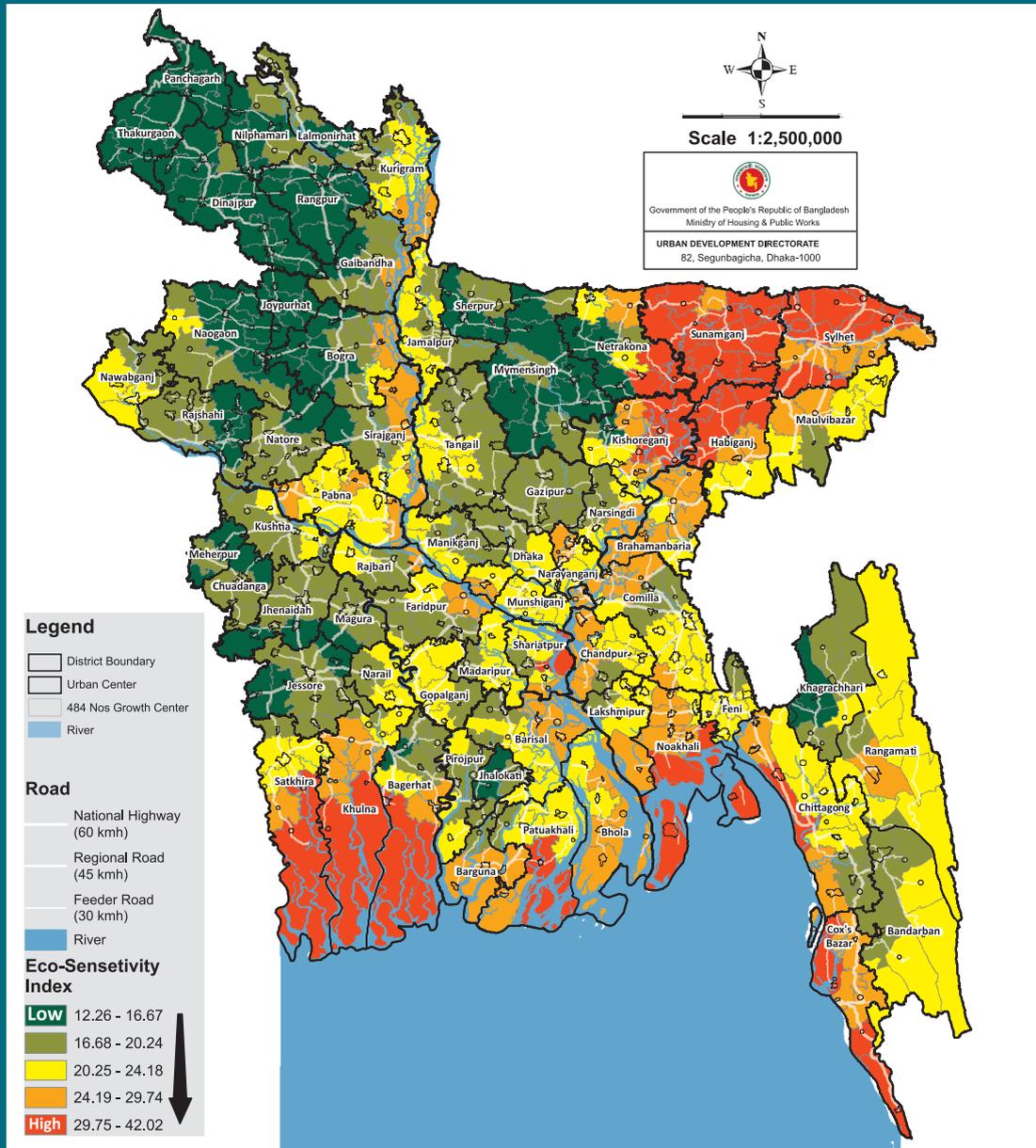




REVIEW REPORT

SCOPE OF MAINSTREAMING CLIMATE CHANGE STRATEGIES INTO URBAN LEGISLATIONS



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Sharif Ahmed M.P
State Minister
Ministry of Housing & Public Works
Government of the People's Republic of Bangladesh

MESSAGE

The climate change issue is very crucial for the overall development of Bangladesh, which has been reflected in the national level policy documents and plans like the Eighth Five Year Plan, Perspective Plan 2041 and the Delta Plan 2100. I am glad to know that Urban Development Directorate (UDD) under the Ministry of Housing and Public Works (MoHPW), as an important stakeholder of the study on “Scope of Mainstreaming Climate Change Strategies into Urban Legislations”, is going to publish the study report. This publication is the outcome of a Memorandum of Understanding (MoU) signed between UDD and UN-Habitat.

I also convey my heartfelt gratitude to the Department of Urban and Regional Planning, Bangladesh University of Engineering and Technology (BUET) for conducting such an excellent study. I also convey special thanks to UN-Habitat for providing support to the study. Our greatest leader, pioneer of independent and sovereign Bangladesh, Father of the nation Bangabandhu Sheikh Mujibur Rahman always dreamt for a prosperous and developed Bangladesh. His daughter now the honorable Prime Minister Sheikh Hasina is working hard to build such a developed, prosperous and smart Bangladesh.

I expect that the outcome of the study would contribute to mainstream climate change into national urban-related legislation, which in turn would help to build climate-resilient urban areas of Bangladesh.

Joi Bangla, Joi Bangabandhu
May Bangladesh Live Forever.

Sharif Ahmed, MP



Kazi Wasi Uddin
Secretary
Ministry of Housing & Public Works
Government of the People's Republic of Bangladesh

MESSAGE

In the name of Allah, most gracious & most merciful

I am happy to know that Urban Development Directorate (UDD), under the Ministry of Housing and Public Works (MoHPW), a key stakeholder of the study “Scope of Mainstreaming Climate Change Strategies into Urban Legislations”, is going to publish the worthy document as an outcome of a Memorandum of Understanding (MoU) signed between the UDD and the UN-Habitat.

I am also glad to know that the Department of Urban and Regional Planning, The Bangladesh University of Engineering and Technology (BUET) has conducted such an outstanding and well-timed study supported by the UN-Habitat. I convey my heartiest gratitude to the UN-Habitat for extending their necessary support in conducting the study.

The study is an excellent endeavor for identifying the gap and scope for incorporating climate change issues into national urban-related legislation and also has an influence on the drafted “Urban and Regional Planning Act, 2022”. I expect that the output of this study will contribute to develop climate resilient urbanization in Bangladesh.

Kazi Wasi Uddin



Bruno Dercon

Officer-in-Charge

UN-Habitat Regional Office for Asia and the Pacific

MESSAGE

Climate action has become pivotal in the advocacy and support of the UN-Habitat Regional Office for Asia and the Pacific in the past 15 years. It has become the corner stone in partnerships globally and in the region.

A key steppingstone has been definitely the programme “Mainstreaming Climate Change into Urban-related Policies”. From 2014 to 2017, UN-Habitat and ESCAP jointly supported policy makers in Bangladesh, Cambodia, Nepal, the Philippines, Mongolia, Sri Lanka and Viet Nam. I am delighted to see captured the Bangladesh collaboration into the new report, published by with the support of the Ministry of Housing and Public Works of the Government of the People’s Republic of Bangladesh.

The project mobilized regional experts, delivered country case studies including from Bangladesh and yielded a regional guide for integrating climate change concerns into urban-related policy, legislative, financial and institutional frameworks, jointly published by UN-Habitat and ESCAP in 2018. The project delivered additional advisory services and capacity building to National Governments and assistance to build local capacities in support of multi-sectoral and broad-based pilot city intervention to inform national urban policy and legislative review.

Our work and collaborations on Cities and Climate Change and on National Urban Policies has contributed to a global recognition of the need and urgency to embed climate action into sustainable urbanization, on both mitigation and adaptation, in all sectors and at all levels. In recent years, the UNFCCC released major reports and climate action pathways for Human Settlements. The Marrakesh Partnership includes actions for the built environment encompassing the need for the greening and future proofing of infrastructure. The UNFCCC’s Nairobi work programme captures the collaborations of close to 500 leading and diverse organizations to close the gap on climate adaptation and resilience. Most recently, the Sharm El-Sheikh Adaptation Agenda sets out much needed outcomes for human settlements by 2030, on resilient infrastructure, resilient services and communities and improved risk management and crisis response.

I look forward to a strong continuing partnership with the Government of Bangladesh and the Ministry of Housing and Public Works.

Bruno Dercon



Dr.-Ing. Khurshid Zabin Hossain Taufique

Director

Urban Development Directorate (UDD)

Ministry of Housing & Public Works

Government of the People's Republic of Bangladesh

MESSAGE

According to the decision of RIO+20 Summit to include the adverse impact of climate change into comprehensive urban planning process, UN Habitat had undertaken a project entitled “Mainstreaming Climate Change into National Urban Policies”. Eight countries including Bangladesh, Nepal, Philippines, Sri Lanka, Vietnam, Indonesia, Mongolia, and Myanmar were selected for the project. Urban Development Directorate (UDD) under the Ministry of Housing and Public Works (MoHPW) along with the Honorable Mayor of Mymensingh Municipality (present Mymensingh City Corporation) attended an Expert Group Meeting (EGM) held at United Nations Conference Center, UNESCAP, Bangkok, Thailand to agree on modalities to mainstream climate change concerns into national urban related policies to achieve the objectives of the proposed project.

The project was awarded to Bangladesh through a competitive process following the EGM. Then UN-Habitat called for an Expression of Interest (EOI) for the said project and the Department of Urban and Regional Planning (DURP), Bangladesh University of Engineering and Technology (BUET) was selected for conducting the study after a competitive bidding process. This report is going to publish by Urban Development Directorate (UDD).

I express my gratitude to the Department of Urban and Regional Planning, Bangladesh University of Engineering and Technology (BUET) for conducting such a fruitful and sensible study. I also acknowledge with high appreciation the support provided by UN Habitat for undertaking the study in the context of Bangladesh.

I hope that the output of the study would help to mainstream climate change concerns into national urban related legislations including the drafted “Urban and Regional Planning Act, 2022”, which would help to build climate-resilient urban areas of Bangladesh.

Dr.-Ing. Khurshid Zabin Hossain Taufique

PROLOGUE

Rio+20 Summit emphasized on a comprehensive urban planning process to include adverse impact of climate change for urban development. Various countries in Asia and the Pacific have taken initiative for policy reform, budgetary allocation and capacity building to support local governments. But these initiatives are still very insignificant to attain sustainable development and combat the challenges against the risk of adverse impact of climate change.

As part of such initiative, UN-Habitat had undertaken a project entitled “Mainstreaming Climate Change into National Urban Policies” to support for incorporating climate change in national and multi-level governance structure and also strengthen local government. The “Cities and Climate Change Initiative” of UN-Habitat had been working closely with the local and national level governments of the 15 (Fifteen) countries in Asia and the Pacific. Eight countries including Bangladesh, Nepal, Philippines, Sri Lanka, Vietnam, Indonesia, Mongolia and Myanmar were selected for the proposed project (Appendix F). An Expert Group Meeting (EGM) was organized with the selected countries jointly by UN-Habitat and UNESCAP to agree on modalities to mainstream climate change concerns into national urban related policies to achieve the objectives of the proposed project. The objectives of EGM were: (i) agree on a framework for reviewing/assessing national urban related policy/legislation (national-urban, housing, urban infrastructure, urban planning, climate change) in participating countries, (ii) develop country specific implementation modalities and work plans, (iii) share and discuss good practices, and (iv) discuss/analyze policy options for mainstreaming climate change concerns into national urban related policies (Appendix G).

