panel, BDP 2100	IHE Delft Institute for Water Education
521	Md. Helal Hossan	Joint Secretary	HSD
522	Sohanur Rahman	Controller	Controller
523	Md. Masum Rahman		CPO
524	Chrtstra Berger		GB
525	Abul Khaer Mollick		DMO
526	Md Abul Hossain		DMO
527	Md Yousuf Hossain		DMO
528	Md. Shitel		DMO
529	Riaz a Jaber		DMO
530	Mst Morsheda	Secretary	Farmers Organization
531	Farjana Nur Purabi	Sr Executive	FBECT
532	ABM Feroz Ahmed	Livelihood Adviser	FCDU
533	Noor Mohammad		EPSADA
534	Nowserul Afan		BPMA
535	Morsheda Akhter		Bisheshor ICM Club Kurigram Secretary
536	Md. Kamrul Islam		BCC
537	Sany		BCC
538	Isanak Bhuian		BDIAW NEW
539	Ferdus Alom		Biman
540	Gias Uddin		A.D.S. Nt Po
541	Omar md Imran Mohsin		Agriculture Department
542	Sayem W Chowdhury	Managing Director	Atten Company ltd
543	Moin Mohmood		B.A 10