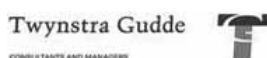




Preparations for the Bangladesh Delta Plan

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Giasuddin Ahmed Choudhury, Catharien Terwisscha van Scheltinga, Dick van den Bergh,
Farook Chowdhury, Jaap de Heer, Monowar Hossain and Zahurul Karim



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Abstract

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Water Mondiaal/Partners for Water fielded the Bangladesh Delta Plan Preparatory Team (DPT) in the period July 2011 - January 2012 to advise on a Delta Plan for Bangladesh. The team concludes that there is a need felt for and commitment to longer term integrated and holistic planning, though it is felt to be complex to do so in the dynamic context of Bangladesh. The DPT recommends 1. strong involvement of a wide range of stakeholders (government, knowledge institutes, NGOs and private sector) in the development of the Bangladesh Delta Plan; 2. the development of a shared vision using socio-economic, water management and climate change scenarios; and 3. a parallel implementation process in order to place starting implementation projects within the framework of the Bangladesh Delta Plan, already during the formulation of the plan.

Keywords: Bangladesh, Delta Plan, spatial planning, long-term integrated planning, vision, Water Mondiaal, climate change adaptation.

Prepared by the DPT, for AgentNL / Partners for Water Programme

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Wageningen, May 2012

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Abbreviations

ADB	Asian Development Bank
BDDC	Bangla Dutch Delta Committee
BDP	Bangladesh Delta Plan
DPT	Bangladesh Delta Plan Preparatory Team
EKN	Embassy of the Kingdom of the Netherlands
GED	General Economics Division
GoB	Government of the People's Republic of Bangladesh
GoN	Government of the Kingdom of the Netherlands
IFI	International Funding Institutes
MASP	Multi Annual Strategic Plan
MoA	Ministry of Agriculture
MoEF	Ministry of Environment and Forest
MoP	Ministry of Planning
MoU	Memorandum of Understanding
MoWR	Ministry of Water Resources
MTBF	Medium Term Budgetary Framework
PfW	Partners for Water
SOW	Scope of Work
TAPP	Technical Assistance Project Proforma
ToR	Terms of References
WB	World Bank
WM	Water Mondiaal

Summary

Bangladesh is a rapidly developing country, envisaging to be middle income country in 2021, though currently dealing with complex problems on safety, (food) security, population pressure and prone to natural calamities like floods, cyclones, and droughts. Currently there is already a high pressure on the available land and water resources in the delta. Current population growth is approximately two million people per year. Due to population growth, economic development and climate change, the pressures will only increase in future. There is a high need within the Bangladesh delta to improve the living conditions through better water management and governance. However, to optimize short term interventions and investment and to prepare for future change, it is necessary to develop an integrated and holistic long term vision.

The vision of developing the Bangladesh delta is to achieve long term sustainable development through adaptive water governance, based on long term analysis and scenario's as well as integration of relevant policy sectors and creation of adequate institutional arrangements and capacity, which could be termed as a 'Delta Vision'. The vision can be achieved through implementing a holistic, long term (50 to 100 years) integrated strategy and plan for Bangladesh, called Bangladesh Delta Plan. The Bangladesh Delta Plan will create a clear vision or grand design of the future in 2100. Based on that vision it will be possible to define short term 'no-regret' measures and actions leading from the present day situation to the desired future.

In July 2011 the team started with undertaking consultation with the Embassy of the Kingdom of the Netherlands (EKN) and the Water Mondiaal (WM) team in The Hague. Following various discussions within the DPT, between the team and EKN; and based on review of the ToR, the following overarching tasks were determined:

- Involvement of Government of Bangladesh (GoB) and major stakeholders in the consultation process for a potential Bangladesh Delta Plan (BDP) 2100.
- Understanding the level of commitment from GoB and major stakeholders, and providing EKN with a clear indication of the Go-No-Go moment.
- Following successful commitment and ownership establishment, outlining of contours of the BDP.
- Indication of the institutional set-up for the preparation of the Delta Preparatory Plan 2100.

Given the current socio-economic ambition in Bangladesh and in order to address the expected impacts of climate change there is a need for an integrated vision and approach on future land and water resources management. Already there is an urgent need to improve flood and fresh water resources management to protect valuable land and to improve the food production. Salt water intrusion is affecting drinking water quality and limiting food production in the coastal zone. These problems are likely to become worse due to urbanisation and population growth, sea level rise, subsidence and more frequent drought and floods.

The DPT has achieved the following:

- Commitment for the BDP from the highest level of the government has been established.
- Commitment for the BDP from a wide range of key stakeholders has been established.
- Compared to before the DPT assignment a strong awareness and knowledge seeking for the Bangladesh Delta Plan, linked to on-going activities, has been gained.
- Institutional options for championing and implementing the BDP have been identified. An independent Bangladesh - Netherlands Intergovernmental Delta Committee on Climate Change Adaptation, Disaster Management and Integrated Water Resources Management, hereinafter referred to as the Bangla-Dutch

Delta Committee, set up with necessary powers and authority to prepare and implement BDP, has been proposed.

- A broad outline of the drivers, challenges and contour of the DBP is available and has been developed through significant stakeholder participation.

The above tasks and activities complete the DPT preparatory assignment and contract. However many activities are yet to be completed and actions are necessary in the coming months to move forward. Specifically there is a need to address the items below:

- A lot of momentum and zeal have been created and established by the DPT. In order to maintain and push forward the items already under preparation such as scope of work, clear definition of the Bangladesh Delta Plan, engagement with the key stakeholders, etc. it is necessary that EKN is kept closely involved and engaged.
- At a convenient moment and place, an MoU about the Bangladesh Delta Plan is foreseen to be signed by Bangladesh and the Netherlands.
- As described earlier several technical issues and institutional details need to be clarified and appropriately assessed. This will be part of the preparation for the Bangladesh Delta Plan.
- A Bangla-Dutch Delta Committee has been proposed, to be set up as an independent body.
- More attention needs to be paid to involve the private sector, and private sector investment in Bangladesh and the Netherlands in the further development and implementation of the Bangladesh Delta Plan.

1 Introduction

1.1 Rationale

Bangladesh is a rapidly developing country, envisaging to be middle income country in 2021, though currently dealing with complex problems on safety, (food) security, population pressure and prone to natural calamities like floods, cyclones, and droughts. Currently there is already a high pressure on the available land and water resources in the delta. Current population growth is approximately 2 million people per year. Due to population growth, economic development and climate change, the pressures will only increase in future. There is a high need within the Bangladesh delta to improve the living conditions through better water management and governance. However, to optimize short term interventions and investment and to prepare for future change, it is necessary to develop an integrated and holistic long term vision.

The vision of developing the Bangladesh delta is to achieve long term sustainable development through adaptive water governance, based on long term analysis and scenario's as well as integration of relevant policy sectors and creation of adequate institutional arrangements and capacity, which could be termed as a 'Delta Vision'. The vision can be achieved through implementing a holistic, long term (50 to 100 years) integrated strategy and plan for Bangladesh, called Bangladesh Delta Plan. This Delta Plan will create a clear vision or grand design of the future in 2100. Based on that vision it will be possible to define short term 'no-regret' measures and actions leading from the present day situation to the desired future.

1.2 Objectives

On the request of the Government of Bangladesh, a Bangladesh Delta Plan Preparatory Team (DPT) was fielded during the period from July 2011 to January 2012 by the Embassy of the Kingdom of the Netherlands (EKN). The DPT consisted of a core team of 4 Bangladeshi and 3 Dutch experts. In addition the DPT consulted several resources persons on specific topics in both Bangladesh and the Netherlands. The DPT was funded through the Netherlands' Government's NL Agency, Partners for Water Program(PfW), with a close link to the Water Mondiaal Programme (WM) as international part of the Netherlands National Water Policy. The two aims of the DPT were:

- to learn whether there is robust demand for and commitment to longer term holistic and integrated planning for a Bangladesh Delta Plan (BDP), and through providing information enhance such commitment

and if so

- what would be the contours of such a plan?

The principal task of the DPT, therefore, focused on learning from different stakeholders, particularly the public sector, about the interests and commitment for preparing and implementing a BDP, as well as to provide information related to a possible Delta Plan. The ToR of the DPT assignment is outlined in Annex 1 and the members of the DPT are listed in Annex 2.

2 Approach Bangladesh Delta Plan Preparatory Team

2.1 Process and Timeline

The nature of the assignment was such that the core team had to plan their interventions and implementation in a flexible and adaptive way. Several factors such as political support, ownership, stakeholder input, existence of policies and plans were considered. It was not possible to foresee the process and the commitment for a Bangladesh Delta Plan in all its detail before the assignment, so to develop the process and to develop commitment was part of the assignment.

In July 2011 the team started with undertaking consultation with the Embassy of the Kingdom of the Netherlands (EKN) and a Water Mondiaal (WM) team. Following various discussions within the DPT and between the team and EKN, and based on a review of the ToR the team determined the following tasks:

- To involve the Government of Bangladesh (GoB) and major stakeholders in the consultation process for a potential Bangladesh Delta Plan (BDP).
- To understand opinions and gain commitment from GoB and major stakeholders, and providing EKN with a clear indication of the Go-No-Go moment.
- Following successful commitment and ownership establishment, outlining of contours of the BDP.
- Indication of the institutional set-up for the preparation of the Bangladesh Delta Plan.

The approach followed was of a flexible and adaptive planning, a learning approach, in which the core process follows the government planning approach, while continuous discussion and reformulation is used. The approach is separated into three distinct phases (Figure 1).

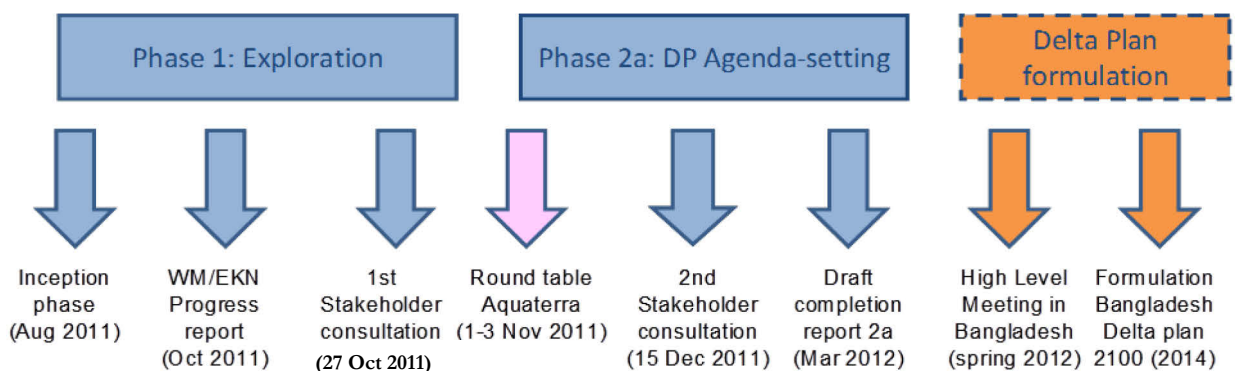


Figure 1

Main phases in the approach towards a Bangladesh Delta Plan.

Please note that the High Level Meeting in spring 2012 regards the MoU between Bangladesh and the Netherlands.

During the exploratory phase, the DPT and the assignment were introduced to the Government of Bangladesh. Furthermore, the Bangladesh Delta Plan concepts were defined both within the DPT and among a small group of key stakeholders, while the government identified the institution and the lead government official to lead the BDP preparation. This culminated in the first stakeholder consultation meeting in Dhaka on 27 October 2011.

The Minister of Planning concluded the stakeholder meeting with a confirmation of the commitment of the Government of Bangladesh (GoB) and the whole-hearted acceptance by a wider group of relevant senior public officials for the Bangladesh Delta Plan.

Following the above achievements the DPT set out to further develop the initial delta concepts. In this regard two critical events laid the groundwork for BDP content development. The Roundtable event in International Water Week/ Aquaterra in the Netherlands and later in mid-December the second consultation meeting in Dhaka, attended by a wide range of stakeholder groups, provided clarity, feedback, and thoughts for what the contours of the BDP could clearly develop into.

During the first part of the Second phase the DPT followed an approach for engaging the relevant stakeholders (like for instance the Ministry of Planning, the Ministry of Water Resources, the Ministry of Agriculture, the Ministry of Environment and Forest, the Prime Minister's Office, knowledge institutes like CEGIS, IWM, BUET, and IFIs like ADB and WB) and to reach a conclusion regarding the commitment of GoB for a BDP. From such an achievement DPT focused on setting an agenda for the preparation of the BDP. Activities carried out during the two phases are detailed out. Annexes 2 to 5 provide detailed information on this. Engaging stakeholders means that DPT-members during many interviews and other conversations with key persons explored the awareness of water management problems as well as of challenges of climate change. The ideas about ways to deal with the mentioned problems and challenges and the commitment to act in this respect were discussed during the Round Table Workshop (second stakeholder consultation) on December 15th in relation to:

- Institutional setting and implementation.
- Drivers and scenario's for a BDP.
- Delta Challenges.
- Policy linkage and implementation mechanism.
- Investment Portfolio.

The results of the round table discussion provides the input for an agenda for the preparation of the BDP.

This report further provides an overview of the process and the content of the discussions. In this report the approach of the DPT, the need for the Bangladesh Delta Plan, the linkage to on-going planning activities and the contours of such a Bangladesh Delta Plan are discussed (Chapters 2, 3, 4 and 5 respectively).

Further developments

Early January 2012, a Steering Committee for the Bangladesh Delta Plan has been created by GoB, with nine Ministries participating. The final stage (orange part in Figure 1) of the preparatory work, which is not part of this assignment and report, will provide technical details to the BDP, prepare technical working papers, develop the scope of work (SOW), and the required documentation such as the Technical Assistance Project proposal/ Proforma (TAPP) in order to start the formulation of the BDP. GoB with support of EKN formulated both a draft MoU and TAPP. The General Economics Division of the Planning Commission has been assigned by GoB to take the lead for the development of the Bangladesh Delta Plan, and has actively taken up this role.

2.2 Integrated and Holistic Approach

The DPT in consultation with the stakeholders involved, defined the following key challenges for the formulation of an integrated and holistic Bangladesh Delta Plan as a climate change adaptation measure and aiming at the creation of a healthy and sustainable living environment for the people of Bangladesh living in the delta:

- **Integrated Approach:** The Bangladesh Delta Plan's challenge will be to stand out and sustain in the middle of many plans which already exist. Various ministries are responsible for these plans and currently little is done with regards to implementation. There is also a need for improved connection of

the different plans. The challenge would be to shape the Bangladesh Delta Plan in a holistic and integrated manner taking into consideration the existing situation, and ensuring long term protection, food security and development possibilities. It is important to realize that the Government of Bangladesh is increasingly recognizing the importance of more integrated, holistic and long term planning in order to sustain future development. This is a significant opportunity for the Bangladesh Delta Plan. Coordination and clarity among the relevant ministries including GED should be a key area of focus.

- **Identification of themes:** One of the major challenges for the team is to identify the delta issues or themes under the overarching idea of protection. The challenge will be to focus on specific themes rather than a long list, so as to ensure realistic knowledge development and implementation.
- **Political and financial conditions:** The greatest challenge with any long-term plan is the issue of changing political and financial conditions. These are highly relevant in leading to implementation (or not) of the plan.

Main elements for the Bangladesh Delta Plan are therefore to create an institutional setting, development of scenarios including socio-economic and climate change perspectives, the identification of delta issues, allowing to provide a vision. Such a vision can then be formulated, with forecasting and back-casting as will be elaborated in Chapter 5, linked to the policy and implementation process, with solid financial underpinning and with broad stakeholder involvement. In Figure 2 the main elements are indicated.

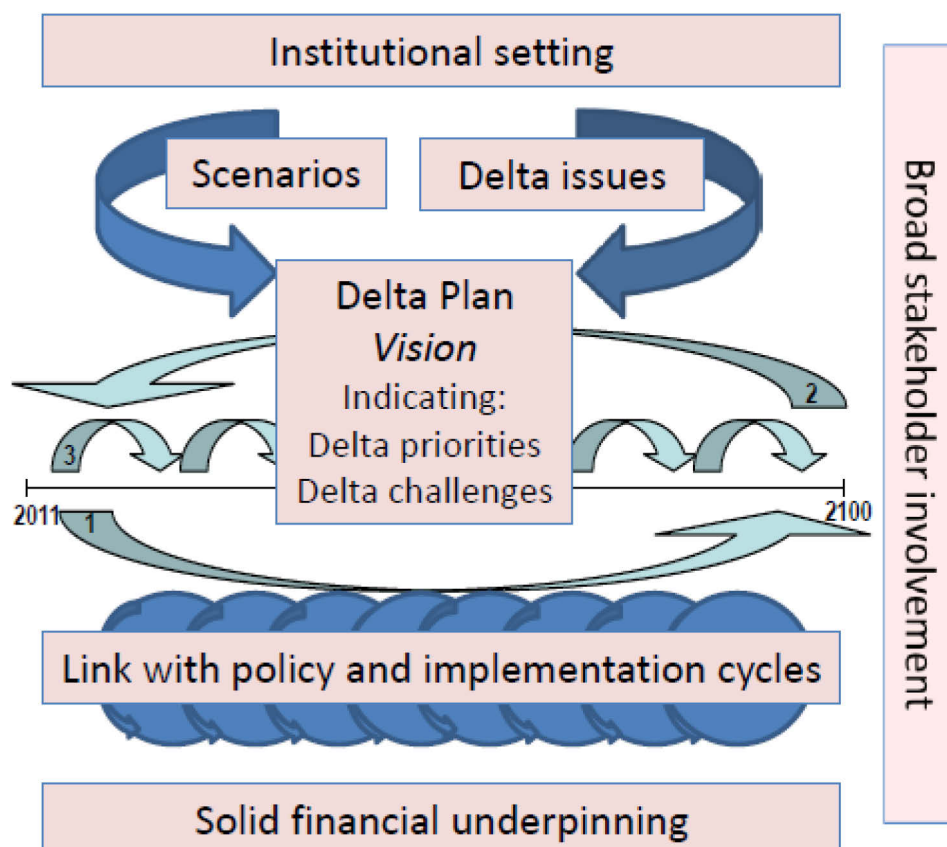


Figure 2
Main elements for a Bangladesh Delta Plan, using an integrated and holistic approach.

The DPT envisages the Bangladesh Delta Plan as an important means to enable and improve delta life in all its functions, using adaptive delta management. Adaptive delta management, like adaptive water governance, means that policy and plans, institutional and financial arrangements as well as organizational set up and performance are continuously modified in the course of time to adapt to the new circumstances.

In order to define the contours and ToR for the Bangladesh Delta Plan one has to be aware of some characteristics of strategic planning in the water sector¹. Most plans will be realized only partly because of changing conditions, circumstances and political or societal preferences. At the same time there are also new emergent issues to be dealt with. The dynamics of strategic plans can be shown as indicated in the figure below:

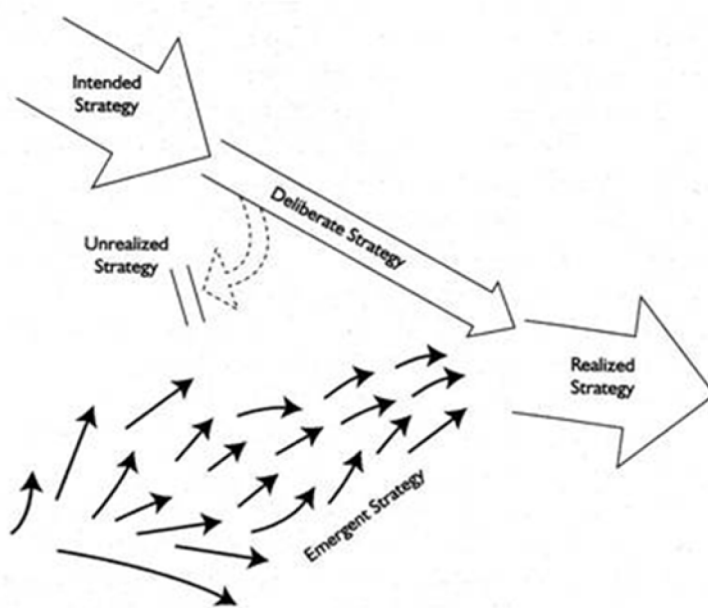


Figure 3

Adaptive water governance; see: H. Mintzberg, J. Lampel and B. Ahlstrand, 2005, Strategy Safari: A Guided Tour Through The Wilds of Strategic Management, Free Press.