The EGM was held on “Mainstreaming Climate Change into National Urban Policies” in 17-18 March, 2015 at United Nations Conference Center, UNESCAP, Bangkok, Thailand. The three representatives from Bangladesh led by Dr-Ing. K. Z. Hossain Taufique, was then Deputy Director (Research & Coordination), Urban Development Directorate (UDD) were present in the conference. The country representative were the following:

1. Dr.-Ing. K. Z. Hossain Taufique, Deputy Director (R & C), Urban Development Directorate (UDD)
2. Mr. Ekramul Haque Titu, Mayor, Mymensingh Municipality (Present Mymensingh City Corporation)
3. Mr. Quazi Md. Fazlul Haque, Senior Planner, Urban Development Directorate (UDD).

The Bangladesh team prepared a country paper (Appendix H) and a Power Point Presentation (PPT) (Appendix I) following the Agenda (Appendix J), Background Paper (Appendix K) and Preparation Guidelines (Appendix L) respectively.

All the eight participating countries including Bangladesh presented their country paper, which had been prepared on the basis of the Agenda for EGM, Background Paper and Preparation Guidelines provided by UN-Habitat, in the EGM through PPT. The following 17 (Seventeen) policies, acts were reviewed and presented by Bangladesh team in the EGM:

Sl. No.	Urban/Local Policy (Law, national strategy etc.)	Custodian
01	National Urban Sector Policy, 2014 (draft)	Local Government Division
02	National Housing Policy, 2008 (draft)	National housing Authority
03	National Land Use Policy, 2001	Ministry of Land
04	National Water Policy, 1999	Ministry of Water Resources
05	Environmental Policy, 1992 and Implementation Programme	Ministry of Forest and Environment
06	National Agricultural Policy, 1999	Ministry of Land
07	Bangladesh Industrial Policy, 2005	Ministry of Industry
08	Renewable Energy Policy of Bangladesh, 2002	Ministry of Power, energy and Mineral Resources
09	Bangladesh National Building Code, 1993 (The Building Code is being reviewing by government and green building concept has been incorporated into the code)	Ministry of Housing and Public Works
10	National Environment Committee under Ministry of Environment and Forestry has been established in 1992	Ministry of Environment and Forestry
11	The Delta Plan 2100 (Draft)	General Economic Division, Planning Commission
12	The Urban and Regional Planning Act, 2015 (Draft)	Ministry of Housing and Public Works
13	National Disaster Management Policy (Draft)	Ministry of Disaster Management and Relief
14	The Town Improvement Act, 1953 Amended 2012 (Draft)	Capital Development Authority, Ministry of Housing and Public Works
15	The Chittagong Development Authority Ordinance, 1959	Chittagong Development Authority, Ministry of Housing and Public Works
16	The Khulna Development Authority Ordinance, 1961	Khulna Development Authority, Ministry of Housing and Public Works
17	The Rajshahi Town Development Authority Ordinance, 1961	Rajshahi Town Development Authority, Ministry of Housing and Public Works

A group work was performed by each of the participating country during the EGM on policy assessment method, agree on policy assessment method and developing national work plan. Mymensingh City of Bangladesh and Kathmandu City of Nepal were selected in principle as the piloting cities for implementation of the proposed project “Mainstreaming Climate Change into National Urban Policies” on the basis of presented country paper, and performed group work. It was decided in the EGM that a national focal point had to be nominated for implementation of the proposed project, organize an international level workshop had to be organized by the selected country for identifying the policies, acts, plans to be reviewed and also formation of a technical committee for rapid scanning and also an inter-ministerial meeting for finalization.

Ministry of Housing and Public Works nominated Dr. K. Z. Hossain Taufique, Deputy Director (Research and coordination), as the Focal Point for the national country team and gave consent for organizing a workshop on the proposed project on August 2, 2015 (Appendix M). Accordingly, the workshop was held on August 2, 2015 at the Conference Room of Public Works Department, MoHPW through participation of representatives from different ministries, departments, development authorities, city corporations, municipalities, development partners’, representative from UN-Habitat and international consultant from

the UN-Habitat. After detailed discussion, all the participants' were agreed to ensure their active participation in the project and also to form Technical Committee headed by the Additional/Joint Secretary, Ministry of Housing and Public Works comprising of 32 members and a Steering Committee Headed by the Secretary, Ministry of Housing and Public Works consisting of 31 members (Appendix N).

After agreed upon undertaking the proposed project for implementation in the workshop, UN-Habitat issued a Call for Expression of Interest and Proposal for Urban climate Change Partnership for Bangladesh dated on November 10, 2015(Appendix O). After competitive bidding Department of Urban and Regional Planning (DURP), Bangladesh University of Engineering and Technology (BUET) was selected for the project and the project was launched after signing an agreement between UN-Habitat and DURP on 24 September, 2016.

Besides, An Memorandum of Understanding (MoU) was signed between UN-Habitat and Urban Development Directorate (UDD) on March 13, 2017 to collaborate in strengthen the capacity of national government and urban stakeholders to integrate climate change concerns into national urban policies and planning processes and promote joint programming to enhanced capacity of national governments to address the urban dimension of climate change in urban planning and policy interventions (Appendix P).

Under the MoU between UN-Habitat and UDD the project was implemented in Bangladesh and DURP, BUET submitted the final report on “Scope of Mainstreaming Climate change Strategies into Urban Legislations” on March 17, 2017.

According to the MoU between UDD and UN-Habitat, the report has been published by UDD. As the project was awarded to Bangladesh through a competitive process UDD is very much happy to publish the report.



REVIEW REPORT

Scope of Mainstreaming Climate Change Strategies into Urban Legislations

March 2017



**Department of Urban and Regional Planning
Bangladesh University of Engineering and Technology (BUET)**

Executive Summary

In March 2015, UN-HABITAT, UNESCAP and UNEP began to jointly implement "Mainstreaming Climate Change into Urban Policies" as part of the project "*Cities and Climate Change Initiative*". On 24th September, 2016, the UN-HABITAT signed an Agreement of Co-operation with Department of Urban and Regional Planning (DURP), Bangladesh University of Engineering and Technology (BUET), Dhaka. It is expected that the Department of Urban and Regional Planning (URP) in co-operation with Habitat Programme Manager for Bangladesh, would perform some primary research and consultations with stakeholders for the achievement of outputs 1.4, 1.5 1.6, 2.1 and 2.2 of the project "*Cities and Climate Change Initiative*".

A multidisciplinary team of DURP, BUET has started working from 1stOctober, 2016. It has first meeting with UN-HABITAT and Urban Development Directorate (UDD) on 04thOctober 2016 on how to initiate the project, and the probable activities of first stakeholder workshop. Accordingly first stakeholder workshop was held on 17th November 2017.

The research team invited 21 key government stakeholders identified by the research team and Urban Development Directorate (UDD) to attend the launching program and workshop session of which 14 attended. The primary objectives of the workshop were to finalize the list of key stakeholders from government sectors and to update the list of policies, plans and acts related to urban planning and climate change to be reviewed under the project. Several strategic documents, plans, policies, acts and rules in relation with climate change and urban planning were identified in the workshop. Some of the documents were not reviewed considering their weak association and importance on urban planning and development sector. Again, during the process of exploration and review, a number of the documents were identified and included in the review list due to their contextual importance in this research project. The research team decided to review three strategic papers, 12 policy documents, two planning documents, 12 acts and six rules of the government for mainstreaming climate change in urban planning process.

These documents were classified into four categories, (i) climate change related documents; (ii) national level development policies and plans; (iii) urban planning related documents and (iv) cross sectoral documents. All these documents were collected and thoroughly reviewed over a time period of three months. This report contains the review of the identified policies, plans, acts and rules. The objective of the review was to identify the gaps in the government documents to main stream climate change related strategies and policies in urban planning process.

In response to the impending threats of disaster from climate change, the government developed the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2008. The plan was revised in 2009. National Adaptation Programme of Action (NAPA) for Bangladesh has incorporated findings of studies on impacts, vulnerabilities and adaptation need assessment carried out over the last few years. It has kept the format of the National Adaptation Programme of Action (NAPA)-2005 that was prepared by the Ministry of Environment and Forests (MoEF), Government of the People's Republic of Bangladesh as response to the decision of the United Nations Framework Convention on Climate Change (UNFCCC). Bangladesh Government voluntarily agreed to combat climate change impacts through its commitment made in the Intended Nationally Determined Contributions (INDC) 2015. After reviewing these three documents, the BUET research team identified 38 program areas of intervention which is associated with urban planning. In order to understand and to analyze the existing relationship/ gap in among the reviewed documents, a matrix has been developed. The intervention program mentioned in BCCSAP 2009, NAPA 2009 and INDC 2015 were placed in the rows of the matrix while the government documents were arranged along the columns of the matrix. The corresponding cells connecting the row and column attributes are labeled with a symbol to show whether the policy/ plan/ act and rule address the climate change issue or not.

The analysis shows that national level plans and strategic documents like the Perspective Plan for Bangladesh (2010-2021), National Sustainable Development Strategy (2010-2021) and 7thFiveYear Plan (2016-2020) call for necessary measures to tackle the threat from climate change. The recently

formulated National Disaster Management Policy (2015), National Plan for Disaster Management (2010-2015) Bangladesh Agricultural Policy (2013), National Environmental Policy (2013) and Bangladesh National Building Code (2016) also provides necessary climate change adaptation and mitigation strategies in the light of impending threat to agriculture and environment. On the other hand, major sectoral policy documents (For example National Land Use Policy 2001, Bangladesh Industrial Policy 2010, Renewable Energy policy 2009) do not consider climate change issues in their policy agenda. It should be mention here that the water policy addressed most of the issues related with climate change as mentioned in BCCSAP 2009 and NAPA 2009 though it was formulated almost a decade earlier. In general, all relevant policies that are formulated before 2009 needed to be reviewed and updated with the goal of main streaming climate change impacts.

Plans, acts and rules are the implementation tools for the policy. For most of the policies these are absent. On the other hand there are acts, rules for which policies and plans are absent. With the exception of Disaster Management Act 2012 and Open Space, Play Ground and Water body conservation Act 2000, the acts and rules have failed to include issues of climate change in their scope.

Inclusion of disaster risk and climate change adaptation strategies in policies, plans acts and rules are primary requirement for reducing urban vulnerability and mainstreaming climate change in urban planning process. The research found clear evidence that there are significant gaps among policies, plans acts and rules of Bangladesh in this regard. It is also evident that there was duplication and overlapping between disaster risk reduction and climate change adaptation mechanism as mandated by the acts and rules. The laws on urban management and development and the urban plans largely failed to address climate change concerns. Similarly the laws and standing orders on disaster management have also not dealt separately with climate change. While some general provisions of few existing laws can be used to incorporate/integrate climate change considerations into bylaws, strategies, and plans, the general observation is that laws in most urban sectors need to be reviewed and amended to insert clauses on climate change and to ensure their compatibility with the BCCSAP. Similarly, institutional arrangements of BCCSAP and the urban legislations need to be reviewed to ensure that they are

mutually supportive and focus on climate change while planning for disaster management, urban development, land management, and urban services.

At local level planning and development process there is wide scope of inclusion of strategies for combating climate change through disaster management committee and standing committee of planning and development at urban local governments. It was also found that the local government institute lacks necessary skilled manpower and logistic to carry the approval and monitoring process as mandated in act. Due to absence of any well-defined mechanism it often runs through ad-hoc mechanism. It should be also noted here that the latest IPCC and COP reports were published in 2014 and 2015 respectively. These reports included some emerging cross cutting issues which are absent in the climate change documents of Bangladesh which were last updated in 2009. Local level mainstreaming of climate change is only possible through formulation of necessary plans, acts and rules in different sectors. Moreover, the report suggests a number of ways where the gaps can be addressed effectively both at national and local level.

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Chapter One: Background

1.1 Introduction

In March 2015, UN-HABITAT, UNESCAP and UNEP began to jointly implement "**Mainstreaming Climate Change into Urban Policies**" as part of the project "**Cities and Climate Change Initiative**" project. The project expected to be conducted in five countries; Bangladesh, Nepal, Philippines, Sri Lanka and Vietnam, and has four overall components:

1. *Assess National Urban Related Policies*
2. *Support Policy and Legislative Review*
3. *Explore local and national linkage*
4. *Develop regional guidelines*

The Bangladesh component of the project got underway in August 2015 with a national workshop on Mainstreaming Climate Change into Urban Policies, led by the Urban Development Directorate (UDD) under the Ministry of Housing and Public Works. This workshop discussed the priority policies that the project should target, key stakeholders to support the implementation, and the complementarity between the project and the ongoing work under the Comprehensive Disaster Management Program in Mymensingh.

Accordingly in January 2016, UN-HABITAT called for Expression of Interest (EOI) seeking partnership for achieving five of the objectives (Objective 1.4, 1.5, 1.6, 2.1 and 2.2) of the project "*Cities and Climate Change Initiative*". These five objectives aimed at:

1. Enhanced capacity and commitment of the national government in Bangladesh to address the urban dimension of climate change through national urban policies.
2. Enhanced capacity at the local level to mainstream climate change into planning.

On 24th September, 2016, the UN-HABITAT signed an Agreement of Co-operation with Department of Urban and Regional Planning (DURP) at Bangladesh University of Engineering and Technology (BUET), Dhaka. It is expected that the tasks (outputs 1.4, 1.5, 1.6, 2.1 and 2.2 of the project) will be conducted by Department of Urban and Regional Planning (DURP) under the guidance of the Habitat Programme Manager for Bangladesh, the overall supervision of the Human Settlements Officer in the UN-Habitat Regional Office for Asia and the Pacific and in conjunction with the project focal point from UDD.

1.2 Background of the Assignment

The Intergovernmental Panel on Climate Change (IPCC) has identified the interactions between climate change and vulnerability as one of the looming threats for settlement and society (Intergovernmental Panel on Climate Change (IPCC), 2007). Low adaptive capacity rooted in the development context, over exploitation of resources of urban ecosystem and increasing magnitude and frequency of climatic events make the cities of developing world more vulnerable. Bangladesh is cited as one of the most vulnerable country considering its low topography, disadvantageous geographic location, high density of population to be affected by climate change though its contribution to greenhouse gas emission at global context is negligible. This densely populated country of the world is growing at a fast pace in an unplanned manner with high population pressure, inadequate infrastructure, and poverty. It was estimated by IPCC that about 18 million people will be affected and 22,000 km² area will be submerged due to a sea level rise of 1.5 meter. The consequences of sea level rise are manifold (Baily and BCAS, 1998; Ahmed, Alam and et al, 1999). As an affected country, Bangladesh can adapt some measures to reduce the adverse impact of climate change. Proper planning and land use management strategies in urban areas is one of the most important measures that can be exercised in response to climate change impacts. It need to be kept in mind that climate change will increase rural urban migration which would add to the existing challenges of the big cities of Bangladesh from socio-economic and environmental context. According to BBS (2016), as on 31st December, 2015, there are 11 City Corporations and 321 *Pourashavas*. Satterthwaite (2008) claimed, local governments have critical roles in adaptation because the scale of the risk from extreme weather events is much influenced by

- Urban planning and land-use management
- Quality of housing and infrastructure in that city
- Safe urban construction and expansion
- The level of preparedness among the city's population and
- Preparedness of key emergency services

Policies and acts related to climate change need to be adopted in spatial and development policies and plans at national and local level. At present, though a number of urban and climate change related policies and acts exist but implementation and monitoring is not visible. Again inter linkage between policies and acts of climate change and urban planning is not connected. To ensure mainstreaming of climate change in urban development it is

necessary to develop linkages between the policies and acts. Also the organizations including development partners, NGOs (both national and international), civil society involved with this policies need to work in a coordinated manner to ensure implementation of the policies at national, regional and local levels. In this background, this assignment has been undertaken.

An inception report has already been prepared and submitted to UN Habitat as first deliverable of the project. The inception report presented the background of the project, major task to be taken by the research team, methodology of the research and key tasks performed after signing of the project. It also provided the expected project timeline and the key outputs aimed to be reached. The inception report also includes the proceedings of the launching program and the first stakeholder workshop which was held on 17th November 2016.

1.3 Objectives of the Review Report

The review report is prepared to attain objective 1.4. : In-depth assessment of national urban related policy conducted, which identifies gaps, where climate change can be incorporated into urban legislation, and ways to address this.

Chapter Two: Methodology

A methodology is formulated to fulfill the objective of this report. The methodology includes step by step procedures conducted by the research team in order to finalize the list of documents and review of documents linking them with key urban issues affected by climate change.

2.1 Finalizing the list of review documents involved with urban planning and climate change

A stakeholder workshop was carried out in 17th November, 2016 by the research team incorporating personnel from key government departments, municipal authorities and UDD for the purpose of updating and finalizing the list of policy documents to be reviewed. During the workshop, participants were introduced with the list of documents prepared by the research team. The stakeholders gave their opinion on the list of documents. According to their opinion, the list was updated and finalized (Appendix A).



Photo 1: Participants in the Workshop Session on 17th November, 2016



Photo 2: Dr. Sarwar Jahan giving the inauguration speech in the workshop

2.2 Review of documents

2.2.1 Conceptualization of the review process

In stakeholder workshop 42 documents (Policies, Plan, Acts and Rules of the Government) were identified for review to mainstream climate change in urban planning process. After closer inspection of these documents, the research team found that some of the documents are in preparation stage or are not applicable in urban setting. Most of these documents which fall in these categories were not reviewed. The researchers also found some documents which

were relevant for mainstream climate change in urban planning but incidentally were not included in the list prepared in the stakeholder workshop. The research team finally included these documents for review. The research team thoroughly reviewed three strategic papers, 12 policy documents, two planning documents, 12 acts and six rules. The documents were reviewed in accordance with climate change issues and strategies stated in BCCSAP 2009, NAPA 2009 and INDC 2015. The strategies to address climate change impacts in urban areas are identified. Then a relationship matrix was developed to see if those strategies/ issues are incorporated in the in the urban planning documents. The next step was to identify the gaps in documents regarding mainstreaming climate change strategies in urban planning.

2.2.2 Identification of issues related to Climate Change and urban area

The Climate Change Strategy and Action Plan 2009 is built on six pillars:

1. Food Security, Social protection and Health
2. Comprehensive Disaster Management
3. Infrastructure
4. Research and Knowledge Management
5. Mitigation and Low Carbon Development
6. Capacity Building and Institutional Strengthening.

The action plan identified 44 action programs under these six pillars (Appendix B). The research team analyzed those programs and identified the areas those have urban dimensions. The research team also analyzed key urban issues from the 38 identified adaptation measures of National Adaptation Program of Action 2009 (Appendix C). There were also 10 issues which government vows to address in Intended Nationally Determined Commitment document of Bangladesh (Appendix D). The research team identified that there are 38 issues (Appendix D: Table 1, Table 2 and Table 3) that have implications on urban development in the three government documents on climate change.

2.2.3 Preparation of a relationship matrix and analysis of gap

A relationship matrix was prepared to get a comprehensive understanding regarding climate change adaptation and mitigation strategies of government of Bangladesh and its adoption in urban planning documents.

The existing gap is analyzed according to the relationship matrix. The research team sought the answer of the following question to identify gap:

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- Do the national policies, plans, acts and rules address climate change issues in urban planning and development?

Each document is analyzed thoroughly in order to find specific sections, articles and chapters to address issues related to climate change. In a cross-table format, the climate change strategies are checked with urban planning documents. The matrix showed the gap in the existing policies regarding mainstreaming climate change strategies in urban planning.

Chapter 3: Review of Climate Change and Urban Related Documents

3.1 Introduction

By the Fifteenth Amendment of the Constitution of Bangladesh, protection of natural resources, bio-diversity, wetlands, forests and wild life for the present and future citizens became a constitutional duty of government of Bangladesh (Ministry of Law and Parliamentary Affairs, 2015). The inclusion of environmental concerns in the constitution is a massive step forward in tackling climate change for Bangladesh. The government of Bangladesh's vision is to eradicate poverty by 2021, by focusing on pro poor climate change strategy (Planning Commission, 2012). The strategy prioritizes adaptation and disaster risk reduction. In this regard, the government of Bangladesh has shifted its focus from response and relief oriented measures to adaptation oriented measures to tackle climate change (Ministry of Food and Disaster Management, 2015). Climate Change Strategy and Action Plan 2009, National Action Plan for Adaptation 2009 and Intended Nationally Determine Commitment 2015 include a list of programs to address climate change impacts with a long term vision (Ministry of Environment and Forest, 2009a, 2009b and 2015). To support that vision, there is a need to mainstream climate change into urban policies and documents which will ensure a paradigm shift in urban thinking.

3.2 List of Documents for Review

A list of documents were finalized that needed to be reviewed for mainstreaming climate change in urban planning (Appendix A) through a stakeholder meeting that was held on 17th November 2016. The list includes documents related to Climate Change and Disaster Management, Environment, Urban Planning and Sectoral policies. This chapter gives a brief summary of all those documents under review.

The research team has classified the documents into following categories:

1. Climate Change related documents
2. National Level Development Policies and Plans
3. Documents related with urban planning
4. Cross sectoral documents

The research team meticulously reviewed all the selected documents. The review was conducted with a view to apprehend whether the climate change adaptation and mitigation strategies are translated into the relevant national, sectoral and local level policies, plan, acts and rules. Some of the documents identified in the stakeholders meetings are still in preparation or in draft stage. With the exception of National Disaster Management Policy, Urban Sector Policy and Energy Policy, none of the draft policies were included in the review process. Local level development plans (such as Development Plan for Dhaka, Chittagong, Barisal, Mymensingh etc.) were also excluded from the review process. It is important to mention that the research team has a plan to review the local level development plans, acts and rules of the selected study areas (Mymensingh *Pourashava* and Barisal City Corporation) in the next phase of this project. Table 3.1 provides the list of documents that has been reviewed.