Especially a Delta Plan which focuses on very long term goals can only be successful if it is flexible, adaptive to new developments and incorporating the possibility of change. Such a plan offers a framework for analysis and understanding of the current situation. Together with strategic ambitions this is called a robust perspective (or strategic vision) within which adjustments will be possible on the medium and short term. A strategic plan as the BDP reflects on the problems and trends of the present situation in the perspective of a desired future situation and provides a roadmap to bridge the gap between present and future. This can be done by forecasting, i.e. the process of predicting a future based on current trend analysis, and back-casting, where the process works backwards from a defined (set of) future(s) to identify policies and programs that will connect the future to the present.

¹ Note that 'water sector' has been used in the wider sense of the word, including also e.g. agriculture, fisheries, environment, navigation and spatial planning considerations.

The exploration, analysis, sense making, interests and choices involved in the planning process are of crucial importance to make serious steps in the right direction based on strong ownership. So a Delta Plan is important because of its strategic vision and content to achieve a better future but also because it forms a vehicle for communication, modification, decision making, action and commitment or ownership over time. The Bangladesh Delta Plan will be based on these principles of adaptive delta management, like in adaptive water governance.

3 Need for a Bangladesh Delta Plan

Given the current socio-economic ambition in Bangladesh and in order to address the expected impacts of climate change there is need for an integrated vision and approach on future land and water management. GoB indicated an urgent need to improve flood and fresh water resources management to protect valuable land and to improve food production. Already now salt water intrusion is affecting drinking water quality and limiting food production in the coastal zone. These problems are likely to become worse due to urbanisation and population growth, sea level rise, subsidence and more frequent drought and floods.

GoB also stressed an urgent need to take necessary measures to improve food security, reduce flood risks and guarantee fresh water availability for the key sectors. However, appropriate short term measures cannot be taken without an integrated and holistic long term vision. Short term measures related to land use planning, flood protection and water infrastructure have to be linked to a long-term vision and related socio-economic and climate change scenarios.

Long-term scenarios need to be developed together with the required interventions (both structural and non-structural) in order to prepare the delta for long-term sustainable development and to improve the livelihoods of the current and future generations.

During their long lasting relationship, Bangladesh and the Netherlands have addressed many technical as well as institutional issues in different forms of cooperation (pilots, projects, Twinning Arrangement). Recently, the Bangladesh government is looking for long term coordinated planning to improve the development and management of water resources and to address the country's climate change related issues. At the same time the Government of the Netherlands (GoN), through the Water Mondiaal Program and the Multi Annual Strategic Plan (MASP) of the Embassy of the Kingdom of the Netherlands (EKN), strives for a broader framework for sustainable cooperation with Bangladesh in the water sector. This cooperation strategy includes extensive exchange of best practices and the provision of increased bilateral support. Capacity building in the Bangladesh institutions in the water sector is a central theme to this, for which closer bilateral interaction in the sector will be required. Dutch knowledge institutions and the private sector can play a prominent role here in cooperation with Bangladesh partners. In addition to government to government cooperation also private sector development including business-to-business initiatives and the partnering of knowledge institutions will be both necessary and very useful to face the complex water governance and management problems.

Due to the broad impacts and complexity of the water problems, a long-term integrated approach like a Bangladesh Delta Plan is needed. This approach is needed not only to solve the current water(governance) problems but also to prepare for future conditions with higher sea levels, changes in water availability and probably more extreme events due to climate change. A strong organizational performance with respect to long-term reliable, transparent and accountable services in the Delta is of crucial importance to that. The Netherlands has experience with developing a Delta Plan in the Netherlands. They are also involved in development of a Mekong Delta Plan in Vietnam. Though the situation and circumstances differ, it will be useful to share the insights and lessons learned. The DPT envisages the continuation and strengthening of structural collaborative partnerships with authorities, private parties, knowledge institutions and non-governmental organizations in the Netherlands and Bangladesh. It is anticipated that the Dutch and Bangladesh private sectors will play a pro-active role in finding and implementing innovative solutions for water related issues in the Bangladesh Delta area.

The Bangladesh Delta Plan with its holistic approach and long-term vision (50 to 100 years), addresses integrated water resources management and climate change related issues of water safety and availability, food production and food security, salt intrusion, shortage of land, environmental and ecological problems and other important aspects to reach an adequate level of safety and food security as well as sustainable economic growth of the whole of Bangladesh. Since the Bangladesh delta is mostly governed by water resources, water management issues in different sectors (e.g. agriculture, public health, environment, etc.) need to be integrated. This integration and improved collaboration will be an essential part of the whole planning process.

The Bangladesh Delta Plan can provide the following benefits and opportunities for sustainable development of Bangladesh:

- The BDP serves as umbrella that integrates all sector plans and policies with long term perspectives. It will change the individual sector approach of project planning and implementation to a multi-lateral coordinated approach. This plan can be linked to short term plans such as Five Year Plans, Vision 2021, and other planning processes (NWMP, ICZMP, Agricultural Master Plan for Southern Delta, Haor Master Plan, etc.).
- The plan will enable the government policies and institutions for formulating and implementing climate change adaptation programmes in a more consistent way, ensuring efficient utilization of limited natural and economic resources in Bangladesh.
- The BDP can facilitate conservation of natural resources in a comprehensive manner, especially the river floodplains and coastal ecosystems that will eventually ensure sustainable provisions of services to the life and livelihoods of vulnerable people.
- The plan will enhance the capacity of good governance through its focus on institutional arrangements, strengthening and capacity building, equity and justice among all sectors.
- Using the opportunity of coordination, the funding process will be more comprehensive among different government and non-government stakeholders, thus using limited funds more effectively.
- This plan will create an opportunity to harmonization of regional development plans for agriculture, environmental affairs, urbanizations, tourism, etc. with the national plans.
- Further the Bangladesh Delta Plan will be a means of strengthening international cooperation with neighbouring countries as well as development partners.

In absence of such a Bangladesh Delta Plan, sustainable socio-economic development and security of life and livelihoods in Bangladesh could remain beyond reach. Bangladesh will have more difficulty to face the future challenges under changing climatic conditions with the current trend of short term sector planning processes. Without having a long term vision and plan, the development of limited natural, social and economic resources will be very complicated in future and will create much more conflicts than the present situation. Therefore, a Bangladesh Delta Plan is necessary for smooth transitions of development activities over next 50 to 100 years that will ensure healthy living conditions and sustainability of life and livelihoods in the Bangladesh delta.

The Bangladesh Delta Plan, as it will be a guiding strategic plan relevant for the whole nation, will be developed and owned by GoB. GoN is the strategic and preferred partner, and other partners may be involved as well. GoB will lead the process of developing the plan in which active participation of stakeholders from government and nongovernment agencies as well as civil society is of crucial importance. Departments under different Ministries will be involved, according to their mandate. In addition, private sectors will participate in relevant activities of the plan. It is foreseen that a strong link between the BDP and individual sector plans will be created. Appropriate institutional arrangements will be set up while preparing the plan. Adequate funding for preparing, implementing and monitoring the Bangladesh Delta Plan are foreseen to come from government's revenue and development budget as well as through support or joint efforts of development partners.

4 Relation to on-going land and water plans

4.1 National Level Plans

Within the context of Bangladesh, there are a number of plans at the national level, which need to be taken into consideration. Preferably these plans should eventually link to the Bangladesh Delta Plan. These plans are the Sixth Five Year Plan (2011), the National Water Management Plan (1999), the Integrated Coastal Zone Management Policy and Plan (2005), the BIWTA Master Plan and the Dredging Master Plan and the Bangladesh Climate Change Strategy and Action Plan. Further, the plans currently under preparation for the Hoar (Hoar Master Plan) and the Southern Delta (Southern Delta Master Plan) are of importance.

Sixth Five Year Plan

The Sixth Five Year Plan (FY 2011 - FY 2015) was prepared in 2011 by the Planning Commission, Ministry of Planning, Government of Bangladesh. This is a strategic plan that includes targets and broader activities in different sectors to achieve overall aim of becoming middle-income country by 2021 through economic growth, employment, ensuring food security, energy security, poverty reduction, human resources development, gender balance and environmental protection. This plan will be revised every year and will be monitored regularly. Further information at: <http://www.plancomm.gov.bd/divisions.asp>

NWMP

The National Water Management Plan (NWMP), with a vision over 25 years, was prepared by Ministry of Water Resources, Water Resources Planning Organization (WARPO), Bangladesh under a four years project (March 1998 - December 2001). The NWMP was approved by the National Water Resources Council on March 31, 2004. The plan provides a framework within which governmental agencies concerned with the development, management and use of water resources in Bangladesh can plan and implement their own activities in a coordinated and integrated manner. The planned activity programs have been presented in the eight sub-sectoral clusters: i) Institutional Development, ii) Enabling Environment, iii) Main Rivers, iv) Towns and Rural Areas, v) Major Cities; vi) Disaster Management; vii) Agriculture and Water Management, and viii) Environment and Aquatic Resources. Each cluster comprises of a number of individual programs, with overall a total of 84 sub-sectoral programs identified and presented in the investment portfolio. It was planned to implement in three phases. To mitigate the environmental risks of water sector project development, the plan suggested for a holistic view, which includes the environment itself as an important water sector stakeholder with an entire cluster of programs devoted to it. Furthermore, programs within the environment cluster are strategically timed in order that public awareness raising, the establishment and enforcement of regulatory mechanisms and long term planning are addressed as priority. The progress of implementation is not as would be expected which has to be analyzed and learned from for the new BDP. WARPO is assigned to monitor the implementation of NWMP. Further information at: <http://www.warpo.gov.bd>

ICZMP

The Government of Bangladesh declares its intention of integrated coastal zone management (ICZM) following the principles of the Coastal Zone Policy 2005. Following this policy, all concerned Ministries, Agencies, Local Government Institutions, NGOs, private sector and the civil society will put their efforts for the development of the coastal zone. The goal of ICZM is to create conditions, in which the reduction of poverty, development of

sustainable livelihoods and the integration of the coastal zone into national processes can take place. ICZM includes nineteen coastal districts, which covers 32% of the area and 28% of the population of Bangladesh. ICZM being a multi-level and multi-sectoral activity, institutionalization of ICZM would require the development of mechanisms for coordination and interaction between and among the many parties involved at national, regional and local levels. One aim of the program is to develop, in course of time, the ICZM principles and practices as the standard mode of operation for all the agencies operating in the coastal zone. To co-ordinate these activities, a lead Ministry, MoWR, and a lead agency, WARPO, is designated. Inter-ministerial Technical Committees and Program Steering Committees, constituted at appropriate levels, will assist the lead agency and the lead Ministry, respectively in overall coordination.

BCCSAP

Bangladesh Climate Change Strategy and Action Plan (BCCSAP) was prepared in 2008 and revised in 2009 by the Ministry of Environment and Forest (MoEF), Government of Bangladesh. This planning document was developed as part of implementing the Bali Action Plan (COP 13 in Bali, 2007) with a view of taking coordinated action for climate change mitigation and adaptation in Bangladesh. The BCCSAP 2009 consist an action plan based on six pillars: (a) food security, social protection and health, (b) comprehensive disaster management, (c) infrastructure, (d) research and knowledge management, (e) mitigation and low carbon development, and (f) capacity building and institutional strengthening. 44 programmes have be suggested under these six pillars, which will be implemented over next 20 - 25 years by different ministries and departments. Further information at: <http://www.moef.gov.bd>

Country Investment Plan for agriculture, food security and nutrition

The government of Bangladesh has developed a Country Investment Plan (CIP), a road map towards agriculture, food security and nutrition. Several ministries and development partners were involved in the process of preparation of CIP. The CIP has identified twelve programme areas and a budget of more than seven billion dollars for five years. The government of Bangladesh has allocated a large amount of fund and many development partners have committed financial resources for the implementation of the CIP. An Inter-ministerial Committee and a Technical committee are formed by the ministry of Food and Disaster Management in order to monitor the implementation process of CIP.

BIWTA

Bangladesh Inland Water Transport Authority (BIWTA) is responsible for development, maintenance and control of inland water transport and of certain inland navigable waterways.

Bangladesh has about 24,000 km of rivers, streams and canals that together cover about 7% of the country's surface. Most part of the country is linked by a complex network of waterways which reaches its extensive size in the monsoon period. Out of 24,000 km of rivers, streams and canals only about 5,968 km is navigable by mechanized vessels during monsoon period which shrinks to about 3,865km during dry period. The Inland Water Transport sector carries over 50% of all arterial freight traffic and one quarter of all passenger traffic. BIWTA Master Plan was approved by the Ministry of Shipping in 2009. The Master Plan mainly includes development and modernization of inland river port, navigational aids installation, dredging, hydrographic survey and procurement of dredger. BIWTA needs to dredge about 1.8 million m³ of deposited sediment annually in order to maintain principal navigation routes. Currently BIWTA is carrying out dredging work in the thirteen major routes. There are plans to extend river dredging in 53 routes and six protocol routes with India. BIWTA is working for updating the Master Plan.

Dredging plan

The Ministry of Water Resources through BWDB has a separate dredging programme, which will lead to stabilization and improvement of river segments. It is project based, the major rivers dredging project having a time frame of fifteen years, and the smaller rivers project a shorter one.

Hoar Master Plan

Haor Master Plan is being prepared for the Haor region in north-east part of Bangladesh by Bangladesh Haor and Wetland Development Board (BHWDB) in the period of January 2010 - June 2012. The plan will include 10 - 25 years projects covering eighteen sectors relating to the government ministries and departments. The overall goal of the master plan is to achieve sustainable development of the area by integrated planning and implementation through multi organisational involvement and community participation for optimum utilisation of resources and reduction of poverty. (Reference: <http://www.bhwdb.gov.bd/bhwdb-home/Activities/index.php>)

Southern Delta Master Plan

The government of Bangladesh has been emphasizing the development of agriculture for the food security of millions of people. In this effort government is attaching high priority to the southern coastal region of Bangladesh which is roughly constituting about one-third of the country's area. The area is facing many challenges including tidal inundation, salinization and considerable climate change threats (cyclones, tidal surge, floods etc.). The agricultural productivity and cropping intensity are relatively low in the region. There is not enough quality water for irrigation development. Farming system is dominated by small holdings and landless. Poor infrastructure network and availability of appropriate technology are constraining investment in agriculture and food security and other related poverty reduction programmes.

In the backdrop of this the Ministry of Agriculture has taken an initiative to develop a master plan for the south (2012-21) and FAO has been requested to accomplish the task under the guidance of an inter-ministerial committee. FAO formed an inter-disciplinary team of professionals and identified several development opportunities on crops, fisheries, livestock and water management and irrigation and marketing and value chain development. The draft report is now in the process of regional validation through series of consultations. The report (expected in the course of 2012) will provide the development programme areas and their priority, identify requirement of resources and likely contributions from different development partners in alignment with country investment plan (CIP). Already the Steering Committee of the SDMP has indicated the wish to link the SDMP with the Bangladesh Delta Plan.

4.2 Involvement of stakeholders

One of the key tasks of the DPT was to identify organizations and resource experts who would ultimately play a critical role in the development of the BDP. The DPT team undertook a rapid analysis based on a structured 'one-on-one interview' with stakeholders for selected organizations. It was understood that, although an individual (or multiple member) was (were) selected from each of the organizations, their opinions were not necessarily representative of the organization. However, consultations were held with senior management of the organization, who are also highly experienced and qualified experts in their field, both to discuss the concept of a Bangladesh Delta Plan, the need for it, and to gauge feedback and suggestions of the organizations.

The final selection of the list of organizations presented was based on:

- Their overall position and influence
- Knowledge regarding delta issues
- Mandate
- Potential role in the implementation of BDP
- Willingness to participate in the BDP

The groups targeted were:

- Public Agencies
- Private entities / NGOs
- Academicians / think tanks
- Media

In the proposal, the consortium provided an indication of the resource persons who would potentially play a key role in the assignment. One-on-one consultations were held with these experts and they were engaged during the implementation of assignment in terms of providing specific input. The list of these technical/resource experts are attached as Annex 2.

A checklist was prepared to have fruitful discussions, covering the issues of the Concept Note, the important role of stakeholders and their ownership of a Bangladesh Delta Plan. The conversations were good, meaningful and developed in a constructive way. The findings of the interviews are summarized as follows.

All participants felt the need for a long term vision on climate change and other driving forces in relation to water safety, food security and other related issues. They also emphasized the importance and added value of an integrated approach and of effective institutional arrangements but also of capacity building of the involved organizations during the planning process. They really stressed the importance of making proper use of earlier studies and of existing policies and plans.

A summary of stakeholder views, important points and suggestions is provided in Box 1. The joint participation of these different parties proved critical in supporting the highly challenging and complex task of assessing the possibility for, as well as the commitment to, the Bangladesh Delta Plan.

Though the DPT envisaged and undertook effort to talk with parliamentary standing committees, this could not yet been realised, and is an important task for follow up at a later stage.

Box 1: Stakeholder views, important points of attention and suggestions

The following impression of stakeholders opinions, shows good suggestions and important points of attention.

>>Very good to take this Bangladesh Delta Plan up with stakeholders: The Bangladesh Delta Plan should be a plan of Bangladesh, it should be perceived like that.

>> This is a new chance to energize the water and other sectors with new input and visions. The time horizon seems too long, how to deal with this in Bangladesh where five years already are very long?

>>This Delta Plan concept is very useful in addressing climate change and a long term integrated vision but should also provide a roadmap for real action.

>>The Delta initiative is very much appreciated as it creates opportunities for cooperation and for development of the water sector as a whole.

>>A lot of studies are already carried out and there are many policy documents and plans to frame and elaborate IWRM. Missing or weak element in the whole framework is climate change and its impact and real 'Integrated' WRM.

>>How about the trans-boundary river problems? Take into account that this plan goes beyond Bangladesh borders.

>>Will the NWMP be up-dated in the Bangladesh Delta Plan process? That would be an important contribution. Don't start from the beginning: use the comprehensive Flood Action Plan (FAP) and Integrated Coastal Zone Management studies as background. The National Water Policy, NWMP, Strategy for Accelerated Poverty Reduction etc. form important policy and planning input.

>>There are a lot of studies and plans, use them. The NWMP doesn't work very well, it is too difficult and badly owned; people from other ministries don't understand the plan or forgot it because it is not attractive to them and there is no enforcement either. Delta Team should use it but retranslate it, it can help to coordinate the making of the Bangladesh Delta Plan. A Specific Delta Act would be a major thing to have, to legitimize the Bangladesh Delta Plan, and to link the involved policies and departments which is of crucial importance to implementation.

>>Water sector is most intensely studied of all policy sectors; make good use of these studies.

>>The Bangladesh Delta Plan should upgrade the NWMP and be more detailed and action oriented; overlap creates confusion and tension in the involved agencies. What is the definition of 'Delta'? It should contain origins and end as a whole system, this could define the scope of the Bangladesh Delta Plan. See about this the zones in the NWMP.

>>Scenario building is very important and it should have also a local and regional focus.

>>The long term perspective is important but should be translated into action for the short term. Integration is crucial, departmental approaches regarding water are wrong. WARPO was designed to contribute in this respect but is still not performing as could be expected. It needs a very strong DG who is capable of dealing with other ministries and heavy Secretaries and it needs better competences for an integrated approach and multi stakeholder issues. Both are lacking because government finds it too expensive. Other ministries are not coming to WARPO, the NWMP is probably forgotten and there is no enforcement. These are all things to remember in relation to a Bangladesh Delta Plan.

>>It should certainly link to poverty reduction. Tendency with these water plans is always towards technical contents, engineering and construction. That is only a part of the story. Try to find real integration. See the Coastal Zone Management Studies (around 2005, Ministry of Water Resources was involved, eleven documents) in which 18/19 districts of the country are covered. These were very good, with an integrated approach and will be useful, only climate change was not well incorporated. They contain also institutional analysis. Think about the major problem with integration: poor cooperation, this should be dealt with in an Act. Don't make it like NWMP, this is a good program, it offers a framework but doesn't contain a roadmap for actions of each stakeholder. Land accretion is also a point of vital interest.

>>A good institutional arrangement is very much needed to make it work. Form a policy coordination body and make sure actual departments keep their work execution and that there is no overlap or rivalry.

>>Gender forms an important issue in analysis and development of the Plan. Bangladesh Delta Plan should be a peoples plan related to the livelihood of the people.

>>The groundwater problem should be incorporated because of the foreseen shortage of water supply from ground water sources. Use of rain water and intake of surface water will increase but water pollution is a major problem to that. The NWMP means a lot for water supply and sanitation, a new strategy should make use of this plan. Think also about the issue of water pollution especially by factories.

Enforcement and budget scarcity are very important because these appear to be vital problems to make any progress once there is a plan.