Table 3.1: List of Documents to be Reviewed and Analyzed

Categories of Documents	Climate Change and Disaster Management related	Urban Planning related	Cross Sectoral Documents
Strategic Papers	1. Perspective Plan for Bangladesh 2010-2021 2. National Sustainable Development Strategy 2010-2021 3. 7 th Five Year Plan (2016-2020)		
Policies	1. National Disaster Management Policy, 2015	1. Draft National Urban Sector Policy 2. National Integrated Multimodal Transport Policy 2013	1. National Housing Policy, 2015 2. National Environmental Policy 2013 3. National Agricultural Policy, 2010 4. Bangladesh Industrial Policy, 2010 5. Coastal Zoning Policy, 2005 6. Renewable Energy Policy of Bangladesh, 2009 7. National Land Transport Policy 2004 8. National Land Use Policy 2001 9. National Water Policy, 1999
Plans	1. Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009 2. National Adaptation Programme of Action (NAPA) 2009 3. National Plan for Disaster Management, 2010-2015 4. Intended Nationally Determined Contributions (INDC) 2015		1. National Water Management Plan., 2004
Acts	1. Disaster Management Act,	1. Urban and Regional Planning	1. Bangladesh Water Act, 2013

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Categories of Documents	Climate Change and Disaster Management related	Urban Planning related	Cross Sectoral Documents
	2012 2. Climate Change Trust Act, 2010	Act (Draft) 2. Real Estate Development and Management Act 2010 3. Local Govt. Act (Pourashava Act), 2009 4. Park, Playground, Open Space and Natural Waterbody Conservation Act, 2000 5. Town Improvement Act, 1953 6. The Building Construction Act, 1952	2. Brick Making and Brick Field Establishment (Control) Act, 2013 3. Forest Act, 1927 (updated 2000) 4. The Environment Conservation Act, 1995
Rules	1. Standing Orders on Disaster, 2010	1. Bangladesh National Building Code, 2015 2. ঢাকা মহানগর ইমারত (নির্মাণ, উন্নয়ন, সংরক্ষণ ও অপসারণ) বিধিমালা, ২০০৮ (Dhaka Metropolitan Building (Construction, Development, Conservation and Removal) Rules 2008) 3. বেসরকারি আবাসিক প্রকল্পের ভূমি উন্নয়ন নীতিমালা, ২০১৫ (Private Residential Land Development Rules, 2015)	1. Guidelines for Environmental Assessment of Water Management (Flood Control, Irrigation and Drainage) Projects, 2005 2. The Environment Conservation Rules, 1997

3.3 Summary of the Reviewed Documents

With clear indication from the United Nations Framework Convention on Climate Change (UNFCCC) to strengthen climate change efforts globally, the government of Bangladesh is looking forward to integrate climate change related issues into the following documents.

3.3.1 Review of Strategic Papers Related to Climate Change and Urban Planning

Among the 35 documents that has undergone the review process; the Perspective Plan for Bangladesh (2010 - 21), National Sustainable Development Strategy (2010-21) and 7th Five Year Plan 2016-2020 are considered as long term strategic documents of the government to be reviewed. Though in the stakeholder workshop, the participants identified 6th Five Year Plan as an important strategic document but it was not considered for review as it is no longer valid. Similarly it was not possible to review Delta Plan 2100, as the plan is still in the process of preparation, only the background papers are available.

The publishing authority of these strategic papers, their encompassing issues, their jurisdiction area and their applicability to different sectors and institutions are listed below (Table 3.2):

Table 3.2: Features of Reviewed Strategic Documents

List of CC related Documents	Prepared By	Encompassing Issues	Jurisdiction Area	Applicable Upon
1. The Perspective Plan for Bangladesh 2010 - 21	Planning Commission under Ministry of Planning	The road map for accelerated growth and lays down broad approaches for eradication of poverty, inequality, and human deprivation.	National	All sectoral policies and plans
2. National Sustainable Development Strategy 2010-21	Planning Commission under Ministry of Planning	Strategies to meet the challenges of economic, social and environmental sustainability faced by the economy as well as meeting international obligation of our country to global sustainable development principles and agenda.	National	All sectoral policies and plans
3. 7 th Five Year Plan 2016-2020	Planning Commission under Ministry of Planning	Strategies for intervention in all the sectors of economy for harnessing growth and development	National	All sectoral policies and plans

Perspective Plan for Bangladesh 2010-2021

The Perspective Plan 2010-2021 provided the guidelines towards eradication of poverty, inequality, and human deprivation in order to continue the accelerated growth pace of the country. It was expected that Sixth Five Year Plan (2011-2015) and the Seventh Five Year Plan (2016-2020) would accommodate the specific strategies and the task of implementation. The document identified nine development priority areas under four linked economic models for achieving the goal of becoming a middle income country by 2021.

'Mitigate the impacts of climate change' has been identified as one of the priority areas for development. The Perspective Plan envisioned to take effective measures to protect Bangladesh from the adverse effects of climate change and global warming. In this regard, one of the adopted strategies is to develop effective operational procedures in different ministries and agencies to implement environment, climate change and disaster agenda of the

country and in possible cases, bring synergies amongst these agendas to ensure poor people are ultimately benefitted.

The plan rightly recognizes the rapid unplanned urbanization as a major challenge for the country and focuses on the importance of meeting the challenges of such development trend. But the impacts of climate change in urban areas are not discussed in the chapter on urbanization.

National Sustainable Development Strategy 2010-2021

The National Sustainable Development Strategy (NSDS) 2010-2021 has been prepared to meet the environmental challenges that Bangladesh faces in the way to development. This strategy document is based on the long term development vision of the Government which includes the 6th Five Year Plan (2011-2015), the Perspective Plan of Bangladesh (2010-2021) and other sectoral plans, policies and strategies of the Government. It considered both climate change and rapid urbanization as a serious challenge for sustainable development in Bangladesh. Hence strategies were formulated where urban environment is considered as priority sector and climate change as a cross sectoral issue for intervention. Though the document did not devise strategy for combating climate change in urban issues, it did look into climate change from the perspective of urban risk, coastal zone management and disaster management. Apart from the national exigency, it also emphasizes Bangladesh's commitment to the international community to formulate and implement a sustainable development strategy addressing environmental issues.

7th Five Year Plan 2016 - 2020

At present the development of Bangladesh is guided by the 7th Five Year Plan (2016-2020). The core targets of the plan are set in accordance with the vision and goals of the Perspective Plan 2010-2021, sectoral plans and policies. The Plan introduces environment and climate change issues with implementing measures related to pollution, disaster mitigation, planning, natural resource management and governance (Sector 8). It identified the challenges of climate changes adaptation and mitigation in Bangladesh in detail and devised strategies to address those issues. The Plan also describes lingering challenges in urban sector (Sector 11) in Bangladesh with devised strategies to address those challenges. Weakness in the urban policy environment and institutional capacities, inadequate infrastructure, absence of clearly articulated urban sector policies and strategies, lack of comprehensive development plan and

their implementation and monitoring are the important challenges for planned urbanization. The greatest challenge of rapid urbanization on a massive scale is in the form of degradation of the urban environment. The frequency of occurrence of different hazards and also the severity are likely to increase with the threat of climate change. In order to guide the overall development of urban sector, the plan suggested strategies focusing issues: urban governance, urban housing, urban transportation and urban poverty reduction.

3.3.2 Review of Climate Change and Disaster Management related documents

Recognizing Bangladesh as one of the most vulnerable country to climate change government has developed National Adaptation Plan for Action in 2005 (popularly known as NAPA 2005) to address climate change. After publication of IPCC report in 2007, NAPA was updated in 2009. Concurrently, government also formulated Bangladesh Climate Change Strategy and Action Plan in 2009 (BCCSAP 2009). In addition, to meet the commitment of Hyogo Framework (2005 -2015), government prepared National Disaster Management Plan and Policy to reduce and manage disaster risks in the country. These documents (National Disaster Management Plan and National Disaster Management Policy) also address the eminent threats of climate change. Table 3.3 presents the salient features of these climate change and disaster related documents.

Table 3.3: Features of reviewed Climate Change and Disaster Management related documents

List of CC and DM related Documents	Prepared By	Encompassing Issues	Level of Jurisdiction	To be adopted by
Policies				
1. National Disaster Management Policy 2015	Ministry of Food and Disaster Management	Disaster Risk Reduction (DRR) and emergency response mechanism, Climate Change Adaptation, capacity building to reduce risks	National	Disaster Management Acts, Plans and Standing order on Disaster (SOD)
Plans				
2. Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009	Ministry of Environment and Forest	Programmes for Climate Change Adaptation, DRR and Environment	National	All sectoral policies and plans
3. National Adaptation Programme of Action (NAPA) 2009	Ministry of Environment and Forest	Action Plan to adapt/mitigate the effect of climate change in different sectors of economy as well as cross-	National	All sectoral policies and plans

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List of CC and DM related Documents	Prepared By	Encompassing Issues	Level of Jurisdiction	To be adopted by
		sectoral issues		
4. National Plan for Disaster Management, 2010-2015	Disaster Management Bureau, Under ministry of Food and Disaster Management	Plan for risk reduction, capacity building and emergency response in different stages of disaster.	National	Hazard Specific Plans, Local Level Plans, Sectoral Plans, SOD
5. Intended Nationally Determined Contributions (INDC) 2015	Ministry of Environment and Forests	Intended action to reduce future emissions to meet the global commitment	National	All sectoral policies and plans
Acts				
6. Disaster Management Act 2012	Bangladesh National Parliament	Regulation on Disaster Management, Organizational Structure, duties and responsibilities of Disaster Management Committees , r different Ministry, division and organization in different phases of disaster	National	All relevant ministry, divisions and organizations, National and Local Level Disaster Management Committees
7. Climate Change Trust Act 2010	Ministry of Environment and Forest	Rules on functions of Climate Change Trust and Technical Committee	National	Climate Change Trust and Technical Committees
Rules/ Guideline				
8. Standing Order on Disaster 2010	Disaster Management Bureau, Disaster Management and Relief Division	Guidelines for all relevant ministries, divisions, and organizations for Disaster Risk Reduction and Emergency Response.	National and local level	All relevant ministries, divisions, and organizations as prescribed in SOD

National Disaster Management Policy 2015

The National Disaster Management Policy, 2015 is formulated according to section 19 of Disaster Management Act 2012. The policy acknowledges that Bangladesh is a vulnerable country to disaster. Climate Change has added a new dimension to this increasing vulnerability. The goal of the policy is to reduce the risk of natural, environmental and man-made disaster to a minimal level and build up an effective emergency response measure in case of catastrophic events. It states that disaster risk reduction are necessary to prevent the long term economic and social effects of catastrophic events Community base risk reduction and adaptation against climate change are considered as major principles for disaster risk reduction. Both community and urban risk assessment was given consideration in the plan. It

acknowledges that climate change adds a new dimension to community risks and vulnerabilities. This policy suggests to integrate disaster risk reduction approaches and climate change adaptation in all ongoing and future development plans, programmes and policies.

Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009

In response to the impending threats of disaster from climate change, the government developed the Bangladesh Climate Change Strategy and Action Plan 2008. The plan was revised in 2009. The plan aimed at pro-poor climate change strategy for achieving government's vision of eradicating poverty and achieving economic and social well-being of the people. In this regard, 44 programs (Appendix B) were prepared under the following six pillars:

1. Food Security, Social Protection and Health
2. Comprehensive Disaster Management
3. Infrastructures
4. Research and Knowledge Management
5. Mitigation and Low Carbon Development
6. Capacity building and Institutional Strengthening

National Adaptation Programme of Action (NAPA) 2009

This updated version of the National Adaptation Programme of Action (NAPA) for Bangladesh has incorporated findings of studies on impacts, vulnerabilities and adaptation need assessment carried out over the last few years. It has kept the format of the National Adaptation Programme of Action (NAPA)-2005 that was prepared by the Ministry of Environment and Forests (MoEF), Government of the People's Republic of Bangladesh as response to the decision of the United Nations Framework Convention on Climate Change (UNFCCC) (Table 3.3). The plan provided an overview of the policy, planning, institutions and governance regime to deal with environmental and climate change issues. It also highlighted the adverse effects of climate change, variability and extreme events on biophysical, social and economic sectors. The plan developed 16 projects (eight short term, eight medium term) for implementation by different ministries and departments.

National Plan for Disaster Management 2010-2015

The plan was drafted in 2008 and adopted by the government in 2010. The plan emphasizes on pre-disaster mitigation and preparedness of the people, against the prevalent practice of post disaster rescue, reconstruction and rehabilitation. This is an umbrella plan that provides the overall guideline for the relevant sectors and the Disaster Management Committees at all levels to prepare and implement their plans to address disaster risk reduction. It states

“Disaster risk reduction with climate change adaptation offers a win-win opportunity”

The plan articulated seven strategic goals to reduce disaster risk. A two tier disaster management model (Figure 3.1) was developed to guide disaster risk reduction and emergency response management efforts in Bangladesh. *Advocacy, Policy and Planning Reform, Capacity Building, Planning Frameworks and Uniform Community Risk Assessment Guidelines* were suggested as strategies for mainstreaming risk reduction. The plan also advocated for preparing local level disaster management plan as well as hazard specific plan. An implementation plan and probable source for implementing the plan was also included in this document. The Disaster Management and Relief Division (DM&RD) under the Ministry of Food and Disaster Management being the focal organization for disaster risk reduction and emergency management will take the lead role in disaster risk reduction and emergency management planning.

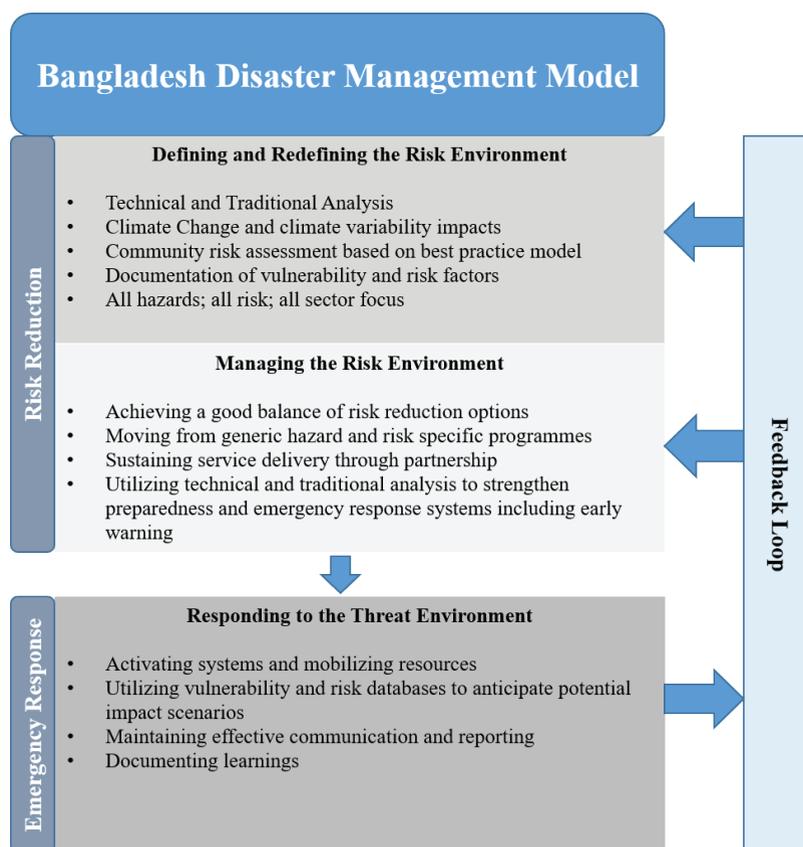


Figure 3.1: Disaster Management Model of Bangladesh

Source: Ministry of Food and Disaster Management, 2010

Intended Nationally Determined Contributions (INDC) 2015

Though Bangladesh is one of the most vulnerable countries affected by climate change and not a great contributor to greenhouse gas, it recognizes that it has some responsibilities to combat climate change. Bangladesh Government voluntarily agreed to combat climate change impacts through its commitment made in the Intended Nationally Determined Contributions (INDC) 2015. Bangladesh focused on increasing its resilience through mitigation and adaptation in INDC. Bangladesh committed to take a number of actions without condition which expects to reduce 5% GHG emission from Business as Usual (BAU) by 2030 and some other actions with condition which expects to reduce 15% GHG emission from Business as Usual (BAU) by 2030. In addition, it provided a long term vision for adaptation and synergies with adaptation measures.

Disaster Management Act 2012

Disaster Management Act 2012 was enacted as a legislative tool under which disaster risk and emergency management will be undertaken in Bangladesh. It imposed mandatory obligations and responsibilities on Ministries and committees. The Act was enacted

"To make the activities about disaster management coordinated, object oriented and strengthened and to formulate rules to build up infrastructure of effective disaster management to fight all types of disaster".

This Act proposed to establish Disaster Management Council headed by the honorable Prime Minister, a number of groups and committee at national and local levels. Role and responsibilities of these entities are defined in the Act. It also proposed to establish Research and Training Institutes for Disaster Management.

Climate Change Trust Act, 2010

The act establishes Climate Change Trust as the authority to formulate and implement all type of climate change related projects. Climate Change Trust fund aimed to facilitate in preparing action plans for capacity building of people in climate change affected areas and to take measures for adaptation, mitigation, technology development and transfer to combat adverse effects of climate change on man, biodiversity and the nature.

Standing Order on Disaster 2010

The Standing Orders on Disaster in the current format was first published in 1997 in *Bangla*. Considering the contemporary disaster events and related issues, Standing Orders on Disaster (SOD) 1999 was reviewed and revised and Standing Order on Disaster 2010 was formulated. It presents the disaster management arrangements in Bangladesh in detail and explains the specific roles and responsibilities of Committees, Ministries, Departments at national and local levels and other organizations involved in disaster risk reduction and emergency response management. It also describes the necessary actions required in implementing Bangladesh's Disaster Management Model, e.g., defining the risk environment, managing the risk environment, and responding to the threat environment. According to the Standing Orders 2010, the *National Disaster Management Council (NDMC)* and *Inter-Ministerial Disaster Management Coordination Committee (IMDMCC)* will ensure coordination of disaster related activities at the National level. Coordination at District, Thana and Union

levels will be done by the respective District, Thana and Union Disaster Management Committees.

3.3.3 Review of Urban Planning related documents

As mentioned earlier, along with climate change, rapid unplanned urbanization is one of the major challenges Bangladesh is facing for sustainable development (Planning Commission 2013). To meet the challenges government has prepared a number of acts, related rules and spatial development plans. Though the stakeholder workshop did not include the National Integrated Multimodal Transport Policy, 2013 in the review list but considering its association with urban planning and climate impacts, the research team reviewed it. It should be mentioned here that National Urban Sector Policy and Urban and Regional Planning Act are still in draft stage. Considering their importance, the above mentioned documents are also reviewed. On the contrary, as spatial development plans are location specific, those were not considered for review. However, due to importance of Dhaka as the capital, the acts and rules applicable for the area under the jurisdiction of RAJUK (the planning and development regulatory body for Dhaka) are included in the review list. As mentioned earlier development plans of the selected study area (i.e. Mymensingh Strategic Development Plan and Barisal Structure Plan) would be reviewed in the later stages of the project.

The Table 3.4 shows the Urban Planning related Policy, Acts, Rules and Guidelines that were reviewed delineating their purpose, encompassing issues and applicability in terms of plan making process.

Table 3.4: Features of reviewed Urban Planning related documents

List of Urban Planning related Documents	Prepared By	Encompassing Issues	Level of Jurisdiction	Applicable Upon
Policies				
1. National Urban Sector Policy (Draft)	Ministry of Local Government, Rural Development and Cooperatives	All the issue related with urban sector including urban planning, urban environment and urban local economic development	National	Urban Local Government, Institute Development authorities, LGED and National Institute of Local Government.
2. The National Integrated Multimodal Transport Policy, 2013	Roads Division, Ministry of Communication	Issues related with transportation including urban transport	National	Sectoral ministry and organizations, Urban Local Government Institutes,
Acts				
3. Urban and Regional Planning Act 2014	Urban Development Directorate,	Sanction, management and supervision of different plan making process.	National	All the relevant government and private organizations, whose

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List of Urban Planning related Documents	Prepared By	Encompassing Issues	Level of Jurisdiction	Applicable Upon
	Ministry of Housing and Public Works			activities are directly related to urban planning and land use management
4. Real Estate Development and Management Act 2010	Prepared by Ministry of Housing and Public Works approved by National Parliament	Regulations for Real Estate Developer which includes registration, responsibilities, real estate property exchange, buying, selling etc.	National	All Real Estate Developers
5. Local Govt. Act (Pourashava Act), 2009	Prepared by Ministry of Local Government, Rural Development and Cooperatives approved by National Parliament	Establishment of municipality, geographical boundary, qualification and disqualification of Mayors and Councilors, election, declaration of property, Tax, annual report, fines and punishment, responsibility and functions of municipality etc.	Local	All Pourashavas of Bangladesh
6. Local Government (City Corporation) Act, 2009	Prepared by, Ministry of Local Government, Rural Development and Cooperatives approved by National Parliament	Establishment of municipality, geographical boundary, qualification and disqualification of Mayors and Councilors, election, declaration of property, Tax, annual report, fines and punishment, responsibility and functions of municipality etc.	Local	All City Corporations of Bangladesh
7. Town Improvement Act, 1953	Adopted by Bangladesh National Parliament	Development, improvement and expansion of the areas to their vicinity and the constitution of a <i>Kartripakkha</i> (Authority i.e. RAJUK)	Local	Area under jurisdiction of RAJUK
8. The Building Construction Act, 1952	Adopted by Bangladesh National Parliament	An act to provide for the prevention of haphazard construction of building and excavation of tanks which are likely to interfere with the planning of certain areas of Bangladesh	National	All the relevant organizations both public and private including individual involved in construction of buildings
Rules				
9. Bangladesh National Building Code, 2015	Housing and Building Research Institute	Minimum standards for design, construction, quality of materials, use and occupancy, location and maintenance of all buildings	National	All the relevant organizations both public and private including individual involved in construction of buildings
10. ঢাকা মহানগর ইমারত (নির্মাণ, উন্নয়ন, সংরক্ষণ ও অপসারণ) বিধিমালা ২০০৮ (Dhaka Metropolitan Building (Construction, Development, Conservation and Removal) Rules 2008)	Ministry of Housing and Public Works	Rules for approval of Land Use Clearance Certificate, Special Project Permit for large and specialized projects, Building Permit and Occupancy Certificate	Dhaka	Areas under approved master plan of RAJUK
11. বেসরকারি আবাসিক	Ministry of Housing and	Rules concerning design and approval of layout plan for	Dhaka	For all kinds of private housing land

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List of Urban Planning related Documents	Prepared By	Encompassing Issues	Level of Jurisdiction	Applicable Upon
প্রকল্পের ভূমি উন্নয়ন নীতিমালা, ২০১৫ (Private Residential Land Development Rules, 2015)	Public Works	residential land development by private sector including registration of real estate developer, professionals		development

Draft National Urban Sector Policy

The National Urban Sector Policy was drafted by UDD in 2014. According to the policy, the goal is to strengthen local municipalities in order to create habitable and planned cities by means of decentralizing and enhancing positive measures and controlling for the negative aspects for a sustainable future. The policy addresses rural urban migration, capacity building, involving local stakeholders in urban development and setting up proper urban planning department in every municipality. It also focuses on creating compact, high density communities by mixing land uses, creating inclusive neighborhood, increasing transportation choice and incorporating green infrastructure. The policy also addresses impending threat from disaster and hazards and calls for proper disaster management program.