>>This is the right time to develop a Bangladesh Delta Plan:

- Climate change develops slowly, we need a longer term strategic vision now, also on socio-economic aspects including population growth: we have to broaden and change our mindset.
- Climate change induced migration requires attention.
- Land reclamation is very much needed given the shrinking available land and growing population.
- Trans-boundary river problems demand follow up, commissions are making progress now;
- Capital dredging is not enough, other measurements are required as well.
- Government is overloaded and fragmented; coordination is needed and also decentralization is needed; regional and local levels have to learn and understand and national level has to act upon that.
- Food security requires integrated vision: agriculture and salt intrusion, making better use of land. We need climate change related recommendations on crops, crop intensity etc.

>>Talk with parliamentary committees because the whole political forum is there and you will need them because they have to support the idea especially when another Cabinet will govern: Parliamentary Committee of National Assembly, Standing Committee for Water Resources, Standing Committee for Environment, Standing Committee for Agriculture, Standing Committee for Inland Water transport. Approach BNP people as well. Another forum is the coastal area: they have influential MP's.

The photo's hereafter provide an impression of the stakeholder involvement during the workshop at 27th October and 15th December



5 Contours of a Bangladesh Delta Plan

5.1 Towards the contours

Two stakeholder meetings and several technical discussions were held, on 27 October 2011 and 15 December 2011, relating the need for and the demarcation and characterization of the delta in the context of Bangladesh. Early discussions on the themes for a Bangladesh Delta Plan (BDP) culminated in the preparation of a concept note where the vision, strategy and plan for the BDP were broadly outlined along with key issues to be addressed. The Concept Note, prepared before the meeting of 27 October, is found in Annex 3. It highlights the following points:

- The BDP will be formulated based on technical analysis and long-term scenario development emphasizing water, land, agriculture, public health, environment, water safety, food security, socio-economic, spatial and ecological matters. This technical analysis on long-term scenario development takes place after the DPT and is foreseen as part of the BDP formulation process.
- The need for a long-term vision on the future governance of natural resources.
- The need to integrate relevant existing policies and plans and for establishing a roadmap for integrated implementation.
- The need to look into an integrated institutional framework for implementation of the plan.
- Assessing financing options and investment needs in order to effectively utilize scarce funds through prioritization and high benefits to cost ratios.

The focus of the DPT work was on building awareness for and commitment to a Bangladesh Delta Plan and to engage in lobby efforts for the acceptance of the delta plan among different and wide ranging stakeholders. Therefore, it was necessary to keep messages not too technical throughout the communication and consultation stages (see Annex 4, presentation of DPT for the 27 October meeting). The members of the DPT also decided to engage stakeholders to outline various issues related to the protection and development of the Bangladesh delta. This feedback from key stakeholder groups provided the DPT, and ultimately will provide in implementing a Bangladesh Delta Plan, a deeper knowledge and understanding of the contours and themes that had to be covered.

A note was prepared that outlined five major areas that need to be addressed within the BDP and also in ensuring a reasonable success in implementing it. This working document 'Towards a Terms of Reference for the Preparation of Bangladesh Delta Plan and Implementation', prepared before the meeting on 15 December, as attached in Annex 5, provocatively raised the five key areas and solicit feedback from the stakeholders.

These are:

- Institutional setting of the Bangladesh Delta Plan and Implementation: In order to champion and manage the planning and implementation of the Bangladesh Delta Plan it is suggested to set up a permanent body such as a Bangla-Dutch Delta Committee. Simply a coordinating or a steering committee will not suffice since permanency over 50 to 100 years is essential and appropriate for championing the plan. The actual institutional setting will be determined in a later stage.
- Drivers of the Bangladesh Delta Plan and Implementation: It needs to be determined who will be responsible for analyzing the trends for the different drivers and for the development of future socio-economic and climate change scenarios. Both are required for the formulation of the Bangladesh Delta Plan. Future scenarios, as sets of factors that can't be influenced, need to be chosen.

- Challenges and measures in the Delta: An assessment needs to take place regarding vulnerabilities in the Delta. Based on the chosen future scenarios, possible measures, as sets of factors that can be influenced or chosen, will be tested for their robustness. This facilitates the choice for optimal no-regret measures, that are - in light of an uncertain future - anyway desirable and cost effective.
- Policy linkage and implementation mechanism: To guarantee implementation of the developed measures and strategies there is the need to link existing and future policies. The key stakeholders need to be identified and should be involved in the process to improve the Bangladesh Delta Plan and guarantee on the ground support.
- Investment Portfolio: The Bangla-Dutch Delta Committee needs to facilitate incorporating the Delta Plan in the existing budgetary planning (Annual Budget/Revenue Budget, MTBF) process.

Discussions in a widely participated second stakeholder consultation meeting on all the above areas led to significant feedback and contributions that will be extremely useful for the preparation of the technical details and ToR for the Bangladesh Delta Plan formulation. Annex 5 outlines the feedback and contributions from each individual group discussing and sharing the five above areas.

Several outcomes and conclusions are drawn from this significant stakeholder consultations meet and they are summarized below in Table 1.niet vergeten in te vullen

Table 1

Outcomes of stakeholder consultations regarding five key areas for the Bangladesh Delta Plan.

Themes/Areas	Outcome/Conclusions from Stakeholder consultations
A. Institutional arrangements	<ul style="list-style-type: none"> - Government owned and people owned Bangladesh Delta Plan (BDP) would be developed through participation from all sectors - involvement of government, CSOs, private sector and other institutions is required. - The Bangladesh Delta Plan will be holistic and integrated. - A specific Bangla-Dutch Delta Committee should coordinate and develop the BDP. Implementation may be linked, is not yet fixed. - Many institutions are needed for institutional, legal, technical, political and financial support and coordination should be established and made effective. - Planning and implementation have to be parallel processes.
B. Key Drivers of the BDP and future scenarios	<ul style="list-style-type: none"> - Although many drivers have been identified (such as population growth, natural resources, land management and administration, economic development, social development, political development, water resources management, technological development, geology and seismicity, and climate change) it has been felt that a clear definition of drivers, trends and scenarios is needed. - Definition of vulnerability also needs to be clarified. - Bangla-Dutch Delta Committee should draw up future scenarios.
C. Delta Challenges	<ul style="list-style-type: none"> - Challenges will be different depending on the specific hotspots and vulnerable areas. - Possible measures to address challenges/vulnerabilities will need to be tested on robustness using future scenarios. - Issues and challenges need to be clustered better. - Design criteria for prioritizing different challenges.
D. Policy linkages and Implementation mechanism	<ul style="list-style-type: none"> - BDP should be integrated and linked with existing policies in water, environment, agriculture and land administration. - Non-partisan planning is required. - Planning should be based on sound technical, social and environmental assessments/analysis. - The BDP should be flexible and dynamic document.
E. Investment portfolio	<ul style="list-style-type: none"> - Local level participation, decision and demand driven investment is necessary. - Investment guidelines should be set nationally. - Investment plan should be prepared considering short-medium and long-term requirements. - Existing sector portfolios should be aligned or up-scaled with the proposed Bangladesh Delta Plan.

In the further sections of this Chapter, we will elaborate these key areas.

5.2 Institutional setting

During the second phase of the assignment, it was established that, in order to champion and manage the planning and implementation of the Bangladesh Delta Plan, it is necessary to set up a permanent independent body such as a Bangla-Dutch Delta Committee. Simply a coordinating or a steering committee will not suffice since permanency over 50 to 100 years is essential and appropriate for championing the plan.

It was further established by all stakeholders and EKN that the BDP should be developed and owned by the Government and people of Bangladesh in close cooperation with and support of the Netherlands. The GoB will lead the process of developing such a plan in which active participation of stakeholders from public sectors as well as private sectors from both countries, civil society, and NGOs is crucial. It should be ensured that departments under different Ministries of the Government participate based on the Bangladesh Delta Plan overarching strategy to which their mandate and contributions will relate. In addition, private sector, knowledge institutes and NGOs must participate in relevant activities of the plan. Bangladesh parties look forward for close cooperation with public and private partners from the Netherlands. A new MoU should provide a solid basis for such cooperation regarding the development of the BDP and its implementation in which the Bangladesh and Dutch private sector can play an important role.

The Bangladesh Delta Plan will be incorporated in the individual sector plans and implemented through development programs of the different government ministries and departments as well as non-government organizations. It is also important to organize regional involvement in the Bangladesh Delta Plan process. All these issues require that institutional strengthening and capacity building takes place during the planning process not only to deliver contributions but especially to achieve understanding, acceptance and form knowledgeable organizations who can deal with the implementation, who are able to cooperate with the private sector and who will be able to renew the Bangladesh Delta Plan after for example five years.

A Bangla-Dutch Delta Committee is recommended to be formed to direct and combine the government action with support from development partners like the Netherlands - and provide an innovative think tank and platform of action in bringing the Delta issues regarding planning and implementation together.

Appropriate institutional arrangements will be set up while preparing the plan. The Bangla-Dutch Delta Committee plays an important role in ensuring adequate funding for preparing, implementing and monitoring the Bangladesh Delta Plan. The following are some preliminary considerations, based on DPT discussions with stakeholders:

- A Bangla-Dutch Delta Committee needs an innovative approach and prepare the strategic BDP in proper alignment with implementation programmes, i.e. a planning process parallel to an implementation process, where the planning process feeds into the implementation process and vice versa - thus allowing continuous learning and application of the most modern technologies and knowledge. Planning is about formulating scenarios for the future, developing a long-term future vision, and working towards further translation of this vision into delta choices, decisions and actions in close linkage with existing and on-going policies and planning. Arranging the BDP-planning process parallel to the implementation process requires financial means to do so. This channelling of funding in relation to BDP in a sector wide approach requires a lot of time and is therefore an urgent matter for GoB as well as for GoN and development partners.

- Several options for institutional arrangements to prepare and implement the BDP have been discussed. It is of the opinion of the DPT and most stakeholders that an independent Bangla-Dutch Delta Committee should be established with the necessary power and authority to prepare and execute the BDP. This point and the positioning of the Bangla-Dutch Delta Committee were elaborated and discussed during the stakeholder meeting of 15 December 2011. The DPT and stakeholders recommend the option as shown below (Figure 4).

The Bangla-Dutch Delta Committee is viewed in this option as a professionally free and independent body positioned under the Minister of Planning as shown in the figure below. The advantage is that

1. The Bangla-Dutch Delta Committee can operate independently following its professional standards and judgements of the situation.
2. The Bangla-Dutch Delta Committee is also coupled with the MoP for strategic conversation and alignment with other agencies or councils, the management of expectations and of the necessary means to carry out its job well.
3. Another advantage is that this positioning under MoP provides continuity. It is the opinion of the DPT and of many stakeholders that BDP-process should be positioned in such a way that it cannot be viewed as an ad hoc political instrument but as a long term strategic planning investment for the whole nation. In this respect embedding the BDP within the MoP is expected to safeguard continuity. For implementation, involvement of other ministries is essential.

The Delta Plan Structure – option

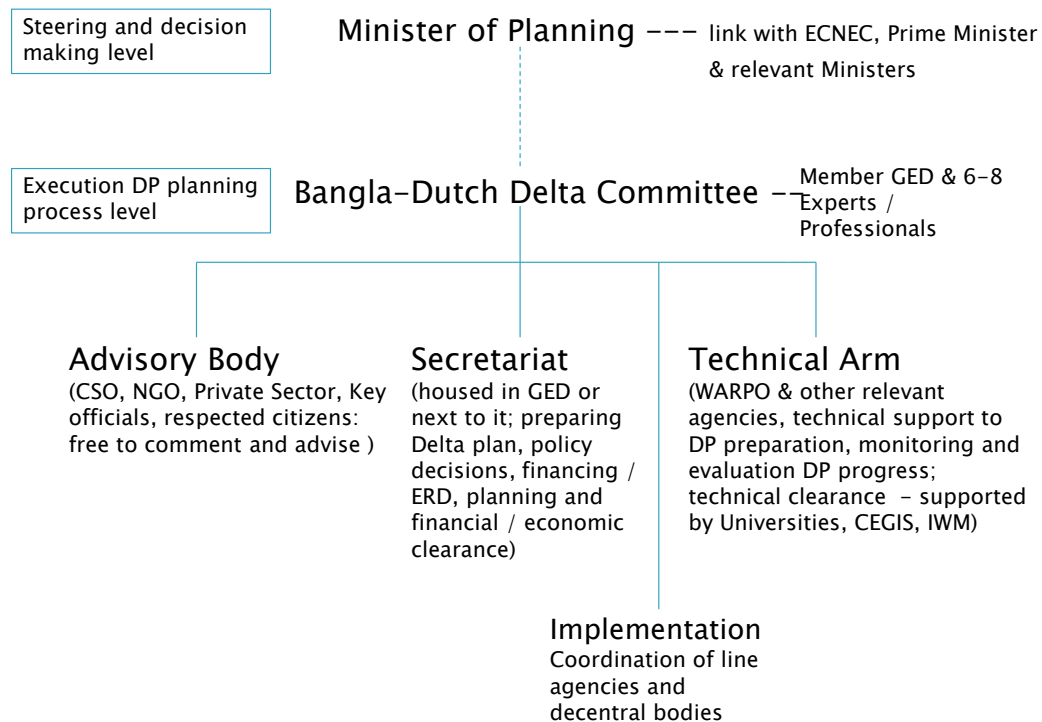


Figure 4

Possible option for Bangladesh Delta Plan Institutional Structure.

A Bangla-Dutch Delta Committee is seen in discussion with the stakeholders as an independent body:

- A Bangla-Dutch Delta Committee will be a legal entity having a guiding, coordinating, prioritizing, mediating role over the implementing agencies preparing the plan and independent of influence or dominance from ministries.
- This option is seen to take into account advantages of the Dutch example of a Delta Committee. The Dutch Delta Commission operated freely and independently and has been invited to come up with a professionally solid Bangladesh Delta Plan. It also advises for decision making on different aspects and issues of DP execution.
- In this option it is expected that Ministries of Finance, Planning and Establishment will support in their mandated roles the Bangla-Dutch Delta Committee for required capacities.

Institutional arrangements in the existing situation

A Bangladesh Delta Plan offers Bangladesh a long term perspective and holistic approach for policy making and planning as well as for implementation of action plans on the shorter term. This means that the water sector together with other closely related sectors will be involved in this policy and planning process in a broad sense and outcomes will have impact on the existing policy and planning frameworks of the whole sector. As stakeholders indicated this implies the question how the Bangladesh Delta Plan relates to the existing institutional setting. Will the Bangladesh Delta Plan form an overarching strategy and produce input for related policies and plans or does the Bangladesh Delta Plan require its own institutional framework with a Delta Act, Bangladesh Delta Plan, Delta Organization and Implementation process? Another important point was who would really be the owner of the Bangladesh Delta Plan. These questions have to be elaborated further in an institutional analysis. Based on the interviews, the following points have to be taken into consideration.

The existing situation has to be highlighted to make good use of studies, policies and plans as developed and implemented by the involved ministries and agencies. This entails National Level, Acts and mandates, Policies, plans, Budget cycle BD in an integrated perspective, and District and local level. For these levels the DPT searched for topical studies which provide basic information.

Institutional Arrangements regarding a Bangladesh Delta Plan

It is important to find out which institutional arrangement(s) will be required by a Bangladesh Delta Plan in relation to the existing situation. This incorporates also an arrangement to develop the Bangladesh Delta Plan and to facilitate decision making about it as well as to enforce its implementation. The following points were mentioned and explored and have to be further elaborated.

A Bangladesh Delta Plan is a strategic plan basically regarding the water sector and the most important related disciplines.

District and community level involvement is very important because of local knowledge and support for a Bangladesh Delta Plan, especially for its implementation. This is along the same lines as e.g. the National Water Policy, where decentralization and transfer of management from national level to regional or local level agencies are pointed out.

It is viewed as very important to strengthen and develop the capacity of these involved organizations in the Bangladesh Delta Plan process in such a way that they are capable and ready for cooperation at the national level and between governmental levels in order to realize proper implementation.

A specific arrangement has to be made ensuring development and implementation (enforcement, capacity development, monitoring etc.) of a Bangladesh Delta Plan and with regard to other government levels which have to be involved from the beginning.

5.3 Drivers/scenarios

Using the concept of driving forces and scenario's for assessment of possible challenges in the future was found useful. The most important issues are to identify and define the external drivers of change, and come to its prioritization. Development of potential future scenarios as in combination of drivers and modeling in order to assess consequence on different sectors are crucial. A methodology for the development of future scenarios, and also a better defined description of vulnerability (for what and when?) is needed.

The key external drivers of change have been identified through expert opinion and consultation workshop involving all stakeholders. The following drivers of change have been identified.

Population Growth

Rising population is causing pressure on land and water use, livelihood and economic development. Bangladesh is one of the most densely populated countries of the world. Currently the population increases with two million people per year (approximately). The projected population in the year 2025 is about 180 million and about 220 million in the year 2050. Currently forty percent of the population is living in poverty and is vulnerable to natural hazards. Absolute numbers will increase over time. The growing population increases pressure on use and consumption of resources and sustainable environment that need to be addressed in managing resources under efficiency and equity principles. Other issues are urbanization, migration and livelihood pattern.

Natural Resources

The likely changes in natural resources might have effect on bio-physical, social and economic systems. It is important to utilize historical analysis of current trends and trajectories. It is essential to address on water (GW,SW,Rainwater), land, forest, bio-diversity.

Land Management and Administration/ Spatial planning

This issue might cause change in agriculture and aquaculture systems, which in turn may affect the food and livelihood security.

Economic Development

The issues of importance are macro and micro economics, infrastructures and livelihood.

Social and Political Development

The most important social issues are: Education, Health, Water Supply and Sanitation and Human Resource Development. Political Development should focus on international co-operation, Regional co-operation, and political consensus in the country. This issue needs to be addressed in the Bangladesh Delta Plan.

Water Resources Management

The following disciplines are key disciplines to address in the Bangladesh Delta Plan;

- Land reclamation
- Sediment management
- River management
- Coast and estuary development and management
- Wetland management
- Water governance
- Conflict management

Technological Development

Technological development may provide opportunities for more cost effective infrastructure, exploitation of previously untapped natural resources and for improving resource productivity and increase the resilience of agriculture and aquaculture systems. Technological development shall focus on the following disciplines;

- Agriculture technology
- Appropriate water management technology
- Energy
- Communication technology

Climate Change: A cross-cutting issue

Climate change, as a cross-cutting issue, relates to all other drivers. Climate change has severe impacts on infrastructure, food and livelihood security of the country. On average every five years, up to two-thirds of Bangladesh is inundated by floods that cause substantial damage to infrastructure, housing, agriculture, and livelihoods. Low-lying coastal areas and costal polders are also at risk from tidal floods, water-logging and severe cyclone induced storm surges. Severe cyclones make landfall on the Bangladesh coastline, either before or after the monsoon, causing storm surges that are sometimes in excess of seven meters. Crops and the livelihoods of the rural poor in low-lying coastal areas are also devastated by saline water intrusion. All these climate related risks will be exacerbated due to a warmer and wetter future climate that goes beyond historical variations.

One of the main tasks of a future Bangla-Dutch Delta Committee will be to perform an impact analysis for different scenario's and trends per driver and sector. This analysis needs to be performed at different abstract levels as quantitative as possible.

Besides this the stakeholders felt it difficult to indicate which driver and trend is more important than others. Especially when combining two or more trends of drivers, this will become a very complex task. Selection criteria will be needed to prepare a structured approach and a prioritized comparison and combination of drivers and trends.

The stakeholders recognized the need to address a variety of drivers that will potentially influence the land use functions in Bangladesh. It was also acknowledged that climate change itself is not the number one driver. It could be seen as cross cutting issue which is often amplifying the already existing problems. Therefore it is better to concentrate on vulnerability and the coping capacity of the society for dealing with climate change impacts.

With the help of future scenario's it will be possible to prepare a grand design for the future situation (forecasting). Next an attempt can be made to define the actions needed to come there when starting from the present day situation (back-casting). The advantage of this approach is the avoidance of costly trial-and-error process. Figure 5 illustrates the approach.