The policy points out some of the key urban issues like transportation, health, gender concerns, rural urban linkage, urban land management, environmental management and urban governance which have direct link with climate change.

The National Integrated Multimodal Transport Policy, 2013

The National Integrated Multimodal Transport Policy of 2013 is prepared by Roads Division of Ministry of Communication. The policy was undertaken to meet the need to address all modes of transport in an integrated way from present overemphasis on road subsector over other competing modes. The policy did not cover the issues of 'climate change' but suggested policies, strategies which have implication on issues of climate change. The policy suggested four policy strategies of which two are directly related with environment and land use planning. However, out of twelve objectives only two are related to environment and land use planning. It provides policy guideline for each of the sub sectors of transport sector. The policy addresses climate change as one of the key environmental issues. In the current context of global warming due to CO₂ emission, the policy introduces environmentally sustainable multimodal transport system. The policy prioritizes integrated land use planning to support more sustainable travel choices and reduce travel demand. This document

suggested for mandatory environmental, social and resettlement impact analyses of transport projects. In case of pedestrian mobility and non-motorized transport, the document suggests a 'Pedestrian First' program. The policy encourages Transport Impact Assessment (TIA) for any kind of land development project.

Draft Urban and Regional Planning Act

The act was formulated in 2014 as legal instrument for plan preparation, review and approval process. This plan was drafted to ensure planned land use and optimum utilization of resources towards socio-economic, cultural and political well-being of the citizen of Bangladesh considering its geographical context. The act mandated government to establish an Urban & Regional Planning Advisory Council. The council shall act upon sanction of different guidelines and proposals related to Urban and Regional Planning and Land Use Management. In March 20th 2017, the Cabinet approved the Draft Urban and Regional Planning Act 2017 to place in the National Parliament.

The Building Construction Act, 1952

This Act is also enacted to regulate haphazard development. The act put restriction on construction of building and excavation of tank, improper use of lands and buildings, cuttings of hills and provided direction on removal of any building is being constructed, or re-constructed, or any addition or alteration to any building is being made or any tank is being excavated or re-excavated.

Town Improvement Act, 1953

This is the first town planning act of the country. It was enacted with the purpose of regulating development in the area under the jurisdiction of erstwhile DIT (Dhaka Improvement Trust, Present RAJUK). The act made RAJUK as the sole authority to prepare master plan and carry out development, improvement and expansion of area under its jurisdiction.

Parks, Playgrounds, Open Space and Natural Waterbody Conservation Act, 2000

The Act was enacted for protection of playground, open space, parks and gardens and water bodies of urban areas of Bangladesh. The act states that the areas marked as playground, open space, parks and gardens and water bodies in the master plan of the urban area cannot be

reclassified. If reclassification is required, the owner of the property has to apply and explain to the authority.

Local Government Acts of 2009

There are three local government acts, two of which covered urban areas (Table 3.4). The Acts described the functions and responsibilities of local municipalities (depending upon the size either *Pourashava* or City Corporation) of Bangladesh. The Act indicates that local municipality is authorized for preparing land-use plan under the area of jurisdiction unless the area falls into purview of development authority. It is the responsibility of municipality to protect open spaces and water bodies within its jurisdictions. Municipalities were assigned to provide adequate support for ensuring public safety during the time of disaster and look for adequate measures to prevent epidemics under these acts.

Real Estate Development and Management Act, 2010

Real Estate Development and Management Act, 2010 deals with registration of Real Estate Developer, responsibilities of developers, real estate property exchange, buying and selling, and punishment for the defiance of the law. It is mandatory for the real estate developer to follow all government acts and rules regarding planning, developing and constructing real estate.

Bangladesh National Building Code, 2015

The Bangladesh National Building Code was formulated in 1993 and got legal coverage in 2006. The code was updated in 2015 and currently in the process of final approval. The code establishes the minimum standards for design, construction, quality of materials, use and occupancy, location and maintenance of all buildings within Bangladesh in order to safeguard and ensure public welfare and minimize human and asset loss. Apart from this, the document also includes issues related to energy efficiency and sustainable development. The concepts of Green Building, Sustainable Site Design, Rain Water Harvesting, Reuse of Grey Water are introduced in this revised version.

Building Construction Rule, 2008

This Rule was developed under the provision of The Building Construction Act, 1952. It was prepared by Ministry of Housing and Public Works and applicable within RAJUK area (Table 3.4). The rule stated the conditions for granting Land Use Clearance Certificate,

Special Project Permit for large and specialized projects (where applicable), Building Permit and Occupancy Certificate by RAJUK.

Private Residential Land Development Rules, 2015

Private Residential Land Development Rule 2004 was amended in 7th July 2015 in order to manage privately developed residential areas in RAJUK area. This rule states the conditions applied for approval of private residential land development project. It provides standards for infrastructure, amenities and facilities during preparation of lay out plan. It also defines regulations related to conservation of open space and water bodies. It also includes sections on ownership, acquisition of land, rehabilitation of displaced population, plan approval process etc. The amended rule mandated the inclusion of Waste Water/Sewerage Treatment Plant and Compost Plant within the project area. The rule also mandates specific space standards for community facilities and restricts the change of land use of those facilities. The rule also states that it is punishable by law if the layout plan of the project is designed in such a way that it encroach the waterbody, *Khal, Beel*, river or other drainage basin of the project area.

3.3.4 Review of Cross Sectoral Documents related to Climate Change, Urban Planning and Environment

As mentioned earlier, combating climate change became a constitutional obligation of the government. So the researchers also reviewed a number of sectoral policies, those are linked with climate change impacts and development of urban areas. This includes sectors like agriculture, industry, water, environment, coastal management, housing, etc. The research team selected only those sectoral policies, plans, acts and rules which are relevant for development and planning for urban areas.

Table 3.5: Features of Reviewed Sectoral Policies and Document

List of Sectoral Policies and Documents	Prepared By	Encompassing Issues	Jurisdiction Area	Applicable Upon
Policies				
1. National Housing Policy, 2015	Ministry of Housing and Public Works	All issues encompassing housing sector.	National	All agencies under ministry of Housing and Public Works, Professionals

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List of Sectoral Policies and Documents	Prepared By	Encompassing Issues	Jurisdiction Area	Applicable Upon
2. National Environmental Policy 2013	Ministry of Environment and Forest	All issues in environment including but not limited to sustainable urbanization, housing, green house, 3R (Reduce, reuse, recycle) of solid waste management reviving of rivers and <i>khals</i> , and control of Green House Gas emission in urban areas.	National	All government agencies.
3. Bangladesh Agricultural Policy, 2013	Ministry of Agriculture	All issues relevant to agricultural sector including research and Development, agricultural extension, addressing vulnerabilities, environment and resource conservation,	National	Sectoral Ministry and Organizations
4. Bangladesh Industrial Policy, 2010	Ministry of Industry	Issues related with Industrial Sector including green industrial development and institutional mechanism to facilitate industrial activities.	National	All kinds of industries and related sectors
5. Coastal Zoning Policy, 2005	Ministry of Water Resources	Economic development of coastal zone considering climate change and nation strategic plan and program	National	Related sectoral Ministry and organization
6. National Land Transport Policy	Ministry of Communication	Integrated Transport Planning and Policy, Governance in Transport Sector, Transport and Economic Development, Employment in the transport sector, Inland Water Transport, Transport Planning for Dhaka city	National	Related sectoral policies and documents
7. Renewable Energy Policy of Bangladesh, 2009	Ministry of Energy and Mineral Resources	Modality for implementation of renewable energy projects, tariff for sale of power, fiscal incentives, other facilities and incentives for foreign investors etc.	National	Related sectoral Ministry and organization
8. National Land Use Policy 2001	Ministry of Land	Preparation of zoning map, different sector related to land use etc.	National	Ministry of Land and line organization associated with land ministry
9. National Water Policy, 1999	Ministry of Water Resources	River Basin Management, Planning and Management of Water Resources, Preservation of <i>Haors</i> , <i>Baors</i> , and <i>Beels</i> , Economic and Financial Management, Research and Information Management, Stakeholder Participation.	National	Related sectoral policies and documents
Plans				
10. National Water Management Plan: Development Strategy, 2001	Water Resource Planning Organization, Ministry of Water Resources	Strategies for development of Water Management plan for the country	National	Different Sectoral Agencies and related Ministries

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List of Sectoral Policies and Documents	Prepared By	Encompassing Issues	Jurisdiction Area	Applicable Upon
11. National Water Management Plan: 2004	Water Resource Planning Organization, Ministry of Water Resources	Institutional Development, Creation of an Enabling Environment, Main River Development, Towns and Rural Areas, Major Cities, Disaster Management, Agriculture and Water Management, Natural Environment and Aquatic Resources.	National	Different Sectoral Agencies and related Ministries
Acts				
12. Bangladesh Water Act, 2013	Prepared by Ministry of Water Resources approved by National Parliament	Regulation for integrated development, management, abstraction, distribution, use, protection and conservation of Water Resources of the country.	National	Related sectoral authorities including ministry and individuals;
13. Brick Making and Brick Field Establishment (Control) Act 2013	Prepared by Ministry of Environment approved by National Parliament	Regulation for establishment of brickfield, use of materials for brick making including energy.	National	District Commissioner, Brickfield owners.
14. The Environment Conservation Act, 1995 (Updated in 2010)	Prepared by Ministry of Environment approved by National Parliament	Regulation for improvement and protection of environment, control of pollution and conservation of Natural Resource	National	All agencies under ministry of Environment, Professionals
15. Forest Act 1927 (Updated in 2000)	Adopted by National Parliament	Legal instrument for management forests, the transit of forest-produce and the duty levied on timber and other forest-produce	National	Related sectoral authorities including ministry and individuals;
Rules				
16. Guidelines for Environmental Assessment of Water Management (Flood Control, Irrigation and Drainage) Projects, 2005	Water Resource Planning Organization, Ministry of Water Resources	Rules for EIA for projects related to water resource and management, toxic waste management, conservation of water bodies.	National	Water resource and management related projects
17. The Environment Conservation Rules, 1997	Ministry of Environment and Forest	Rules for approval of environmental clearance certificate as well as acceptable level of pollution for different environmental parameters.	National	Department of Environment

National Water Policy 1999

The water policy of the government aims to bring order and discipline in the exploration, management and use of water resources in Bangladesh. The policy gave importance to comprehensive and integrated analysis of relevant hydrological, topographical, social, political, economic, environmental and institutional factors. It provides direction to all agencies working with the water sector and institutions that are associated with the water

sector for achievement of specified objectives but not limited to ensure the availability of water to all elements of the society as well as develop a legal and regulatory framework for water management.

National Land Use Policy 2001

The policy was prepared by Ministry of Land in 2001 addressing the increasing population pressure in limited amount of land in Bangladesh. The policy acknowledges that the increasing population and urbanization is the main reason behind shrinking of agricultural land. The policy acknowledges absence of law regarding use of land in rural areas and failure of implementation of laws in urban areas. The policy suggested for nationwide zoning law for control and management of land use. The policy calls for land pollution control and protection of agricultural land in urban fringe areas as well as existing water bodies.

National Land Transport Policy 2004

The national land transport policy was formulated in 2004 with a view of achieving fourteen objectives in land transport sector. One of the objectives of the policy was to maintain an economic and environmental balance through appropriate designs of roads and control of vehicles operation. The policy looks at introduction of integrated transport system with provisions of alternatives mode. It entrusted government to mandatory emission testing as part of the vehicle fitness test, introduce international practice in the use of CNG or ultra-low Sulphur diesel fuels etc. The policy also advocated for EIA and SIA for all road construction project. The policy also encouraged safer non-motorized transport including better environment for pedestrian

Coastal Zone Policy 2005

The Coastal Zone Policy is prepared by Ministry of Water Resources in 2005. 48 *Upazillas* of 19 districts are identified as coastal zone in this policy. The Government initiated coastal zone policy considering three aspects: a) the coastal zone is lagging behind in socio-economic developments on many aspects; b) poor initiatives to cope with different disasters and gradual deterioration of the environment; and c) the coastal zone has the potential to contribute much to the national development. The policy promotes integrated coastal zone management (ICZM). Reduction of vulnerability of the population due to hazard and conservation and enhancement of critical ecosystems due to climate are considered as important issues in the policy framework.

Renewable Energy Policy of Bangladesh 2009

De-carbonization of the energy sector through renewable energy deployment became key pillar for several countries' mitigation strategies against climate change (Wuester et al, 2015). The Renewable Energy Policy of Bangladesh 2009 was formulated to attain eleven objectives for development of renewable energy sector in Bangladesh. The policy identified the existing sources of renewable energy and provides the institutional arrangement for Resource, Technology and Program Development. It also provided the fiscal and regulatory strategy for development of renewable energy.

National Industrial Policy, 2010

Industry is one of the principal sources of climate change (IPCC, 2007) and closely linked with urbanization. The National Industrial Policy is prepared by Ministry of Industry in 2010. The policy aims at reducing unemployment and the proportion of the population affected by poverty and hunger to less than a half by 2017 through the adoption of short, medium and long-term programmes that help build a modern and vibrant industrial sector. The policy envisioned that private sector would lead the industrialization of Bangladesh while government would act as facilitator. The policy made government responsible for environmentally sound industrialization in Bangladesh. In this regard policy encourages not only pollution control but also reduction of greenhouse gas through Kyoto Protocol's Clean Development and climate friendly technology transfer.

National Environmental Policy, 2013

The Environmental Policy was first formulated in 1992 and updated in 2013. The policy recognizes the rapid unplanned urbanization of the country and associated problems of pollution and its impact on environment and society. Considering these, the policy promotes sustainable urbanization by addressing comprehensive urban planning which is environment friendly and growth oriented, supports infrastructure and housing development which conforms to climate change. Green design in housing, 3R (Reduce, Reuse, Recycle) principle for waste management, environmental friendly urban planning, zero discharge/ zero emission industries were addressed. The policy also highlighted the issue of disaster risk management in urban areas and necessary infrastructure development for disaster mitigation.

National Agricultural Policy 2013

The National Agricultural Policy 1999 is improved and modified to The National Agricultural Policy of 2013. One of the major goals of the policy is to develop and provide a sustainable and self-sufficient agricultural system by which farmers could adapt to the effect of climate change. The policy acknowledges that there is lack of technology available to farmers which are adaptable to the existing adverse environment. It emphasizes research and dissemination of research result to the practitioner. The policy also directs government to ensure effective Disaster Risk Reduction and Climate Change Adaptation measures in case of disasters in hilly regions, drought prone regions, Char areas, *Haor* and *Baor*, water clogged areas and coastal areas of Bangladesh.

National Housing Policy, 2016

The National Housing Policy aimed at ensuring accessibility to suitable housing to all strata of society. It intended to improve housing and settlements for sustainable development, equitable living standard, improvement of working environment and tried to provide access of all basic services and amenities considering health, security and affordable price to uphold equal right of all citizens. The Policy provides necessary directions for institutional capacity building, gender equity, protection of vulnerable socio economic group and improved housing design for disaster resilience. It also promotes building disaster resilient infrastructures and industries and proper drainage system.

National Water Management Plan: Development Strategy 2001

The National Water Management Plan Development Strategy 2001 (NWMP) was prepared to fulfill the requirement of National Water Policy. The plan suggested for a comprehensive implementation package involving both structural and non-structural measures to achieve the objectives of water policy. The plan identified the socio-economic, environmental and technical challenges as well as knowledge gap for successful implementation of the policy. This Development Strategy sets out a framework for action within which the National Water Management Plan was formulated in 2004. It highlighted the issues regarding institutional set up, disaster management, major river development and enabling environment for implementation of the plan.

National Water Management Plan 2004

The two volume plan was developed in 2004 by Water Resource Planning Organization. The plan was centered on three objectives. A baseline study was conducted which includes demand scenario and institutional framework for the plan. Considering the existing water sector development activities at the time, 84 different programs in eight different clusters and in eight spatial regions were planned for 25 years. There are cross cutting, national and regional level programs. In 2004, it was estimated that a little under one trillion dollar is needed for implementation of the plan.

The Forest Act 1927 (Amended 2000)

The Forest Act of 1927 which was legislated in 1927 and updated in 2000 covers legal issues relating to the forests, the transit of forest produce and the duty liable on timber and other forest produce. The law empowered government to declare any area a reserve forest. Thus the act could be an important tool to combat the impact of climate change thorough afforestation.

Environment Protection Act 2010

The Act was enacted in 1995 and updated in 2010 to conserve the environment and control pollution. The Act makes provisions for conservation of environment, improvement of environmental standard, Control and Mitigation of the pollution of the environment. It also provided the instruction environmental clearance for industrial and other projects. It empowered government to declare an area as “Ecologically Critical Area”. It also addresses safe handling of hazardous waste material; reduced pollution is ship breaking yard and prohibits land use change of designated water bodies and prevention of cutting and razing of Hills.

Brickfield and Brick Making (Control) Act 2013

World Bank in 2011 claimed that existing brick kilns are the number one cause for fine particulate pollution in Bangladesh and its total greenhouse gas (GHG) emission is estimated to be 15.67 million tons of carbon dioxide (CO₂) equivalent (tCO₂e) per annum as of 2011. The Brickfield and Brick Making (Control) Act 2013 was approved by the National Parliament to protect environment and bio-diversity. It regulates the use of fossil fuel for brick making as well as imposes conditions for establishment of brick field and brick kiln.

Bangladesh Water Act, 2013

The National Water Act 2013 was enacted in order to fulfill the recommendation of water management policy 1999 and water management plan 2004. The plan made provisions for integrated development, management, distribution, conservation and use of water resource. The act made the state as owner of all water of the country and make potable water and water for hygiene as highest priority. By the act, National Water Resource Council, headed by the honorable prime minister is formed. An executive committee was also formed under the provision of this law to implement the recommendation of the National Water Resource Council. It empowers government to declare water stress area and gave one group user preferential treatment in water stress area.

Environment Conservation Rule 1997

The Environmental Conservation Rule 1997 is created in line with the Environment Conservation Act 1995 in order to establish the criterion for “Ecologically Critical Area” and other specific standards for the purpose of conservation of environment. The Rule defines the process for different type of industries to get Environment Clearance Certificate.

Guideline for Environmental Assessment for Water Management 2005

The document provides guidelines for Initial Environmental Examination and Environmental Impact Assessment of Water Management Programmes and Projects. It covers only activities during early planning stages. The Guideline provides the safeguard the physical, biological and socioeconomic environments during project preparation and operation. It intended not to prevent development, ensure that it proceeds with due regard for the environment.

Chapter 4: Main-streaming Climate Change in Urban Planning Policies: Gaps in Existing Policies, and Plans

4.1 Introduction

As mentioned in Chapter Three, the team reviewed 35 government documents (i.e. Policy, Plan, Acts and Ordinance, bye-laws) to identify the issues on mainstreaming climate change in urban planning. To simplify the analysis the documents were classified into four groups

1. Strategic Plans and Policies at National Level
2. Disaster Management Documents at National Levels
3. Urban Planning Documents both at National and Local Level
4. Cross sectoral policy documents

After analyzing climate change documents of Government of Bangladesh (i.e. National Adaptation Plan of Action 2005, last updated in 2009; Climate Change Strategy Plan 2009 and Intended Nationally Determined Contributions 2015) the team identified that there are scope of integrating climate change in 38 areas of urban planning. The gaps were defined as absence of addressing those 38 issues in the documents where it was necessary.

4.2 Identified gaps in Strategic Documents

The Perspective Plan for Bangladesh (2010 - 2021), National Sustainable Development Strategy (2010-21) and 7th Five Year Plan (2016-2020) are considered as long term strategic documents of the government.

For achieving a prosperous Bangladesh grounded in political and economic freedoms, a reality in 2021, the Perspective Plan for Bangladesh 2010-2021 was formulated in 2011. One of the strategic visions of the plan was to protect environment and to meet the challenges of climate change. So climate change adaptation in Bangladesh became one of the focal point of the strategy. The plan duly noted that there are ample urban challenges for the country. As mentioned earlier climate change adaptation in Bangladesh is one of the major foci of the plan and accordingly the plan proposes several steps which have direct linkage with urban issues related to climate change. The missing links that have been found in the document is related to public health, renewable energy development, urban waste management, transportation emission, gender consideration and identification of local hotspots for more targeted intervention (Table 4.1, Table 4.2 and Table 4.3).

The National Sustainable Development Strategies, 2010-2021 was formulated with the twin goals of sustainable economic growth with environmental safety and ensuring social justice

by 2021. This coincides with the timeframe of Perspective Plan (2010-2021). This strategy document empowers planning commission with necessary measures to mainstream sustainable development in development planning process. The strategies focuses with five strategic priority sector with three crosscutting area. Urban environment is considered as one of the priority sector while Disaster Risk Reduction and Climate Change Adaptation is one of the cross sectoral issues. The strategy recognizes the challenges of Bangladesh regarding urban housing, management of urban slum and squatters, urban water supply and sanitation, urban transport, pollution and particularly urban hazards. In accordance the strategies were devised. However, as the Table 4.1 Table 4.2 and Table 4.3 suggest, there are missing links in areas of intervention like livelihood protection in ecologically fragile areas, risk management against loss on income and property, planning, design and implementation of resuscitation of river and *khals* through drainage and de-siltation work, risk and knowledge management, strengthening human resource capacity, and identification of local hotspots for more targeted intervention.