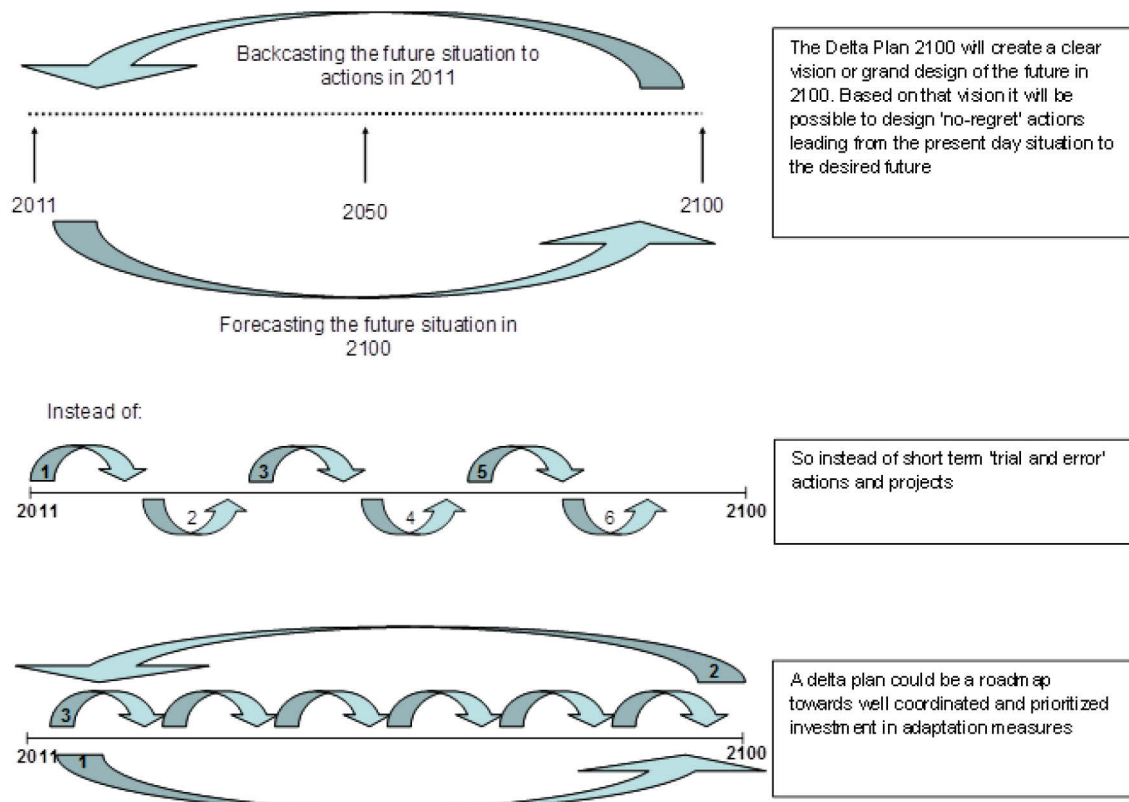


Figure 5
Back-casting and Forecasting.

5.4 Delta challenges

Bangladesh, the largest deltaic floodplain of the world, comprises unique geographical, physiographic and climatic settings with dynamic hydrological, morphological, landscape and ecological characteristics governed by the world's three great rivers systems -the Ganges, the Brahmaputra and the Meghna. About 80% of the country is featured with rivers and their floodplains.

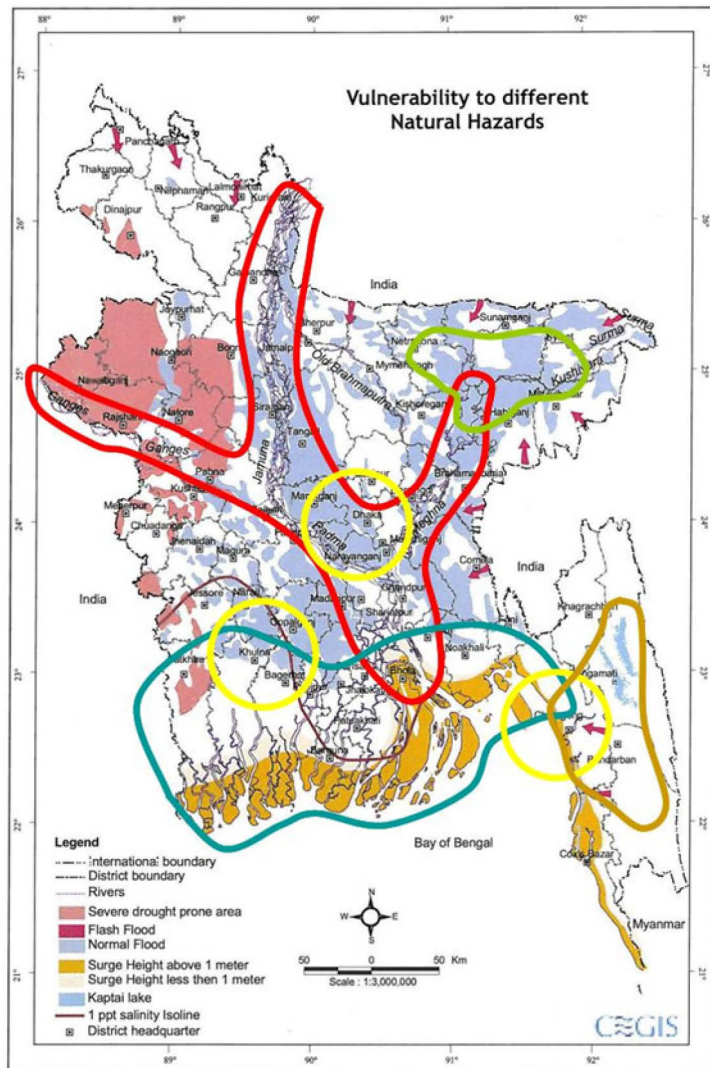


Figure 6
The geographical context of Bangladesh.

Prior to preparation of a plan it is necessary to identify the vulnerable locations for addressing the area specific problems and issues. Bangladesh is threatened with multiple natural hazards like floods (River flood, Flash flood, Urban flood), storm surge, cyclones, droughts, erosion including climate change. Climate change effects like intensive and increasing rainfall, sea level rise, temperature variation at extreme level is expected to enhance the intensity and frequency of these hazards. The country, therefore, was delineated into five zones or hotspots based on vulnerability to natural hazards and their unique physical and environmental settings. The areas termed as hotspots are:

1. Coastal zone
 - Meghna estuary
 - Sundarbans
2. Floodplain
 - Major Riverbanks
 - Haor region
 - Charlands
3. Barind region
4. Hilly region
5. Dhaka and other urban areas

Figure 7 gives an overview of the approximate location of the hotspots.



Source: CEGIS, Dhaka.

Figure 7
Possible location of hotspots.

Delta Plan 2100 possible themes and hot spot areas

1. Water & Food and ecosystems
2. Flooding
3. Water supply and sanitation
4. Water & Climate change adaptation
5. Water Governance

- **Mighty Rivers**
- **Coastal areas**
- **Urban centers**
- **Haor**
- **Hill tracts**

5.5 Link to policies and implementation

Bangladesh has many policies and plans, already in place. There is a felt lack of cooperation, coordination and implementation between ministries as well as between central and decentral levels of government. As indicated before, an emergent planning approach is proposed, where a planning track runs parallel with an implementation track. In the implementation track, at first ‘no regret’ measures (measures that are useful any way, regardless of the direction of the developments) are implemented, and gradually, as more planning results become available, implementation based on those can be started.

A Bangladesh Delta Plan will not only be made with a document in isolation as outcome. The process and its resulting document are only useful, if linked to the existing situation (i.e. existing policies, programs), the performance and outcomes of agencies and the people. A holistic approach of the Delta Plan only can succeed by joint and coordinated action by capable agencies in the whole policy network.

The Delta Committee should assess how linkages can be made between existing and future policies and between the involved organizations and their performance to improve coordinated action and effective policy outcomes - and inform stakeholders at different levels and include their opinions and suggestions in the work. Explanation and brief informative discussion took place on this statement during the round table. The main point made was to make use of existing policies, policy coordination and good performance for effective outcomes, as to avoid an expert plan without connection to relevant policies and without ownership of involved organizations. It was recommended to make an explicit link to implementation, and translate the planning process to implantation and vice versa, in the process.

Besides the before mentioned policies and plans, important policies to link to are: Climate Change Strategy, Country Investment Plan for Agriculture and Food Security (2011), BCCSAP (2009), National Plan for Disaster Management (2010), National Water Management Plan (2005), ICZMP (2004). A next Five Year Plan should clearly include how a Bangladesh Delta Plan and Implementation addresses delta challenges as described.

5.6 Finance

Financing the investments to implement the Bangladesh Delta Plan will impose a critical constraint to the development and implementation of the Bangladesh Delta Plan. Round Table 5 discussed the formulation of the contours of an investment plan for the Bangladesh Delta Plan, the ways in which Bangladesh Delta Plan can be incorporated in the existing budgeting process, the methods of approach to the adopted in dealing with different sources of finance, and potential threats to the implementation of the broad investment plan. The broad topics of discussions from the round table can be divided into the five subheadings or key issues:

- The Bangladesh Delta Plan should have longer term financing.
- The investments for the BDP should be incorporated in existing budgetary planning processes.
- How to deal with different sources of financing.
- Financing is critical constraint: 'how to find and use opportunities for the BDP and avoid threats'.
- Remaining points of attention or suggestions.



Figure 8
Integrated planning and financing.

The Bangladesh Delta Plan should have longer term financing

The participants of the round table agreed that DP should have longer term financing. The following suggestions were made with regards to longer term financing:

- Investments should be allocated on a program basis rather than project basis. Sectors and clusters should be created with program lists falling under each cluster. Projects will come under the umbrella of a broader program. An aggregate coding system should be formulated for programs under BDP. This system will entail what proportion of a project is delta related and funds can be allocated accordingly.
- The longer term finance plan should be divided into immediate, medium term and long-term plans with goals attached to them.
- The longer term finance plan will follow the priorities identified on a national level. An investment plan should be prepared and updated every five years to reflect any changes in priorities. Once priorities are set, the stakeholders need to agree on creating an investment portfolio. The funds have to be committed as well as allocated to ensure efficient use according to priorities.
- Funds should be kept aside for emergency assistance, keeping in mind the climate change issues. The investment plan has to be ready to accept and accommodate radical departures and address it.

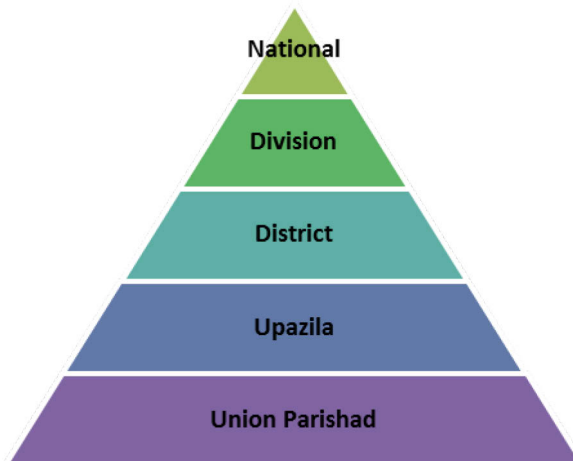


Figure 9
Administrative hierarchy in Bangladesh.

- The investment plan must integrate existing programs and investment with the new investments to be made under the Bangladesh Delta Plan. It must be ensured that investments are not contradicting each other. Bangladesh Delta Plan has to add value. As such the new funds under Bangladesh Delta Plan, for the most part, will be directed towards new investments in order to avoid duplication.
- The investment plan needs to identify that the delta committee needs long-term support. Long-term research also needs to be supported.
- Local level participation, decision and demand driven investment will be encouraged. Investment guidelines will be set nationally while a bottom up approach will be adopted during implementation with involvement from bottom, middle and top level.

The Bangladesh Delta Plan investment plan should be incorporated in existing budgeting processes

While the Delta Plan model of the Netherlands renders valuable insight, its funding mechanism is not applicable to Bangladesh. As an LDC, Bangladesh needs to find resources to implement the proposals of the Bangladesh Delta Plan. Given the potential difficulties in obtaining funding, especially in the long run, the round table agreed

that a Bangladesh Delta Plan investment plan must be incorporated in the existing budgeting process. The participants agreed that the investment plan should aim to merge the long-term plans of the donors and the government with the objectives of the Bangladesh Delta Plan. However, no real discussion occurred as to how the investment plan should be integrated into the Medium Term Budgeting Framework and Long Term Investment Plan.

Different sources of financing should be combined

It was agreed upon that construction of a financing matrix will prove to be useful. The financing matrix will depict which financier is funding which aspect of the Bangladesh Delta Plan. In its preliminary form, this matrix will list the different sources of finance and list the areas in which the financiers are already involved and to what extent. From this matrix it will be possible to identify any gaps in the existing portfolio in terms of budget and key areas. It will also give a rough idea of how much additional resource is needed.

The round table addressed the need to identify sources of funds to fill in the gaps with participation from donors, Public-Private Partnership (PPP), private financing etc.

Several other sources of financing were also identified. It was suggested a carbon/pollution tax in the form of charges or permits, could be imposed to correct for negative externalities. This would be appropriate given the climate change focus of the Bangladesh Delta Plan. Also, the participants were confident that Bangladesh would receive funds from the Climate Fund which can be used to finance the Bangladesh Delta Plan. A solid and transparent planning process and good governance will be crucial factors to obtain such funding.

Some sectors, such as drinking water supply and irrigation, present an opportunity of sufficient commercial gain for investment by the private sector. An example was provided in the case of drinking water supply. The GoB subsidizes the water supply but a very limited number of people have sufficient access to water. However, there is substantial demand for water at its actual, unsubsidized cost which is efficiently treated and distributed. Especially in markets where drinking water is scarce (e.g. Satkhira), the private sector can improve the efficiency of drinking water supply with sufficient commercial gain. In addition, the government can provide incentives in the form of concessionary lending and tax breaks to engage private sectors in the Bangladesh Delta Plan initiatives.

Financing is a critical constraint: Need to find and use opportunities and avoid threats

Disbursement issues will be a major obstacle for the investment plan. Idle money must be utilized. The investment plan must recognize that recurring costs go up and developing costs come down over time. Funding must be allocated for recurring costs ahead of time. Building of political consensus for investments of the Bangladesh Delta Plan will also be critical point.

The Delta Committee needs to facilitate incorporating the Bangladesh Delta Plan in the existing budgetary planning (Annual Budget/Revenue Budget, MTBF) processes. A longer term financial plan needs to be made, and an investment plan linked to it. Further discussions regarding available and required funding are needed to get an insight into the costs for a Bangladesh Delta Plan.

For instance the costs of no-regret measures now should be evaluated against more informed measures at a later stage, when more precise knowledge is available.

6 Conclusion and Way Forward

As described in this report many activities carried out during the second half of 2011 have contributed to the progress regarding a Bangladesh Delta Plan. A summary of what have been achieved indicates that a considerable momentum has been built up:

- Commitment for the BDP from the highest level of the government has been established.
- Commitment for the BDP from a wide range of key stakeholders has been established.
- Compared to before the DPT assignment, a strong awareness and knowledge seeking for the Bangladesh Delta Plan has been gained.
- Institutional options for championing and implementing the BDP have been discussed and the option of an independent Delta Committee with necessary powers and authority to prepare and implement BDP has come forward. At this stage it has not yet been decided what the actual shape and institutional set-up needs to be.
- A broad outline of the drivers, challenges and contours of the DBP is available as documented in this report and has been developed through significant stakeholder participation.

The above tasks and activities complete the DPT preparatory assignment and contract. A lot of momentum and zeal have been created and established by the DPT. The task of the DPT to enhance commitment has been completed very successfully, of which the establishment of a Steering Committee for the Bangladesh Delta Plan by GoB early January is a good example. Many important activities have only started and still need continuation. Follow up actions are necessary in the coming months and years to move forward, using the created momentum. Specifically there is a need to address the following issues.

- The signing of a MoU between GoB and GoN may be organized in the second quarter of 2012. This meeting will engage other senior officials from both Bangladesh and the Netherlands, and needs to be facilitated by EKN.
- As described above several technical issues and details need to be clarified and appropriately assessed. Therefore, several technical papers have to be prepared by technical experts during the formulation of the Bangladesh Delta Plan.
- It has been proposed that a Bangla-Dutch Delta Committee will be set up as an independent body. There is a need to prepare a draft constitution of this Bangla-Dutch Delta Committee by GoB and GoN and to include necessary legal expertise for it.

During the consultation session in the Netherlands on January 10th (see Annex 7) the representative of Water Mondiaal in the Netherlands mentioned the point that the preparation of an MoU is the responsibility of GoB/GoN and therefore GED/EKN will take action about this and DPT can only provide support to a limited extend. DPT has provided excellent input in the process, and it is up to GED and EKN to take it up.

The importance to pay attention to longer term financial arrangements and investments for the development and implementation of the BDP in a sector wide approach was highlighted. This requires involvement of other financial partners as well.

The main points of attention for the next phase are the further formulation of the Bangladesh Delta Plan, focusing on the thematic areas in a manner that ensures that the thematic areas are addressed in a holistic, integrated and feasible approach. Further the stakeholder process is to be continued. This is also in line with Water Mondiaal advice to ensure broad government, knowledge, NGO and private sector involvement. The formulation of scenario development (process and foreseen content) in the Bangladesh Delta Plan should be

started. Further, a technical/financial assessment should be made, to make a step in linking existing vulnerabilities and delta challenges with financial requirements for the implementation of the Bangladesh Delta Plan.

Besides this report, the DPT will also prepare a brochure with the main results and contours of a BDP as discussed so far. The main objective of the brochure will be to inform the water sector in the Netherlands and Bangladesh of the upcoming development and business opportunities.

The formulation of the Bangladesh Delta Plan is a large challenge, which the Government of Bangladesh, with support of the Government of the Netherlands as its strategic partner, has taken up in a dynamic way. It is foreseen to contribute with the Bangladesh Delta Plan to the ambition of Bangladesh to provide safety and food security to the people of the country, in other words, to enable and improve delta live in all its functions.

In January 2012 the initial and successful work of the Bangladesh Delta Plan Preparatory Team finished, and the DPT prepared its report. The process towards a Bangladesh Delta Plan is continuing: GoB and GoN proceeded with the formulation of an MoU and TAPP. It is expected that the MoU will be signed later in 2012.

Appendix 1 Terms of Reference DPT

Delta Preparatory Team for the Bangladesh Delta Plan 2100

Draft Terms of Reference for Consultancy Services

A. Introduction

The Dutch efforts to manage water have been going on for ages; initially an activity of individuals but soon more organised in small water users organisations which became water boards. In due course also the Government became more and more involved in water management in particular for the aspects of safety, navigation and water quality.

Recent water related developments started after catastrophic flooding during a storm surge in 1953, with an integrated and rather participative approach resulting in the so-called Delta Plan works. Mainly triggered by the climate changes, the Dutch Government has initiated in 2008 the development of a second Delta Plan for the Netherlands. The Delta Plan 2100 provides a documented overview of the consequences of climate change by the year 2100 in The Netherlands and recommendations to ensure a healthy living environment supportive for a strong sustainable economic growth. The Dutch Delta Plan 2100 was developed by an independent team of experts, reporting directly to the Prime Minister and included recommendations not only on technical issues but also on institutional and financial ones related to the Delta Plan implementation. This type of holistic Delta Plan is considered an essential planning instrument for all delta areas, which are mostly affected by climate change but also have a great potential to support strong economic development.

The Dutch National Waterplan 2009-2015 is the first five year plan based on the Delta Plan 2100. The Water Mondiaal program is the international component of this National Waterplan and places water at the centre of the Dutch bilateral cooperation. Apart from making Dutch “water” knowledge and experience available to other delta countries, Dutch water organisations also want to learn from their colleagues in other delta countries. Water Mondiaal intends to strengthen the cooperation between national and sub-national government institutions, but also between knowledge institutes, businesses in the private sector and non-governmental organisations (the GKBN model) and more importantly, the interaction between these stakeholder groups. The formation of consortia and joint ventures with counterparts in these countries is one possibility to shape such cooperation.

The following five themes have been identified as core topics for the starting phase of Water Mondiaal:

- Water & Food and Ecosystems
- Water safety
- Water supply and sanitation
- Water and Climate change adaptation
- Water Governance

Bangladesh is one of the five countries selected to start the Water Mondiaal Programme.

B. Bangladesh as partner in Water Mondiaal

Bangladesh is a deltaic country located at the lower end of the three great rivers: the Ganges, the Brahmaputra and the Meghna. Due to its geographical location, a large part of the country is considered flood prone. The development potential of the country, be it in the agrarian or non-agrarian sectors, largely depends on the development and the management of its water resources. Flooding by rivers is caused by a combination of factors like inflow from upstream catchments, flash floods from neighbouring hills, in country rainfall, and drainage congestion. Large seasonal variations in river flows and gradual loss of channel depth cause banks to erode and river courses to change. Wave action during high water levels further accelerates the process. Riverbank erosion is responsible for destruction of agricultural lands and homesteads. The water quality of the rivers has progressively deteriorated due to increasing withdrawals, industrialisation and insufficient river flows to dilute the pollutants during the lean flow periods. The increased use of agrochemicals and the discharge of untreated domestic sewage and industrial effluents into the rivers have aggravated the problem. The reduced flow of the Ganges in the dry season, coupled with the silting of the distributary mouths has exacerbated the process of northward movement of the salinity front. Finally, the impact of climate change could be very significant on river flows and thus on agriculture, fishery and navigation and the anticipated sea-level rise would cause coastal submergence, enhance drainage congestion, and thus salt intrusion.

The Government has the responsibility to deal with these challenges created by its impressive rivers and to ensure the safety of the many living and working in the vast low-lying areas along the coast and rivers and to use the water for its economic growth in a sustainable manner. Over the past 40 years The Netherlands has a longstanding involvement with the Bangladeshi water sector through its development cooperation. The development of the polders along the coast, the creation of the water management organisations by the water-users and the increased number of rural people with drinking water supply and sanitation are examples of the Dutch cooperation. However, as Bangladesh is moving fast towards a mid-income country, the development cooperation will be phasing out in future. The objective of the Water Mondiaal program is that the Dutch water partners (NGOs, private sector and knowledge institutes) will remain or become involved in the water related developments in Bangladesh.

Discussions between the Dutch Water Mondiaal delta team for Bangladesh in 2010 with representatives from ministries, knowledge institutes, the private business sector and NGO's have resulted in defining entry points for this cooperation. General consensus among the Bangladeshi was that the development of a Bangladesh Delta Plan would be an effective instrument to guide future water related developments including the consequences of the climate change. This conclusion was confirmed by a letter from the Prime Minister's Office to the Ambassador of the Kingdom of The Netherlands requesting to advise her on the Dutch experience in the development of its Delta Plan 2100 and how that could be of use for the development of a Bangladesh Delta Plan.

The activities defined by these Terms of References will result in recommendations from the Ambassador to the Prime Minister regarding the development of the Bangladesh Delta Plan 2100.

The Bangladesh Delta Plan 2100 would be based on a combination of spatial planning with land use zoning, integrated water resources management and local economic development policies and is thus a holistic plan. Inter-ministerial coordination, in particular between the ministries of Water Resources, Local Government, Agriculture, and Environment, is essential as it will be the basis for the water related activities in the five-year Plans. The Delta Plan 2100 will cover most of Bangladesh but develop specific attention for selected areas (hotspots) being most vulnerable to climate change and also considered as centres for major economic growth based, amongst others, on irrigated agriculture. The Southern Delta, the waterway link between Chittagong and Dhaka and the Haor area in the North-eastern part of Bangladesh are mentioned as hotspots.

In particular the climate change effects require a planning horizon towards the year 2100. The consequences of the future developments for the water sector due to factors such as the population growth, the climate changes and economic development will have to be analysed. The Delta Plan 2100 will present measures to protect the living environment and define criteria for a sustainable economic growth.

The development of a Bangladesh Delta Plan 2100 is considered important for the following reasons:

- The Bangladesh Delta Plan 2100 will define the preconditions related to water management supportive for sustainable development designed for the year 2100. It will provide directions of creating a healthy and secure living and working environment. The Plan will indicate how to deal with the water challenges and opportunities, qualitative and quantitative alike and be the basis for the five year plans specifying the activities to be done.
- The Southern Delta and the Haor area are important for the food security in Bangladesh, but also very much affected by climate changes. At present, agriculture and more general the economy in these envisaged hotspot areas is underdeveloped and measures will have to be defined on how agriculture can become a driving force for economic growth.
- The Bangladesh Delta Plan 2100 will provide a framework for the Government of Bangladesh for the works/actions to be taken. Inter-ministerial cooperation will be a key element to ensure its successful implementation. Also for the bilateral cooperation between Bangladesh and The Netherlands as well as major other development partners, the Delta Plan 2100 will be an important tool. Moreover, this Plan will be the basis for investments by the international climate adaptation funds; it is expected that Bangladesh will be one of the first countries to use these funds at a large scale.
- The Bangladesh Delta Plan 2100 would have to gain the status of a well-respected mechanism to guide the country towards sustainable development, both at the national (Bangladesh) level and internationally. This would then contribute to the reputation of both Bangladesh and the Netherlands and joint ventures and consortia of Bangladeshi and Dutch delta management stakeholders in the fields of spatial planning, integrated water resources development and management, local economic development policy making and implementation, agriculture based value chain coaching, combined with climate change adaptation and enhancement of climate change resilience.

The Bangladesh Delta Plan 2100 will build upon suitable existing policies, strategies and plans, filling gaps and fine-tuning them. It would have to be directed and developed by generally respected Bangladeshi experts in the fields of spatial planning and integrated water resources management, together with other experts from fields like agriculture, fisheries/ aquaculture, environment and forests, etc. They would have to keep Members of Parliament from various political parties and other key opinion leaders in the country well informed about the delta planning and development process, in order to ensure that the Bangladesh Delta Plan will become the broadly accepted basis for long-term planning and investments from both government, development partners and the domestic and foreign private sector.

The Dutch Water Mondiaal Team concluded at the end of 2010 that a broad consensus exists on the necessity to develop the Bangladesh Delta Plan 2100. The next step would be the finalisation of the process towards the start of the Bangladesh Delta Plan 2100 formulation and incremental implementation process. This next step will be carried out by a Delta Preparatory Team (DPT).

C. The Technical Assistance requested

The requested assistance is important for the strategic bilateral cooperation between Bangladesh and the Netherlands as it will provide the basis for a renewed orientation thereof. From development cooperation towards a much broader bilateral cooperation in the water sector whereby the private sector, NGOs and

knowledge institutes from both countries are actively involved. The Bangladesh Delta Plan 2100 will also provide a starting point for this broader cooperation.

In view of the strategic importance of the DPT, a high quality team is required for this assignment. If the composition of such a team requires the formation of a consortium, the bidders are encouraged to do so. International experience is required and in particular in Bangladesh and with the development of water related master plans. Most of the work will have to be conducted in Bangladesh and although the Dutch organisation will be in the lead for the contractual obligations, it is obvious that the Bangladeshi members will have to carry out the bulk of the tasks of the DPT. Linkages with all stakeholders in the Netherlands as well in Bangladesh will be an advantage. The bidder is requested to reflect on the above criteria in the proposal.

C.1 Consultants Duties and Responsibilities and phasing of activities

The uncontrolled rivers resulting in erosion and poor navigability but also in increased salt intrusion and the sea embankments not even able to protect against tidal surges, let alone storm surges and cyclones, are examples of inadequate functioning of the water sector and thus constraining sustainable economic development. Climate change will place even more pressure on water management and make actions the more urgently. The Delta Plan 2100 with its holistic approach and long term vision will provide an effective basis for the measurements to take so that water will support the sustainable economic growth.

The DPT will have to assess that the Government of Bangladesh is genuine in its wish to develop their Delta Plan 2100 and thus will soon start relevant actions for the creation thereof. Also, the interest amongst the different Bangladeshi and Dutch stakeholders for future cooperation has to be assessed. Such an assessment can only be done once the contours of the Delta Plan 2100 are drafted. The contours of the Delta Plan 2100 will, amongst others, be based on discussions with relevant stakeholders and an inventory of existing related policies and strategies and an overview of the present status of the water sector. These activities are defined as phase 1 and will be concluded by a yes or no for the development of the Bangladesh Delta Plan 2100.

If the conclusion of the DPT is that Bangladesh is ready for a full-fledged Delta Planning and Development process, the DPT will continue working on the preparations for the Delta Plan 2100 (phase 2a). The DPT will prepare an advice as requested by the Prime Minister on the content of the Delta Plan, in particular on geographical, technical and institutional issues and on its development process. Also the role of the Dutch stakeholders will have to be specified in some detail. During an official meeting the Bangladesh Delta Plan 2100 will be launched and will underscore the special relationship between the Netherlands and Bangladesh and the DPT will prepare the agenda and presentations for this High Level Meeting. The DPT will indicate on which themes and subjects the different Dutch stakeholders can develop their involvement in the Bangladeshi water sector related activities. If considered necessary by the Government of Bangladesh and the Embassy of the Kingdom of The Netherlands the DPT has to draft a Memorandum of Understanding to be signed at the launching ceremony.

If no clear confirmation can be obtained, latest decided upon by the end of 2011, the process to support Bangladesh with its National Delta Planning and Development endeavours, will either be completely abandoned or ambitions will initially be lowered (phase 2b). In this case PDT will define incremental support via a limited number of strategic interventions and a series of no-regret activities and investing in horizontal exchange with e.g. Indonesia until the time is ripe to start a more comprehensive delta planning process.

At the end of phase 1, the PDT will organise a discussion with the Water Mondiaal delta team Bangladesh and the EKN-Dhaka on the end result of phase 1 and the recommendations for the next phase. The Water Mondiaal team and the EKN-Dhaka will have to approve the proposal on the go or no-go for the Delta Plan 2100. The

requested proposal is for phases 1 and 2a only; the costs of the activities in phase 2b are supposed to be lower than for phase 2a.

The DPT will have to (although not limited to):

1. Assess whether the development of the Bangladesh Delta Plan 2100 is considered an essential and thus needed instrument for the sustainable development of Bangladesh and in which particular attention is given for the measures to be taken by the water sector. The Government of Bangladesh will organise and finance such a Delta Plan, whereby the inter-departmental cooperation has to be ensured.
2. Ensure that the content of the Delta Plan 2100 is drafted in broad lines, building on existing policies and strategies as well as on-going programmes, thereby ensuring that specific requirements from the major Bangladeshi public and private sector stakeholders that are needed to invest in the necessary infrastructure, are included in the Delta Plan. These stakeholders can range from important ministries and big domestic and foreign investors that can for instance develop certain stretches of river banks, to water management organisations. The donor community and knowledge institutes and NGOs need to be brought on board as well. The PDT will ensure that existing policies and strategies and the state of affairs of the water sector will be taken into account when drafting the content of the Delta Plan 2100.
3. Propose the institutional responsibility for the development of the Bangladesh Delta Plan 2100, which institutions will lead the process, which ones will be in the core group and which ones will be taken in the information and implementation loop by the lead institution or by an institution in the core group;
4. Ensure that the concerned stakeholders (private sector, NGOs and knowledge institutions) in Bangladesh as well as in The Netherlands understand the opportunities in being involved in the implementation of activities related to the Delta Plan 2100;
5. Present at the High Level Meeting the proposed Bangladesh Delta Plan 2100 and of the renewed bilateral cooperation with the Dutch stakeholders.
6. Provide inputs for the annual work plan for Water Mondiaal activities in Bangladesh in 2012 also in case no confirmation for a Delta Plan 2100 has been obtained.

C.2 The composition and organisation of the DPT

The Delta Preparatory Team (DPT) will have to be composed of Bangladeshi and Dutch members. The total number of the DPT members is indicatively set at six, most of who will have to be from Bangladesh. The tasks given to the DPT is very technically and political orientated and thus require well respected experts in different fields of knowledge. It is left to the organisations making a proposal to decide on the number of persons of their DPT as this is also related to the timing of the activities. The Dutch members will have to ensure that the Dutch water sector will be involved during this process of the development of the Delta Plan 2100 in Bangladesh and consider it as an effective basis for future cooperation. Support from Dutch partners for the Bangladesh Delta Plan 2100 is an essential element for this, as this Plan will be the basis for intensifying the cooperation between Bangladeshi and Dutch partners in the water sector. The Dutch members will assist their Bangladeshi colleagues in such a way that the concept of a Delta Plan is well understood, technical as well as organisational.

The Bangladeshi members will have to assess that the development of a Delta Plan is seen by the Government as an essential instrument for planning of water related development. They will have to discuss and define the broad outline of the Delta Plan, including the location of hotspots, technical, financial and institutional issues, and how this holistic plan will be developed (spatial planning, participative). An important aspect of the Delta Plan is the need for interdepartmental coordination and the Bangladeshi members have to assess the possibility thereof and to conclude on the institutional setting (lead organisation) for the Delta Plan. Concluding, the Bangladeshi members have to assess and seek confirmation that the Government is fully committed to the Delta Plan 2100 and willing to finance its development.

Through the Water Mondiaal program but even more so through the development cooperation support can be provided during the development of this Delta Plan as to ensure that end product will be of high standard. Therefore the DPT will have frequent consultations with the Embassy of the Kingdom of the Netherlands in Dhaka (EKN-Dhaka). The DPT has to assess if a Memorandum of Understanding (MoU) will be useful for the future cooperation and draft a MoU if needed.

The Curriculum vitae of the candidates for the DPT should be presented following the lay-out given in annex 1.

Important Dutch partners in developing process towards the Bangladesh Delta Plan 2100 are:

- The Dutch Water Mondiaal delta team for Bangladesh, chaired by the Ministry of Foreign Affairs in The Netherlands, is responsible for the development of the cooperation between both countries. Furthermore, the Ministry of Economic Affairs, Agriculture & Innovation, the Ministry of Infrastructure & Environment and the Netherlands Water Partnership are members of the delta team for Bangladesh.
- Given their responsibility for the facilitation of the bilateral relation, the Embassy of the Kingdom of The Netherlands (EKN) in Dhaka will be a key party when Water Mondiaal initiated activities and works in Bangladesh take place and the Water Cluster in the Embassy will also ensure connections and synergies between the Embassy's Water Programme and Water Mondiaal Bangladesh, as well as with organs like the Local Coordinating Group for Water Management and related LCGs;
- The Dutch water sector can be involved/accessed through the Netherlands Water Partnership (NWP) and in particular its Bangladesh platform.
- The Partners for Water program will be involved concerning financial management of Water Mondiaal activities; quotations, assignments, payments, etc. will be handled through this program.

It is expected that the bidder will be able to indicate the important Bangladeshi partners to be contacted during the assignment of the DPT.

C.3 Work Schedule

It is expected that the activities of the DPT will be completed in six months. Indications have been received that over the past months consensus amongst ministries has been reached about the urgent need for a Delta Plan 2100 and in that case less time has to be spent on this aspect of the requested technical assistance.

C.3.1 type of contract : lumpsum

C.3.2 budget for Services : euro 120,000 vat inclusive (for phases 1 and 2a)

C.3.3 duration of Services : estimated at six (6) months

C.3.4 location of Services : Bangladesh and the Netherlands

C.3.5 Management arrangements :

The technical assistance will be carried out under an assignment by Partners for Water and the supervision will be provided by the Bangladesh delta team of the Water Mondiaal program and the Embassy of the Kingdom of The Netherlands in Dhaka.

C.4 Deliverables and Reporting

The following reporting schedule is requested

- Draft Inception report submitted one month after contract signing
- Progress report at the end of phase 1
- Draft Completion Report at the end of the assignment.

The following activities are to be completed and presented in the Draft Completion Report:

- Determine the partner organisations and managerial and technical resource persons within them (Bangladeshi as well as Dutch) that are considered to be important for the development of the Bangladesh Delta Plan 2100.
- Discussions on on-going water- and land-planning initiatives as to better understand the present types of solutions that are chosen and to gain more insight in the possible connections that could be made between relevant on-going activities in prioritised geographical areas that can contribute to making the Delta Plan a reality.
- Establish the contours of the Bangladesh Delta Plan 2100 including the proposed hotspots and strategic river stretches.
- A first assessment of potential future sources of additional financing for the implementation of the Delta Plan, to fill gaps and to start R&D and pilot projects to test new solutions to water (related) problems or to enhance efficient water use.
- Discussions with key partner organisations to determine their involvement and responsibilities, to be presented in the form of draft MoU's.

For the High Level Meeting at which the Delta Plan 2100 will be launched, the DPT members will prepare and make most of the presentations. The organisation of this Meeting is not part of this assignment.

C.5 Key professional personnel and their qualifications

The Consultant will have to submit the Curriculum vitae of the proposed members of the Delta Preparatory Team following the lay-out presented in Annex 1.

For each of the proposed members a short description is to be made, indicating the qualifications of each member making him/her the best choice for the tasks of the Preparatory Delta Team. The roles and responsibilities of each member will have to be presented and also what will be done to ensure the synchronisation of the team members' efforts.

C.6 Criteria for assessment of the proposals

The proposal will be analysed based on the following criteria and for each criteria the weighing factor is given:

Technical proposal (0,9):

- Understanding of the task on maximal 2 pages	5%
- Approach on maximal 15 pages	25%
- Team composition and Curriculum vitae	
- Dutch members	15%
- Bangladeshi members	30%
- Composition and effectiveness of Delta team on maximal 2 pages	10%
- Firm's experience and ambition on maximal 5 pages	15%

- The proposal has to reflect the long-term interest for the bidder of cooperation in the water sector with Bangladeshi partners.

Financial proposal (0,1)

Contract sum: the lowest bidder will obtain 10 points and the highest bidder zero points. The points for the bidders in between the highest and the lowest will be calculated as a percentage of the difference between the contract amounts.

- Specify, according to the format presented in Annex 2, the cost for
 - o each DPT member
 - o travel and DSA
 - o others

C.7 Other Tender instructions

1. Proposal has to be submitted before 7 am on 7 June 2011
2. The Tender document has to be submitted in two envelopes: one for the technical proposal and one for the financial proposal; on both envelopes to indicate the content: "technical or financial proposal for Bangladesh DPT". These two envelopes to be put in one envelop with the address mentioned and the description: tender Bangladesh.
3. Delivery address is Partners for Water, Bezuidenhoutseweg 2, 2594 AV Den Haag
4. The selection will take place in June 2011.
5. Information can be obtained from Sandra Cats from Partners for Water (sandra.cats@agentschap.nl)

Lay-out of Curriculum vitae (Maximum 3 pages per expert)

1. Surname :
2. Name :
3. Date of birth :
4. Nationality :
5. Civil status :
6. Education :

<i>Institutions :</i>	
<i>Date: from(months/year) to (months/year)</i>	
<i>Degree(s) or diploma(s) :</i>	

7. Language skills : (Mark 1 to 5 for competence, where 5 is the highest):

<i>Language</i>	<i>Passive</i>	<i>Spoken</i>	<i>Written</i>

8. Membership of professional bodies :
9. Other skills (e.g. computer literacy, etc.):
10. Present position :
11. Years within the company :
12. Key qualifications (relevant to the project):
13. Specific experience (in non-EU member countries):

<i>Country</i>	<i>Date : from (months/year) to (months/year)</i>	<i>Name and brief description of the project</i>

14. Professional experience :

<i>Date :</i> <i>from (months/year)</i> <i>to (months/year)</i>	
<i>Location</i>	
<i>Company</i>	
<i>Position</i>	
<i>Description</i>	

<i>Date :</i> <i>from (months/year)</i> <i>to (months/year)</i>	
<i>Location</i>	
<i>Company</i>	
<i>Position</i>	
<i>Description</i>	

Etc.

15. Others :
e.g. Publications :

Lay-out Financial Proposal

1. Time spent in the Netherlands

Name expert	Name Company	Day tariff NL	Number of days	Sub-total	Total in €

2. Time spent in Bangladesh

Name expert	Name Company	Calendar-day tariff	Number of days	Sub-total	Total in €

3a Travel cost : air ticket

Name expert	To and from	Economy class Tariff	Number of tickets	Sub-total	Total

3b Travel cost: public transport, hired car, etc

Type of transport	Number of days	Unit cost	Sub-total	Total

4. Accommodation cost

	Hotel or office space	Per day	Number of days	Sub-total	
Dutch members					
Bangladeshi members					
Team					
Etc.					

5. Office cost:

	Unit cost	numbers		Sub-total	Total
Reporting					
Equipment					
Etc.					

6. Others:

	Unit cost	numbers		Sub-total	Total

7. Unforeseen: up to a maximum of 5% of total cost

	Unit cost	numbers		Sub-total	Total

8. Total exclusive VAT

9. Total inclusive VAT

Appendix 2 DPT Core Team Members and Resource Persons

DPT Core Team Members:

Giasuddin Ahmed Choudhury, Team Leader, CEGIS
Ir. Catharien Terwisscha van Scheltinga, Deputy Team Leader, Alterra
Ir. Dick van den Bergh, Deltares
Farook Chowdhury, Euroconsult/MottMacDonald
Prof. Dr. Jaap de Heer, Twynstra Gudde
Prof. Dr. Monowar Hossain, IWM
Dr. Zahurul Karim, Independent consultant

Technical Resource Persons from the Netherlands:

Dr. F. Ludwig, Wageningen University
Dr. Hero Hering, Euroconsult/MottMacDonald
J.C. Heun MSc., UNESCO-IHE
Prof. Ir. E. van Beek, Deltares
Prof. Dr. P. Kabat, Wageningen University

List of interviewed officials in Bangladesh:

Prof. Shamsul Alam, Member GED, Planning Commission
Prof. Mustafizur Rahman, Centre for Policy Dialogue
Dr. ATM Shamsul Huda, ex Secretary MoWR
Dr. Quassem, ex DG WARPO
Mr. Md. Shahjahan, DG WARPO
Ms. Dr. Nilufa, Islam and WARPO-team
Mr. Mukhlesuzzaman, ex DG BWDB
Mr. Md. A. Wadud Bhuiyan, A-DG, BWDB
S.D.M. Quamrul Alam Chowdhury, Dhaka WASA
Md. Zaki Mostafa Chowdhury, Dhaka WASA

Round Table Chair Persons

Mr. Md. A. Wadud Bhuiyan, A-DG, BWDB
Prof Rezaur Rahman, BUET
Ms. Dr. Nilufa Islam, WARPO

Appendix 3 Concept Note Bangladesh Delta Plan

Concept Note

Bangladesh Delta Plan 2100

1. Introduction

In the perspective of the good bilateral relationship, the Government of Bangladesh, through the Prime Minister's office, has requested the Government of the Netherlands to provide advice and recommendations for the formulation of a "Bangladesh Delta Plan 2100". In response to this request a Delta Preparatory Team (DPT) combining Bangladeshi and Dutch expertise has been formed. This concept note is developed by this team to explain the main ideas and vision of such a delta plan.

2. Security of life, livelihood and economy

Bangladesh, the largest deltaic floodplain of the world, comprises unique geographical, physiographic and climatic settings with dynamic hydrological, morphological, landscape and ecological characteristics governed by the world's three great rivers systems—the Ganges, the Brahmaputra and the Meghna. About 80% of the country is featured with rivers and their floodplains, which support life, livelihoods and economy of the whole Bangladesh delta. Already under natural circumstances water management in Bangladesh is very challenging. During the monsoon enormous amounts of water need to be drained towards the ocean while during the dry season often there is not enough fresh water available. Recent and future anthropogenic changes in the hydrological cycle due to *e.g.* climate change and construction of dams and barrages in combination with increasing water demands will make future water management even more challenging. In addition, pollution limits the use of the water for many sectors and has a big impact on human health and ecosystem functioning.

In the coming decades, Bangladesh will be confronted with increasing flood risks, challenges regarding water quality, droughts and salinisation due to climate change. Proper future development and management of the water resources is essential for the future development of Bangladesh.

Bangladesh is currently in a pace of developing its economic, social and environmental resources for sustainable future prosperity. For the coming days, the challenge for Bangladesh is to ensure food security and improve safety and living conditions for over 160 million people, while moving towards the status of a middle-income country by 2021. The development of Bangladesh can be slowed down due to climate related disasters resulting in large economic losses, reduced economic growth and little progress in poverty reduction. For example the 1998 flood inundated over two-third of Bangladesh and resulted in losses of 4-8 % of the GDP (US\$ 2 billion), while cyclone Sidr (2007) resulted in damage and losses of 2.6% of total GDP (US\$ 1.7 billion) (World Bank, 2010).

In response to the needs of development and security of life and livelihoods, Government of Bangladesh has been undertaking policies and programmes in different sectors during recent decades. Many sector policies were developed for sectors such as water, agriculture, land-use, fishery, forestry, etc. and many plans *e.g.* First Perspective Plan (25 year plan), Five Year Plan and the National Water Management Plan have been prepared, although some of those plans were not fully implemented. The government has the capability of preparing, funding, implementing and monitoring such sector plans from national to local level. However the sector plans and programmes

could not be implemented and funded in an integrated manner because departments under different Ministries of the Government have their own sometimes too narrowly-focused mandate; and often single-minded devotion to the fulfilment of a mandate is considered to be a virtue. The development culture could not be transformed from a project approach to a programme approach. Nevertheless, development problems do not occur departmentally; they appear in a complex web of interrelationships needing concerted efforts by more than one agency. Lack of coordination and its pernicious ramifications in the economy and society are no less evident than in the implementation of sector policies and development plans.

Again, Bangladesh is one of the countries which is most vulnerable to climate-variability and change. To reduce the vulnerability to climate change an adaptation strategy with an integrated and holistic approach of long-term planning for 50 to 100 years for sustainable socio-economic development is necessary. Such an integrated planning approach is inevitable for managing the natural resources and to fulfil the demands of sectors such as agriculture, fishery, forestry, livestock, industry, water supply and sanitation, environment, etc. Especial emphasis is required to water management issues integrating all the relevant sectors. Adequate water governance is probably the most important factor in the fight for safety and security of life, livelihood and economy of the Bangladesh delta.

3. Delta Vision, strategy and plan

The vision of developing the Bangladesh delta is to achieve long term sustainable development through adaptive water governance, based on long term analysis and scenario's as well as integration of relevant policy sectors and creation of adequate institutional arrangements and capacity, which could be termed as 'Delta Vision'. The vision can be achieved through implementing a holistic long term (50 to 100 years) integrated strategy and plan for Bangladesh, called 'Bangladesh Delta Plan 2100'. The Delta Plan 2100 will create a clear vision or grand design of the future in 2100. Based on that vision it will be possible to design 'no-regret' actions leading from the present day situation to the desired future.

Globally, many countries are preparing integrated long term plans for their country. The Netherlands is one of the pioneer countries, who prepared "Netherlands Delta Plan 2100" that analyses crucial developments like climate change, shows different scenario's to act upon, integrates various sectors and incorporates strong institutional arrangements and capacity in The Netherlands. Since there is a resemblance between The Netherlands and Bangladesh in geographic, hydrological, physiographic and climatic vulnerability, experience of Netherlands for preparing and implementing a Delta Plan can be used for the Bangladesh case.

4. Delta Plan addresses important issues

The Bangladesh Delta Plan 2100, with its holistic approach and long-term vision (50 to 100 years), addresses natural resources management and climate change related issues of water safety, food production, salt intrusion, shortage of land, environmental and ecological problems and other important aspects to reach an adequate level of safety and food security as well as sustainable economic growth of whole Bangladesh. Since Bangladesh delta is mostly governed by water resources, water management issues in different sectors (e.g. agriculture, public health,

environment, etc.) will be the main concern in the whole planning process. The development of a Delta Plan 2100 for Bangladesh offers the possibility to:

- a. make a long term (50-100 years) analysis of developments and scenario building of problems and issues related to natural resources with especial emphasis on water, land, agriculture, public health, environment , water safety, food security, socio-economic, spatial and ecological matters
- b. develop a long term vision on the future governance of natural resources in Bangladesh delta
- c. form a roadmap for processes of policy development, decision making and integrated implementation
- d. align institutional development, capacity building and the development and realization of projects with the over all strategy of the Delta Plan.
- e. utilize limited fund in more effectively through multiple objective oriented development projects

The Delta Plan can provide the following benefits and opportunities for sustainable development of Bangladesh:

- it serves as umbrella that integrates all sector plans and policies with long term perspectives. It will change the individual sector approach of project planning and implementation to multi-lateral coordinated approach. This plan can be linked to short terms plans such as Five Year Plans, Vision 2021, and other planning processes (NWMP, ICZMP, Agricultural Master Plan for Southern Delta, Haor Master Plan, etc);
- the plan will enable the government policies and institutions for formulating and implementing climate change adaptation programmes in a more consistent way, ensuring efficient utilization of limited natural and economic resources in Bangladesh.
- it can facilitate conservation of natural resources in a comprehensive manner, especially the river floodplains and coastal ecosystems that will eventually ensure sustainable provisions of services to the life and livelihoods of vulnerable people;
- the plan will enhance the capacity of good governance through its focus on institutional arrangements, strengthening and capacity building, equity and justice among all sectors;
- opportunity of coordination and funding process will be more comprehensive among different government and non-government stakeholders;
- this plan will create an opportunity to harmonization of regional development plans for agriculture, environmental affairs, urbanizations, tourism, etc. with the national plans;
- further the Delta Plan will be a means of strengthening international cooperation with neighbouring countries as well as development partners.

In absence of such Delta Plan, sustainable socio-economic development and security of life and livelihoods in Bangladesh will remain beyond reach. Bangladesh will not be able to face the future challenges under changing climatic conditions with the current trend of short term sector planning processes. Without having a long term vision and plan, the development of limited natural, social and economic resources will be very complicated in future and will create much more conflicts than the present situation. Therefore, a Delta Plan is necessary for smooth transitions of development activities over next 50 to 100 years that will ensure sustainability of life and livelihoods in the Bangladesh delta.

5. Way forward

The Bangladesh Delta Plan, as it will be a guiding strategic plan for the whole nation, will be developed and owned by the Government of Bangladesh. The Government will lead the process of developing such a plan in which active participation of stakeholders from government and non-government agencies as well as civil society is crucial. Departments under different Ministries of the Government will have an over arching strategy to which their mandate and contributions will relate. In addition, private sectors will participate in relevant activities of the plan. The Delta Plan will be incorporated in the individual sector plans and implemented through development programmes of the different government ministries and departments as well as non-government organisations. Monitoring of the implementation of the Delta Plan could be carried out by a government agency. Appropriate institutional arrangements will be set up while preparing the plan. Adequate funding for preparing, implementing and monitoring the Delta Plan could possible come from government's revenue and development budget as well as through support of development partners.

DRAFT by DPT 25-09-2011

Appendix 4 Presentation of the Delta Plan Preparatory Team at the First Stakeholder Consultation Meeting, 27 October 2011

Bangladesh Delta Plan 2100

Giasuddin Ahmed Choudhury, Executive Director, CEGIS
Catharien Terwisscha van Scheltinga, Wageningen UR
Team Leader and Deputy Team Leader
Delta Plan Preparatory Team
gchdhury@cegisd.com; catharien.terwisscha@wur.nl

Summary



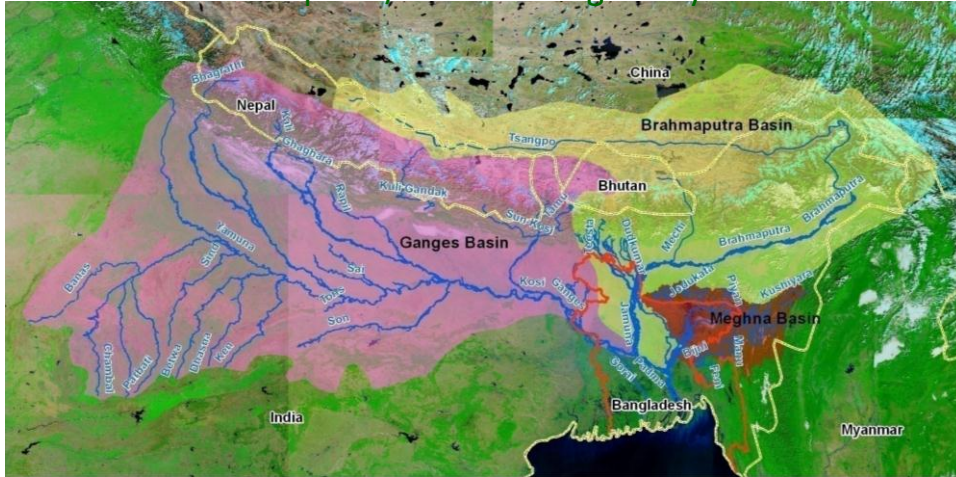
Leading questions

- What is a delta plan?
- Why would we need such a long-term holistic plan?
- Are there other examples of Delta Plan which we may benefit from?
- Don't we have enough plans already?
- Need for implementation

Presentation overview

1. Situation in Bangladesh
2. Future perspective: Need for long term action
3. Experience in the Netherlands
4. Bangladesh Delta Plan 2100
5. Challenges and benefits
6. Way forward

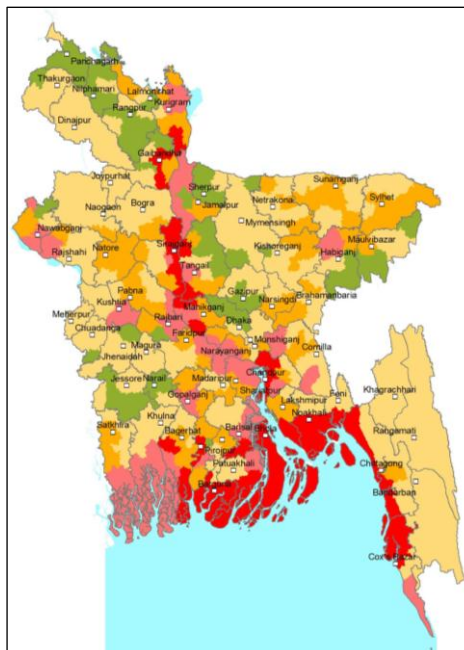
1. Situation in Bangladesh: Downstream of Ganges-Brahmaputra/ Jamuna-Meghna Systems



Ganges Basin	
Catchment area (sq km)	10,00,000
Av. Annual rainfall (mm)	1,200
Av. Annual discharges (cumec)	11,000
Max. Discharge (cumec)	78,000
Sediment transport (m ton/yr)	550

Brahmaputra/Jamuna Basin	
Catchment area (sq km)	5,73,000
Av. Annual rainfall (mm)	1,900
Av. Annual discharges (cumec)	20,000
Max. Discharge (cumec)	1,00,000
Sediment transport (m ton/yr)	590

Meghna Basin	
Catchment area (sq km)	77,000
Av. Annual rainfall (mm)	4,900
Av. Annual discharges (cumec)	4,600
Max. Discharge (cumec)	20,000
Sediment transport (m ton/yr)	13



Hazard Class Map

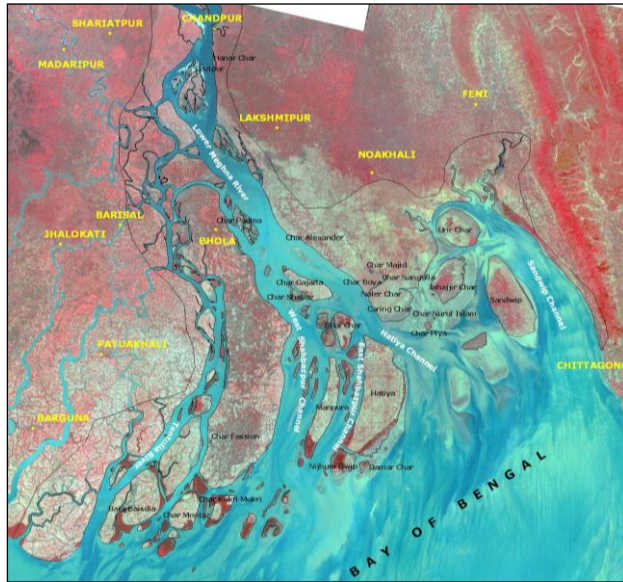
Ranking of multi-hazard maps used for preparing the risk-index :

- ❖ Cyclone (high risk-5, risk-3, wind risk- 1)
- ❖ Flood (Severely flooded due to major river floods – 3, flash flood due to major river-2, other flood-1)
- ❖ Riverbank erosion(severe erosion-2, erosion -1)
- ❖ Drought (very severe drought prone areas – 2, severe drought-1)

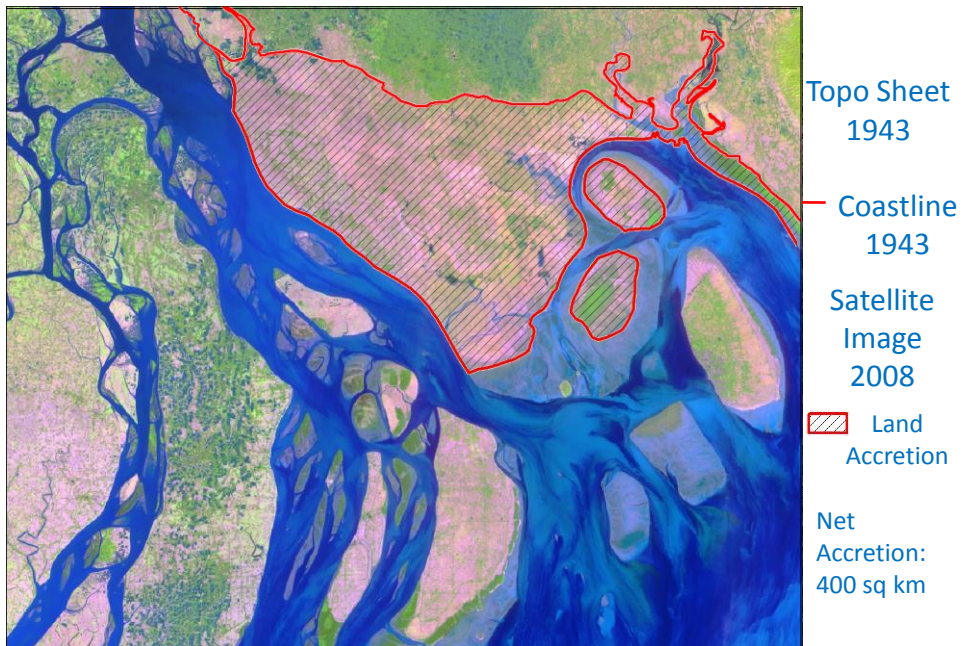
Legend

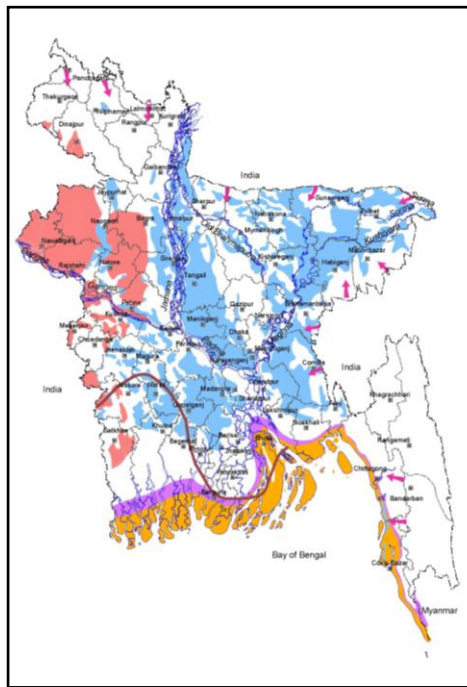
- District headquarter
- District boundary
- Hazard class**
- Very High (5.00-above)
- High (4.00 - 4.99)
- Moderate (3.00 - 3.99)
- Low (1.00 - 2.99)
- Very Low (below 1.00)

Land Reclamation in the Meghna Estuary



Land Accretion from 1943 to 2008



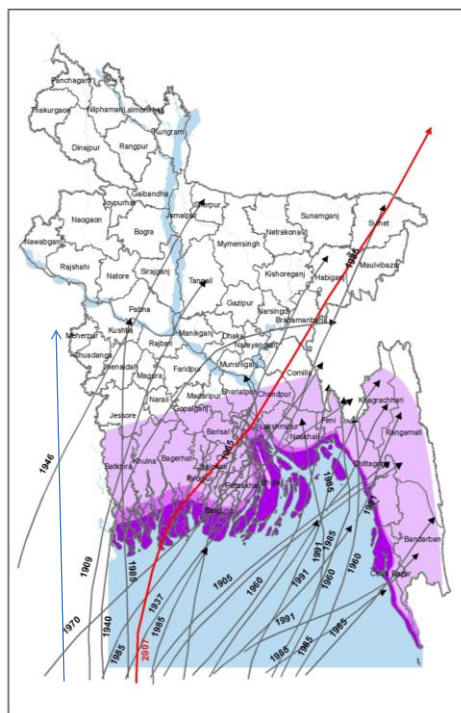


Vulnerability due to Natural Disasters



Legend

- International boundary
- District boundary
- Rivers
- Normal Flood
- Flash Flood
- Severe drought prone area
- Surge Height above 1 meter
- Surge Height less than 1 meter
- 1 ppt salinity Isoline



Cyclone

Some major cyclones hitting Bangladesh coasts in years

1876	1941	1948	1958	1960
1961	1963	1966	1970	1977
1983	1985	1986	1991	1997
1998	2007	2009		

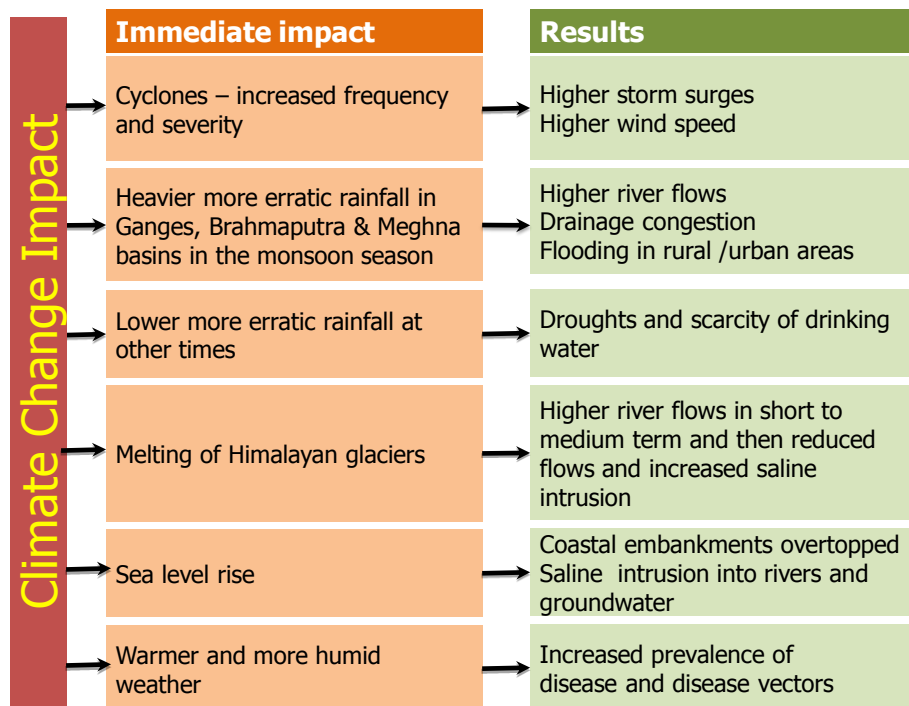
Legend

- International boundary
- District boundary
- High Risk
- Risk
- Wind Risk
- Cyclone track
- SDR path

Coastal Flooding with Sea Level Rise <1m



CGIS



1. Bangladesh Policies in the Delta

- National Water Management Plan
- Integrated Coastal Zone Management Policy and Plan
- Country Investment Plan for Agriculture and Food Security
- Bangladesh Climate Change Strategy and Action Plan

Importance of coordination, need for joint planning

2. Future Perspective: need for long term action

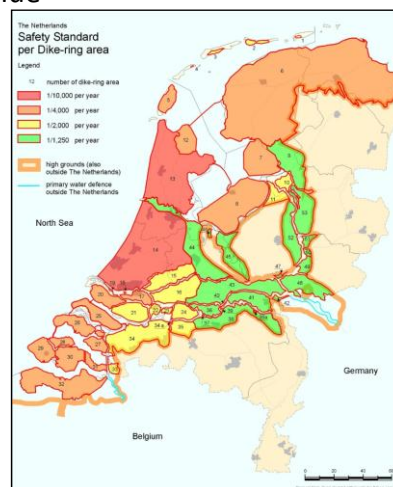
- Ensure food security
- Improve safety & living conditions
- Becoming middle income country by 2021
- Climate related disasters may result in:
 - large economic losses
 - reduced economic growth
 - little progress in poverty reduction

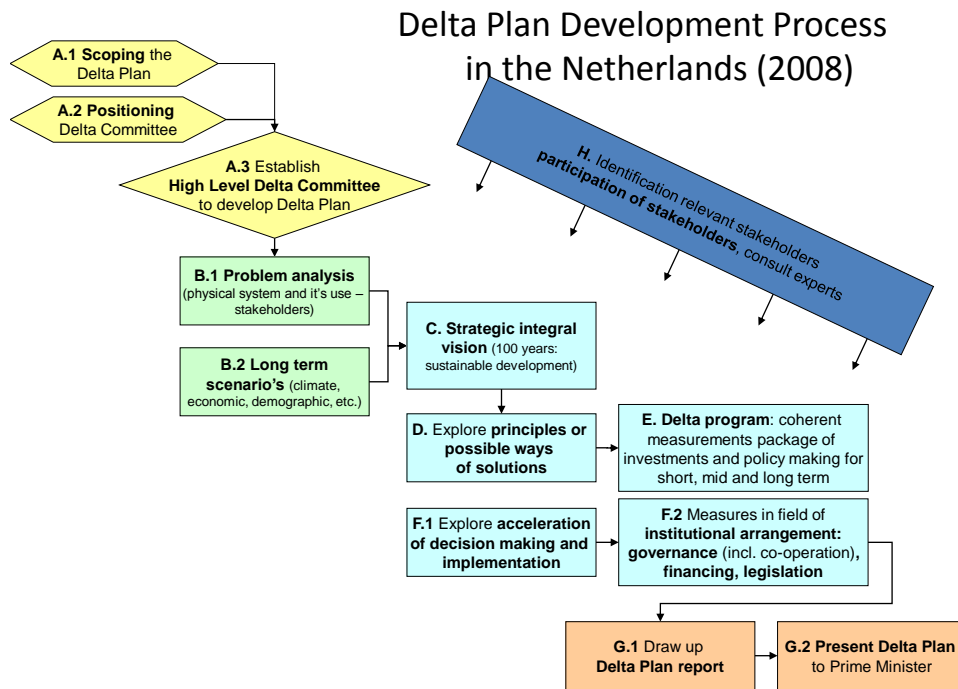
3. Delta Plan in the Netherlands



3. Delta Plan in the Netherlands

- The Netherlands: $\frac{2}{3}$ flood-prone, 9 million inhabitants, 65% GNP, 1800 billion € invested value
- Flood defences status: **backlog**
- Flood protection standards: **Outdated**
Since 60's:
Growth economy: factor 6
Growth population: 50 %
- Climate: **changes**
Sea level rise: +0.65 to 1.30 m
River discharge





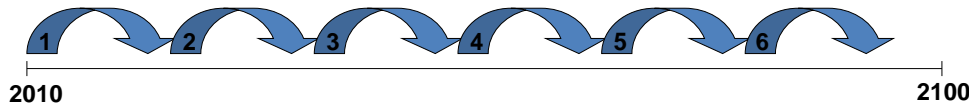
Analysis: Delta Plan in the Netherlands

- High level Delta Committee (10 members)
 - members were respected representatives of politics, science and business community
 - chaired by former Minister of Agriculture (prof. Veerman)
- All main stakeholders presented (ministries, lower levels of government)
- Independent
 - members did not represent specific organizations
- Broad and early stakeholder participation
- Strong technical secretariat
- Ultimate result (Delta Plan / Vision) presented to Prime Minister
- Integrated and holistic approach
- Longer term view

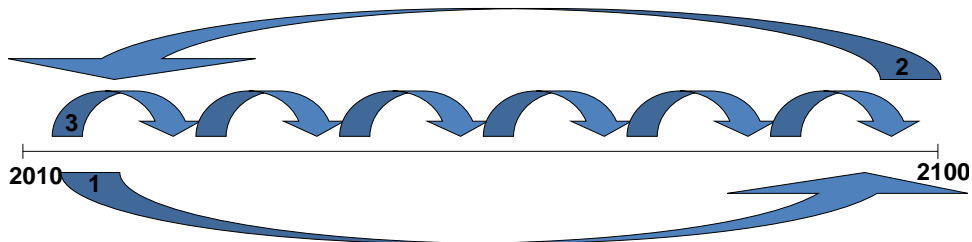


Way of working with Long Term Vision

Instead of:



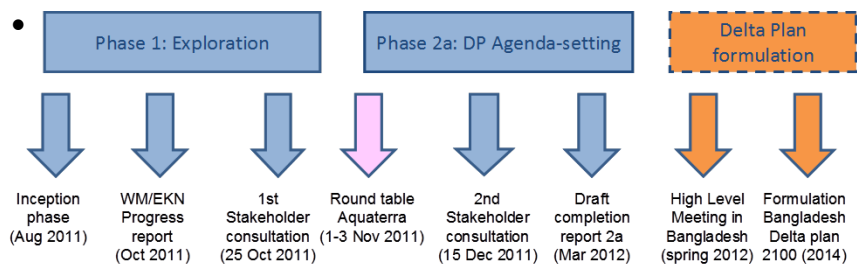
Work with long term vision (e.g. 100 years), next back casting to present and subsequently work with regular plans



4. Bangladesh Delta Plan 2100

- GOB, through the Prime Minister's office, requested GON to provide advice & recommendations for formulation of "Bangladesh Delta Plan 2100"
- GON commissioned "Delta Preparatory Team" with Bangladesh & Dutch Expertise
- PM's office involved General Economics Division (GED), Planning Commission

Timeline



Delta Vision, Strategy & Plan

- Vision: Developing the Bangladesh delta to achieve long term sustainable development through adaptive water governance, based on:
 - long-term analysis as well as integration of relevant policy sectors and
 - creation of adequate institutional arrangement and capacity
- Strategy: Prepare the plan (approx 2 yr) with involvement of many stakeholders, followed by implementation

Bangladesh Delta Plan 2100

- Make a long term (50-100years) analysis of development & scenario building of problems and issues related to natural resources with special emphasis on
 - water
 - Land
 - Agriculture
 - public health
 - Environment
 - water safety
 - Food security
 - Socio-economic condition
 - Spatial & ecological matters

Bangladesh Delta Plan 2100

- Develop Make a long term (50-100years) analysis of development & scenario building of problems and issues related to natural resources with special emphasis on, water, land, agriculture, public health, environment, food security, socio-economic, spatial & ecological matters
- Develop long-term vision on future natural resources
- Form a roadmap for processes of policy development, decision making and integrated implementation
- Align institutional development, capacity building and development and realization of projects with the over all strategy of delta plan
- Utilize limited fund in more effectively through multiple objectives oriented development projects

5. Challenges and benefits of a Bangladesh Delta Plan 2100

Challenges

- [mention challenges: inter ministerial cooperation; national level planning; complex setting; uncertainty; need for new knowledge]

Benefits

- Act as an umbrella that integrates all sector plans and policies with long time perspective
- Change from individual sector approach project planning & implementation to multi-lateral coordinated approach

5. Challenges and Benefits

- Delta Plan can be linked to Five Years Plans, Vision 21, NWMP, ICZMP, CIP, Agricultural Master Plan for Southern Delta, Hoar Master Plan
- Enabling policies & institutions for formulating & implementing climate change adaptation programmes in more consistent way
- Ensure efficient utilization of natural & economic resources
- Facilitate conservation of natural resources

Business as usual - is not an option

6. Way Forward

- Guiding strategic plan for whole nation
- To be developed & owned by GOB
- Participation of private sectors

Practically:

- Development of Terms of Reference
- Consultation on TOR – December 2011
- Meeting to formally launch Bangladesh Delta Plan 2100 – expected early 2012

Thank you

Appendix 5 Working Paper: Towards a Terms of Reference for the Preparation of the Bangladesh Delta Plan and Implementation

WORKING PAPER

Towards a Terms of Reference

for the Preparation of

Bangladesh Delta Plan and Implementation

December 2011

Delta Plan Preparatory Team



Towards a Terms of Reference for the Preparation of Bangladesh Delta Plan and Implementation

This working paper was prepared by the Delta Plan Preparatory Team, with the objective to spark discussion and solicit input during stakeholder consultation regarding the formulation of TOR for the Bangladesh Delta Plan and Implementation

1. Background

Bangladesh, the largest deltaic floodplain of the world, comprises unique geographical, physiographic and climatic settings with dynamic hydrological, morphological, landscape and ecological characteristics governed by the world's three great river systems - the Ganges, the Brahmaputra and the Meghna. About 80% of the country is featured with rivers and their floodplains, which support life, livelihoods and economy of the whole Bangladesh delta. Water management in Bangladesh has been a challenge. During the monsoon enormous amounts of water need to be drained towards the ocean while during the dry season there often is not enough fresh water available. Recent and future anthropogenic changes in the hydrological cycle due to e.g. climate change and construction of dams and barrages in combination with increasing water demands will make future water management even more challenging. In addition, pollution limits the use of the water for many sectors and has a big impact on human health and ecosystem functioning.

In the coming decades, Bangladesh will experience increased flood and cyclone risks, deteriorated water quality, droughts, and increased salinization. Bangladesh has a large population that will not decline in the next several decades, it needs to sustain an economic growth rate that is at and around 7 to 8%, maintain a stable political environment and address the consequences of climate change. These circumstances entail huge impacts on the available natural resources and severity of natural and man-made disasters. Technological development and innovative approaches to planning and implementation may provide opportunities for more cost effective infrastructure, exploitation of previously untapped natural and human resources and for increasing the resilience as well as the productivity of agriculture and aquaculture systems. Climate change will act as 'amplifier' of the already existing challenges. Proper future development and management of natural resources including spatial planning is essential for the future development of Bangladesh.

Bangladesh is currently in a pace of developing its economic, social and environmental resources for sustainable future prosperity. For the coming days, the challenge for Bangladesh is to ensure food security and improve safety and living conditions for over 160 million people, while moving towards the status of a middle-income country by 2021. The development of Bangladesh may be slowed down due to climate related disasters resulting in large economic losses, reduced economic growth and little progress in poverty reduction. For example the 1998 flood inundated over two-third of Bangladesh and resulted in losses of 4-8 % of the GDP (US\$ 2 billion), while cyclone SIDR (2007) resulted in damage and losses of 2.6% of total GDP (US\$ 1.7 billion) (World Bank).

In recent decades the Government of Bangladesh has developed policies and programs in different sectors such as for water, agriculture, land-use, fishery, forestry, etc. Many plans, e.g. First Perspective Plan (25 year plan), Five Year Plan and the National Water Management Plan have been prepared but they have been only partially implemented. Because departments under different ministries of the Government have their own sometimes narrow-focused mandate and the development culture is based on a project approach instead

of a programmatic and holistic approach, many plans and strategies have not been fully executed.

Bangladesh is one of the countries that is most vulnerable to climate-variability and change. To reduce the vulnerability to climate change an adaptation strategy with an integrated and holistic approach to long-term planning for 50 to 100 years is necessary. Such an integrated planning approach is essential for the management of natural resources and sustained development of agriculture, fishery, forestry, livestock, industry, and provisioning of water supply and sanitation and sustainable use of the environment. Especial emphasis is required to address water management issues and integrating all the relevant sectors. Adequate water governance is a key element in the struggle for safety and security of life, livelihood and economy of the Bangladesh delta.

2. Objectives of Bangladesh Delta Plan

The main objective is to prepare a comprehensive strategic plan with a holistic approach and long-term vision (50 years to 100 years) aimed at addressing natural resources management and climate change related issues of water safety, food production, salt intrusion, land reclamation and char development, environment and ecology, in order to reach an adequate level of safety and food security as well as sustained economic growth of Bangladesh.

The specific objectives of the plan are:

- To undertake a long term (50 to 100 years) analysis of developments and scenario modeling of natural resources management with especial emphasis on water, land, agriculture, public health, environment, water safety, food security, economic growth, spatial and ecological developments;
- To develop a long term vision on the future governance of natural resources and spatial planning in Bangladesh delta;
- To formulate a roadmap for policy development, decision-making process, and coordinated implementation of defined actions;
- To bring the institutional framework as well as the involved governmental organizations in the position to deal with the formulation of the Delta Plan and its implementation.

The Delta Plan 2100 would provide the followings benefits and opportunities for sustainable development of Bangladesh:

1. It serves as umbrella that integrates all sector policies and plans with long term perspectives. This plan could be linked to short term plans such as Five Year Plans, Vision 2011, and other policy and planning processes like: National Water Policy, National Water Management Plan (NWMP), Integrated Coastal Zone Management Plan (ICZMP), Agricultural Master Plan for Southern Delta, Haor Master Plan, etc.;
2. The Delta plan will enable the government policies and institutions to formulate and implement climate change adaptation programs in a more consistent way, ensuring efficient utilization of limited natural and economic resources in Bangladesh;
3. It can facilitate conservation of natural resources in a comprehensive manner, especially the river floodplains and coastal ecosystems that will eventually ensure sustainable provisions of services to the life and livelihoods of vulnerable people;
4. The plan will enhance the capacity of good governance through its focus on institutional arrangements, strengthening and capacity building, equity and justice

among all sectors. This is an opportunity which already requires attention during the formulation of the Delta Plan;

5. The opportunities of coordination and of the funding process will be more comprehensive among different government and non-government stakeholders;
6. The plan will create an opportunity to harmonize regional development plans for agriculture, environmental affairs, urbanizations, tourism, etc. with the national plan;
7. The Delta Plan will be a means for strengthening international cooperation with neighboring countries as well as with development partners;
8. Effective management of water resources, protection against tidal and storm surges and improved drainage in the existing polders in the coastal area;
9. The Bangladesh Delta Plan 2100 will provide a framework for the Government of Bangladesh for the works/actions to be taken. Inter-ministerial cooperation will be a key element to ensure its successful implementation. Also for the bilateral cooperation between Bangladesh and The Netherlands as well as major other development partners, the Delta Plan 2100 will be an important carrier. Moreover, this Plan will be the basis for investments by the international climate adaptation funds; it is expected that Bangladesh will be one of the first countries to use these funds at a large scale.

The Bangladesh Delta Plan 2100 would have to gain the status of a well-respected mechanism to guide the country towards sustainable development, both at the national (Bangladesh) level and internationally. This would then contribute to the reputation of both Bangladesh and The Netherlands and joint ventures and consortia of Bangladeshi and Dutch delta management stakeholders in the fields of adaptive water governance, spatial planning, integrated water resources development and management, local economic development policy making and implementation, agriculture based value chain coaching, combined with climate change adaptation and enhancement of climate change resilience.

3. Scope of the Delta Plan and Implementation

Below the five key discussion points for consideration regarding the Delta Plan and Implementation are given. These points regard institutional issues, drivers and scenarios, physical setting, policy and stakeholder involvement and investment portfolio.

3.1. Institutional setting of the Delta Plan and Implementation

Statement 1:

In order to champion and manage the planning and implementation of the Delta Plan it is necessary to set up a permanent body such as The Delta Commission. Simply a coordinating or a steering committee will not suffice since permanency over 50 to 100 years is essential and appropriate for championing the plan.

The Bangladesh Delta Plan will be developed and owned by the Government and people of Bangladesh. The Government will lead the process of developing such a plan in which active participation of stakeholders from public sector as well as private sector, civil society, and NGOs is crucial. Departments under different Ministries of the Government will participate based on the overarching strategies to which their mandate and contributions will relate. In addition, private sector, knowledge institutes and NGOs will participate in relevant activities of the plan.

The Delta Plan will be incorporated in the individual sector plans and implemented through development programs of the different government ministries and departments as well as non-government organizations.

A Delta Commission will be formed to combine the government action with support from development partners like the Netherlands – and provide an innovative think tank and platform of action in bringing the Delta issues regarding planning and implementation together. What will be the structure of this commission and functions? They need to be defined and drawn out in the coming weeks.

Appropriate institutional arrangements will be set up while preparing the plan. The Delta Commission plays an important role in adequate funding for preparing, implementing and monitoring the Delta Plan.

A Delta Commission needs an innovative approach and prepare plans and implementation activities stages, i.e. a planning process parallel to an implementation process, where the planning process feeds into the implementation process and vice versa – thus allowing continuous learning and application of the most modern technologies and knowledge. Planning is about formulating scenarios for the future, developing a long term future vision, and working towards further translation of this vision into delta actions and decisions in close linkage with existing and on-going planning and policies.

3.2. Drivers of the Delta Plan and Implementation

Statement 2:

The Delta Commission will be responsible for analyzing the trends for the different drivers and will work out future scenarios

The major points i.e. the key drivers of change are population growth, climate change, subsidence, economic development, urbanization, technological and political development. These are to be considered in preparation of the Bangladesh Delta Plan 2100 are:

- *Climate change:* One of the important drivers is climate change, which is expected to have severe impacts on infrastructure, food and livelihood security of the country. On average every five years, up to two-thirds of Bangladesh is inundated by floods that cause substantial damage to infrastructure, housing, agriculture, and livelihoods. Low-lying coastal areas and coastal polders are also at risk from tidal floods, water-logging and severe cyclone induced storm surges. Severe cyclones make landfall on the Bangladesh coastline, either before or after the monsoon, causing storm surges that are sometimes in excess of 7 meters. Crops and the livelihoods of the rural poor in low-lying coastal areas are also devastated by saline water intrusion. All these climate related risks will be exacerbated due to a warmer and wetter future climate that goes beyond historical variations.
- *Population growth:* Rising population is causing pressure on land and water use, livelihood and economic development. Bangladesh is one of the most densely populated countries of the world. The projected population in the year 2025 is about 180 million and about 220 million in the year 2050. Currently 40 percent of the population is living in poverty and is vulnerable to natural hazards. Absolute numbers will increase over time. The growing population increases pressure on use and consumption of resources and sustainable environment that need to be addressed in managing resources under efficiency and equity principles.
- *Subsidence:* The subsidence process is one of the main drivers in the Delta formation. The lower deltaic area of Bangladesh is located on two active troughs, Faridpur Trough and Hatiya Trough. Although most of the Bengal Basin is slowly subsiding, the troughs are subsiding more rapidly. The area shows evidence of three different types of subsidence:

tectonic, anthropogenic, and that resulting from the compaction of peat layer. GPS data were processed with Gamit_Globk software developed by MIT, USA. Geodetic GPS observation in Bangladesh shows that the north-eastern part of Indian plate covering Bangladesh is moving 4 to 5 cm per year with respect to International Terrestrial Reference Frame (ITRF). The vertical component of the GPS time series plots demonstrate that the Bengal Basin as a whole is subsiding, including Dhaka, Sylhet, Patuakhali and Khulna areas. The result from collected data shows Khulna is going down by 9.55 mm/year.

Prolonged water logging may be experienced in the coastal polders because of combined effect of subsidence and sea level rise. The subsidence inside the polder can be minimized if sedimentation is allowed though tidal flooding in a planned way, currently tidal river management is practiced.

- *Economic development:* Bangladesh wishes to achieve Middle Income status by 2021. This will mean a sustained economic growth of some 8 percent. The country is already undergoing an unprecedented urban and economic transformation and the growth will surely alter the landscape. Corridors and connectivity will be significant in providing economic efficiency and agglomerations with increasing economic density concentrated around greater Dhaka. Achieving Middle Income status will mean more resource use and consumption for a larger population with increased standard of living as well as increased need for infrastructure and municipal services. There is a need also to provide protection and safety to areas of economic density and growth poles that in many areas of Bangladesh are increasingly threatened by natural disasters and risks. It needs to be acknowledged that economic growth is the engine to drive the change and transformation of the country and without appropriate planning and programming of that change/transformation chaos and disasters will continue to exist, and under a more increasingly difficult climatic conditions.
- *Technological development:* Technological development may provide opportunities for more cost effective infrastructure, exploitation of previously untapped natural resources and for improving resource productivity and increase the resilience of agriculture and aquaculture systems. Technology innovations may open opportunities to enhance the functionality of infrastructure solutions, to extend the life-time of infrastructure and/or to develop more cost effective designs. Unless technological developments and related governance aspects do not significantly improve, the overall resilience and sustainability will significantly decrease in the future.
- *Sediment:* It is important to focus the sediment dynamics between Bay of Bengal, rivers and hinterland. Coastal polders suffer from a sediment deficit because embankment prevents tidal flooding and results in siltation of river. There is an enormous opportunity of land reclamation in the Bay of Bengal for agricultural production and enhanced livelihood. The potential of land reclamation under the changing climate needs to be assessed and materialized.
- *Political development:* Political stability and focus towards more international cooperation will have major impacts on effective adaptation measures. Regional cooperation and sharing water between lower and upper riparian countries is a crucial issue for water resources development and management in Bangladesh. This issue needs to be addressed in the Delta Plan;
- *Development of policy network and instruments:* The policy network consists of all organizations somehow contributing to or otherwise influencing the formation and implementation of the Delta Plan. This driver is crucial for making a clear difference in progress which is really needed to cope with climate change. There are large opportunities for improvement of all kinds of processes, for learning and for better cooperation and integrated action in this network. These and also improvement of the policy instruments (e.g. data gathering and analysis, scenario building, risk management, knowledge management, upgrading management and (project) organization competencies,

monitoring and evaluation systems, legal and financial procedures etc.) need to be examined and addressed by the Delta Plan.

To enhance resilience and sustainable development of Bangladesh a clear vision has to be developed on how to respond to the various drivers of change as well as on how to play along with the trends in society. The development and adaptation of land and water use, the extension and revitalization of infrastructure, and the management and reduction of disaster risk as well as restoration of natural systems are the major issues to be addressed for the management of Bangladesh Delta.

We need to get from present drivers and their trends to a better future (scenarios).

3.3. Challenges in the Delta

Statement 3:

The Delta Commission is to study key issues in the Delta related to changes at the longer term in the physical settings, and come up with integrated knowledge regarding these and related issues, and translate these in action perspectives for Delta Management.

The drivers – as described in the earlier section – will have an impact on the physical setting in the Delta. Integrated and new knowledge is required, to understand what the impact of the changes may be, in order to make decisions on strategies for the future.

The following issues form the contours (key areas) of the Delta Plan:

- i. Water Resources Assessment
- ii. Climate Change
- iii. Water and Food
- iv. Water Supply and Sanitation
- v. Urban Drainage
- vi. Water and Infrastructure
- vii. Environment
- viii. Water Transportation
- ix. Water and Energy
- x. Land Reclamation and Char Development
- xi. Trans-Boundary Flow
- xii. River Training, Dredging and Erosion Prevention and Control
- xiii. Water Governance, Policy Coordination, Cooperation and Capacity Building
- xiv. Disaster Management
- xv. Population Growth and (Climate Change Induced) Migration
- xvi. Spatial Planning and Land Use
- xvii. Institutional Strengthening and Legal Framework

The list is long and not exhaustive. However, focus is required for the work of the Delta Commission. It is therefore proposed to address the issues as an aggregated level under the following five clusters.

1. Integrated Land Use
2. Urban Water Management
3. River Management
4. Disaster Preparedness and Management
5. Innovative Water Infrastructure and Management

Two issues can be indicated as cross cutting

6. Climate Change Impact and Adaptation
7. Governance and Strengthening of Institutions and Stakeholders at all Levels

3.4. Policy linkage and implementation mechanism

Statement 4:

The Delta Commission should assess how linkages can be made between existing and future policies and between the involved organizations and their performance to improve coordinated action and effective policy outcomes – and inform stakeholders at different levels and include their opinions and suggestions in the work

A Delta Plan is not only made as a document. The process and its resulting document are only useful, if linked to the existing situation (i.e. existing policies, programs), the performance and outcomes of agencies and the people. A holistic approach of the Delta Plan only can succeed by joint and coordinated action by capable agencies in the whole policy network.

Bangladesh has many policies and plans, already in place. There is felt a lack of cooperation, coordination and implementation between ministries as well as between central and decentral levels of government. An emergent planning approach is proposed, where a planning track runs parallel with an implementation track. In the implementation track, at first ‘no regret’ measures (measures that are useful any way, regardless of the direction of the developments) are implemented, and gradually, as more planning results become available, implementation based on those can be started.

Besides the before mentioned policies and plans, important policies to link to are: Climate Change Strategy, Country Investment Plan for Agriculture and Food Security (2011), BCCSAP (2009), ICZMP (2004). A next 5Year Plan should clearly include how a Delta Plan and Implementation addresses delta challenges as described.

3.5. Investment Portfolio

Statement 5:

The Delta Commission needs to facilitate incorporating the Delta Plan in the existing budgetary planning (Annual Budget/Revenue Budget, MTBF) process

Perhaps one of the most critical constraints facing the development and implementation of the Delta Plan will be financing the investment plan. Not only sources of finance are significant but incorporating the investment plan within preferably a Medium-Term Budgeting Framework is of crucial importance. Recent developments in MTBF should assist in establishing the budget planning process over the long-term for the investments required within the Delta Plan.

A long-term investment plan should be prepared which clearly indicates prioritized projects, sources of financing and timeline for completion of supplies and works. Sub-project preparation and prioritization will follow standard procedures of economic and financial cost benefit analysis.

Sources of financing will include (i) GoB funds, (ii) private financing, and (iii) community funds. GoB funds will be own sourced funds and those obtained from donors. There are clear advantages of funding certain or specific activities from specific funding source such as private financing for water transportation, WSS and water safety, to name only a few. Community financing could be targeted for operation and maintenance and smaller but strategic investments.

Besides, the Delta Plan also provides an umbrella for development partners, to assist.

The Government of the Netherlands has already indicated its willingness to assist with the formulation of the DP.

Appendix 6 Summary of the 2nd Stakeholder Meeting, 15 December 2011

Bangladesh Delta Plan, Second Consultation Workshop Towards a Terms of Reference

Chairperson: Professor Dr. Shamsul Alam, Member, General Economics Division, Planning Commission
Date: 15 December 2011
Place: LGED Building 3 Conference Room

NOTES

The meeting took place in the framework of the preparation for the Bangladesh Delta Plan by the General Economics Division of the Planning Commission, supported by the Bangladesh Delta Plan Preparatory Team (DPT), funded by the Government of the Netherlands.

Opening: Professor Shamsul Alam opened the meeting, in which over 70 people from Government organizations, knowledge institutes, NGOs and private sector participated (participants list separately available). He welcomed all and stressed the importance of the meeting, which is held as a follow up of the meeting on 27 October, where the need for a Bangladesh Delta Plan was discussed.

Giasuddin Ahmed Choudhury, Team Leader DPT, and Catharien Terwisscha van Scheltinga, Deputy Team Leader DPT, gave a presentation on the Bangladesh Delta Plan.

Five round tables were organized on

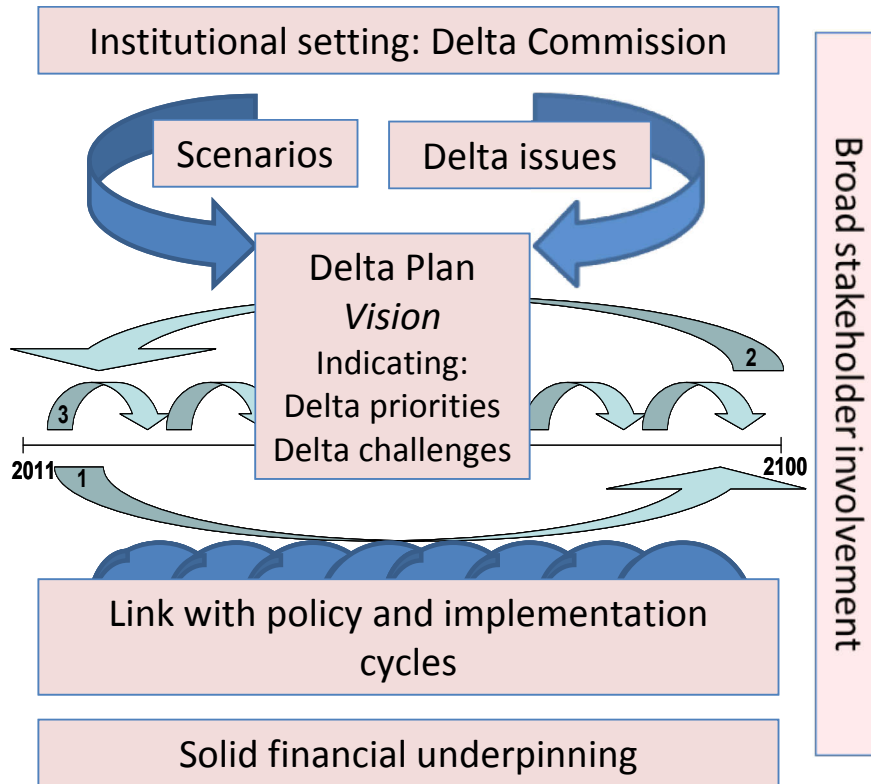
1. Institutional setting
2. Drivers and scenarios
3. Delta challenges
4. Policy and implementation
5. Finance

A separate report is available on the results of the round tables discussions. At the end of the round tables, Catharien Terwisscha van Scheltinga, Deputy Team Leader, Bangladesh Delta Plan Preparatory Team, brought the five main areas of the integrated and holistic approach for the Delta Plan back together in one frame of thought (figure below).

In a brief contribution Mr Khaleduzzaman, EKN highlighted

- the importance of the community
- the importance of an integrated approach. The link between policy making and implementation.
- Delta Planning is not only planning, it is also implementation. Implementation of on-going projects may be integrated through a mechanism. In this roundtable a parallel line of implementation was discussed which he considers positive. EKN is planning a follow up project for the successful IPSWAM project. Besides water management and infrastructure, the project will have a strong component on agriculture and fisheries, and climate proofing is part of the objective. It may be placed within this Bangladesh Delta Plan framework, so planning can learn from implementation and vice versa.

- Added value for donors of Bangladesh Delta Plan is an important point. The existence of the plan may allow for quick processing, as a sector wise budget can be indicated.



In the concluding remarks Professor Shamsul Alam, Member GED, thanked the participants and those who contributed to the organization in particular. He indicated that there is a need to go forward, and the planning horizon should be more than a decade. This is the first time to think beyond. To face climate change and the related hydrologic changes make a need for this. Adequate technical manpower is needed, related institutes need to be involved. The Bangladesh Delta Plan has already started. It is a big thing, which Bangladesh will do, based on its own existing institutions. Many existing plans may be integrated in this effort. It is a participatory effort, which is important. National dialogues can be part of it. Resources are of concern, as we need to mobilize them, not only from donor side, but also, and in particular, from our own resources. He urged to work actively on the follow up of this meeting.

Appendix 7 Dutch Stakeholder Consultation meeting, 10 January 2012

Bangladesh Delta Plan Preparatory Team

Consultation Meeting in the Netherlands / Expert meeting on Bangladesh Delta Plan

Present in the meeting

Catharien Terwisscha van Scheltinga	Alterra, Wageningen UR, Deputy Team Leader Bangladesh Delta Plan Preparatory Team
Dick van den Bergh	Deltares, Member DPT
Jaap de Heer	Twynstra Gudde, Member DPT
Jetze Heun	Unesco-IHE, Resource person DPT
Pavel Kabat	Wageningen University, Resource person DPT
Fulco Ludwig	Wageningen University, Resource person DPT
Eddy Moors	Alterra, Wageningen UR
Raimond Hafkenscheid	Water Mondiaal, MinBuza
Sandra Cats	Agentschap NL, Partners for Water
Lotte Schippers	NL EVD International
Martijn van Staveren	Netherlands Water Partnership
Hans van Leeuwen	Convenant Water & Klimaat/NWP
Rutger van der Brugge	Deltares
Gerda Lenselink	Deltares
Petra Hellegers	LEI Wageningen UR
Marnix de Vriend	Royal Haskoning
Wim van Driel	Alterra/Delta Alliance

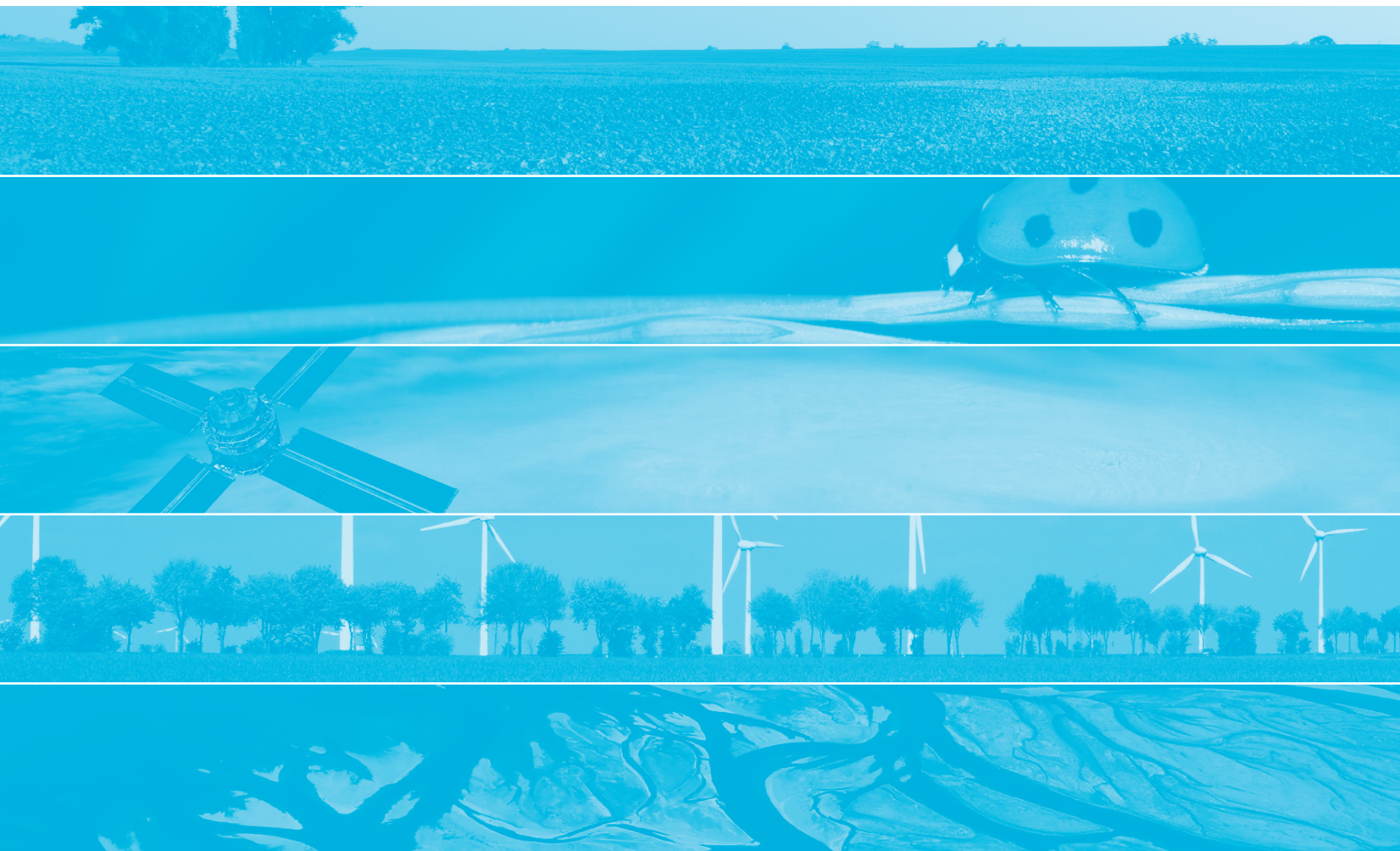
Summary note

Tuesday 10 January 2012 an expert meeting was organized by the Bangladesh Delta Plan Preparatory Team (DPT) in Wageningen. The task assigned to the DPT by Partners for Water is to explore the possibility of a Bangladesh Delta Plan and also to assess the commitment from the Bangladesh side. The objective of the meeting was to share the information on the Bangladesh Delta Plan process so far, and to reflect with resource persons on the possible approach and implementation for a Bangladesh Delta Plan. The meeting also concluded the 'kwartiermakersfase', the Bangladesh Delta Plan Preparatory Team, funded by Partners for Water. Fifteen experts attended - from government, knowledge and private sector (participants list included in Annex 1).

A presentation on the work of the DPT was held by Catharien Terwisscha van Scheltinga (Alterra), of which the slides are available in Annex 2. The presentation was followed by a discussion lead by Dick van den Bergh (Deltares).

Main conclusions of the discussion:

- There is substantial evidence that the Bangladesh government and broader water sector have a strong interest in, and commitment to, the development of an integrated, long term Delta Vision 2011. This can be concluded based on the results of the DPT and the recent meetings, the consultation meetings organized by GED/DPT on 27 October and 15 December, and most recently a government meeting on the 4th of January initiated by seven Bangladesh ministries (no DPT involvement). A formal statement of this commitment, e.g. presented in a letter to the CdP Dhaka will be appreciated (comment Raimond).
- To facilitate involvement of Netherlands agencies, including Partners for Water or other (financial) instruments, an MoU is required to allow for direct bilateral partnering. The Strategic partnership Arrangement NL - Vietnam can act as a concept.
- The strategic position the Dutch water sector is wishing to continue/acquire should not be forgotten. The Netherlands is seen as the preferred strategic partner, and for example should have a clear position in the institutional arrangements for developing the Bangladesh Delta Plan.
- The Bangladesh Delta Plan is now being coordinated by the Planning Commission, assigned by the PM Office. As far as DPT is concerned, this is the most appropriate arrangement as alternatives (directly under PM Office is too politically biased, Ministry of Water Management not solid enough) are no option. In addition, the Planning Commission can bring in a long term vision and incorporate (financial) planning for the years to come.
- The discussion on the regional/national focus of the Delta Vision and activities. Wider focus or narrow focus. It was stated that the South Western Delta may be perceived to link with current political attention; a broader approach may be good to prevent political bias/possible next government objection. Political sensitivities should be acknowledged and addressed by EKN.
- ADB and Worldbank should be actively involved in the early stages of the vision development. Bangladesh government partners could stress the need to ADB and WB to do so. Also the Netherlands could influence participation via the TA programmes with the WB.
- Parallel to vision development, similar attention should be paid to the implementation and financial engineering of the vision.



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