The 7th Five year plan is the key strategic plan for 2015-2020 for the nation. Adaptation to climate change and combating environmental problems has been included in several key areas of the plan. The plan recommended to implement the adaptation measures in conformity with the strategies of BCCSAP 2009 and NAPA 2009. However, measures for safe housing, climate change modeling at national and sub national level, improvement in energy consumption pattern in transportation sector, and identification of local hotspots for more targeted intervention needed to be addressed.

Table 4.1, Table 4.2 and Table 4.3 shows the linkages and gaps identified in National Development Strategy documents regarding adaptation of climate related strategies mentioned in six pillars of BCCSAP 2009, six intervention areas of NAPA 2009 and ten key areas of INDC 2015 respectively.

Table 4.1: Relationship Matrix between Program Area Relevant to Urban Planning of BCCSAP and Strategic Documents

Climate Change Intervention Program Area Relevant to Urban Planning according to BCCCAP	Strategic Plans for Bangladesh		
	Perspective Plan for Bangladesh (2010-2021)	National Sustainable Development Strategies, 2010-2021	7 th 5 Year Plan
Pillar 1: Food Security, Social Protection and Health			
1. Adaptation in health Sector	x	✓	✓
2. Water and sanitation program in climate vulnerable areas.	✓	✓	✓
3. Livelihood Protection in ecologically fragile areas.	✓	x	✓
4. Livelihood protection of vulnerable socio-economic groups (including women).	✓	✓	✓
Pillar 2: Comprehensive Disaster Management			
1. Awareness raising and Public Education towards climate resilience	✓	✓	✓
2. Risk management against loss on income and property.	✓	x	✓
Pillar 3: Infrastructure			
1. Improvement of urban drainage.	✓	✓	✓
2. Adaptation against flood.	✓	✓	✓
3. Adaptation against tropical cyclones and storm surges	✓	✓	✓
4. Planning, design and implementation of resuscitation of river and khals through drainage and desiltation work.	✓	x	✓
Pillar 4: Research and Knowledge Management			
1. Climate change modelling at national and sub-national level	✓	x	x

Climate Change Intervention Program Area Relevant to Urban Planning according to BCCCAP	Strategic Plans for Bangladesh		
	Perspective Plan for Bangladesh (2010-2021)	National Sustainable Development Strategies, 2010-2021	7 th 5 Year Plan
2. Macroeconomic and sectoral economic impacts of climate change	✓	x	✓
3. Monitoring of internal and external migration of adversely impacted population and providing support to them through capacity building for their rehabilitation in new environments.	✓	x	✓
Pillar 5: Mitigation and Low Carbon Development			
1. Renewable energy development.	x	✓	✓
2. Management of urban waste.	x	✓	✓
3. Energy and Water Efficiency in Built Environment.	✓	✓	✓
4. Improvement in energy consumption pattern in transport sector and options for mitigation.	x	✓	x
Pillar 6: Capacity Building and Institutional Strengthening			
1. Revision of sectoral policies for climate resilience.	✓	✓	✓
2. Main-streaming climate change in national, sectoral and spatial development program.	✓	✓	✓
3. Strengthening human resource capacity	✓	x	✓
4. Strengthening gender consideration in climate change management.	x	✓	✓
5. Strengthening institutional capacity for climate change management.	✓	✓	✓

Table 4.2: Relationship Matrix between Program Area Relevant to Urban Planning of NAPA and Strategic Documents

Climate Change Intervention Program Area Relevant to Urban Planning according to NAPA	Strategic Plans for Bangladesh		
	Perspective Plan for Bangladesh (2010-2021)	National Sustainable Development Strategies, 2010-2021	7 th 5 Year Plan
1. Enhancing resilience of urban infrastructure and industries to impacts of climate change including floods and cyclone	✓	✓	✓
2. Formulation of land zonation for climate change adaptation in Bangladesh	✓	✓	✓
3. Research towards land management	✓	✓	✓
4. Identification of local hotspots for more targeted intervention	x	x	x
5. Particular Specification in National Building Code for building industry and infrastructure in potentially vulnerable areas	x	✓	x
6. Strengthen capacities for risk assessment for flood, cyclone, drought, river bank erosion, pest attacks, earthquake, epidemics , including assessment of climate change risk	✓	✓	✓

Table 4.3: Relationship Matrix between Key Areas to Address Adverse Impacts of Climate Change in Urban Planning of INDC and Strategic Documents

Key Areas to Address Adverse Impacts of Climate Change Mentioned in INDC	Strategic Plans for Bangladesh		
	Perspective Plan for Bangladesh (2010-2021)	National Sustainable Development Strategies, 2010-2021	7 th 5 Year Plan
1. Food Security, Livelihood and Health Protection (Incl. Water Security)	✓	✓	✓
2. Comprehensive Disaster Management	✓	✓	✓
3. Coastal Zone Management Including Salinity Intrusion Control	✓	✓	✓
4. Flood Control and Erosion Protection	✓	✓	✓
5. Building Climate Resilient Infrastructure	x	x	✓
6. Increased Rural Electrification	x	x	✓
7. Enhanced Urban Resilience	✓	x	✓
8. Ecosystem Based Adaptation (Including Forestry Co-Management)	✓	✓	✓
9. Community Based Conservation of Wetlands and Coastal Areas	x	✓	x
10. Policy and Institutional Capacity Building	✓	✓	✓

It is evident from the tables (4.1, 4.2 and 4.3) that mainstreaming climate change in national, sectoral and spatial development program got due importance in all the strategy documents. All these three documents gave emphasis on adaptation against tropical cyclone, energy and water efficiency in built environment and strengthening institutional capacity for climate change management. However, the issues of urban climate resiliency, wetland management, climate change modeling and energy consumption in transport sector have not been addressed in two of these documents.

4.3 Identified Gaps in Documents Related to Disaster Management

One of precursor of climate change is increased frequency of disaster with higher intensity (Mirza, 2003). In this section, four national documents are reviewed to identify the gaps regarding adaptation of climate change adaptation actions and programs mentioned in BCCSAP 2009, NAPA 2009 and INDC 2015. The documents are

- National Disaster Management Policy, 2015
- National Plan for Disaster Management, 2010-2015
- Disaster Management Act, 2012
- Standing Order of Disaster, 2010
- Climate Change Trust Act 2010

It is interesting to note that Disaster Management Plan 2010-2015 and Disaster Management Act, 2012 was prepared and adopted before the National Disaster Management Policy, 2015 was adopted.

National Disaster Management Policy, 2015

The National Disaster Management Policy defines the national policy on disaster risk reduction and emergency response management, and describes the strategic policy framework, and national principles of disaster management in Bangladesh. This is one of the first policy documents of Bangladesh which considered BCCSAP 2009 as one of the basic strategy document for policy formulation. As a consequence most of the strategy programs mentioned in BCCSAP 2009 are covered by National Disaster Management Policy 2015 (Table 4.4).

This policy, considered mainstreaming climate change adaptation through disaster management framework and institutional capacity building. It provided greater emphasis urban risk reduction

as one of its major principles. But it did not integrate climate change adaptation in urban risk reduction.

It should be also mentioned here that all the climate change issues are not in purview of disaster management. So, some of the missing links like mitigation and low carbon development, climate change modeling, etc. are not expected to be addressed in this document.

National Plan for Disaster Management, 2010-2015

This document was prepared under the purview of Hyogo Framework (2000-2015) and other national and international disaster risk reduction commitments. This plan has covered most of the strategies and intervention programs and plan of actions stated in BCCSAP 2009, NAPA 2009 and INDC 2015 (Table 4.4, Table 4.5 and Table 4.6).

One of the major issues involved with planned development of urban areas is land zonation and urban infrastructure. But this plan did not cover these important aspects, particularly enhancement of resiliency of urban infrastructure and industries. It is important to note that due to lack of adequate acts and rules regarding land use zoning, natural resource areas like water bodies, agricultural land are under severe threat from urbanization.

Disaster Management Act, 2012

The act establishes necessary steps to create the Department of Disaster Management to fulfill the objectives of this act. The function of the department is to implement National Disaster Management Policy and National Disaster Management Plan. This Act also addresses macroeconomic and sectoral economic impact of climate change, migration and enhancing resilience of urban infrastructure which is not addressed in the above mentioned plan and policy documents.

Standing Order of Disaster, 2010

The Standing Order on Disaster 2010 is a guideline for different government ministries and organizations to perform appropriate and assigned functions for disaster risk reduction and emergency response at different stages i.e. normal times, alert or warning stage, disaster stage and rehabilitation stage of disaster. It is understandable that this document is an application tool regarding the role of officials and personals during disaster management phases. Thus there is no

need of special mention about climate change. Proper enforcement of SOD can play a vital role towards mainstreaming climate change in urban areas.

Table 4.4: Relationship Matrix between Program Area Relevant to Urban Planning of BCCSAP and documents related to Disaster Management

Climate Change Intervention Program Area Relevant to Urban Planning according to BCCCAP	Documents Related to Disaster Management				
	National Disaster Management Policy, 2015	National Plan for Disaster Management 2010-2015	Disaster Management Act 2012	Climate Change Trust Act 2010	Standing Order on Disaster 2010
Pillar 1: Food Security, Social Protection and Health					
1. Adaptation in health Sector	✓	✓	✓	✓	N/A
2. Water and sanitation program in climate vulnerable areas.	✓	✓	✓	✓	N/A
3. Livelihood Protection in ecologically fragile areas.	✓	✓	✓	✓	N/A
4. Livelihood protection of vulnerable socio-economic groups (including women).	✓	✓	✓	✓	N/A
Pillar 2: Comprehensive Disaster Management					
1. Awareness raising and Public Education towards climate resilience	✓	✓	✓	✓	N/A
2. Risk management against loss on income and property.	✓	✓	✓	✓	N/A
Pillar 3: Infrastructure					
1. Improvement of urban drainage.	✓	✓	✓	✓	N/A
2. Adaptation against flood.	✓	✓	✓	✓	N/A
3. Adaptation against tropical cyclones and storm surges	✓	✓	✓	✓	N/A
4. Planning, design and implementation of resuscitation of river and Khals through drainage and de-siltation work.	x	X	x	✓	N/A
Pillar 4: Research and Knowledge Management					
1. Climate change modelling at national and sub-national level	N/A	X	x	✓	N/A

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Climate Change Intervention Program Area Relevant to Urban Planning according to BCCCAP	Documents Related to Disaster Management				
	National Disaster Management Policy, 2015	National Plan for Disaster Management 2010-2015	Disaster Management Act 2012	Climate Change Trust Act 2010	Standing Order on Disaster 2010
2. Macroeconomic and sectoral economic impacts of climate change	x	X	✓	✓	N/A
3. Monitoring of internal and external migration of adversely impacted population and providing support to them through capacity building for their rehabilitation in new environments.	x	X	✓	✓	N/A
Pillar 5: Mitigation and Low Carbon Development					
1. Renewable energy development.	N/A	N/A	N/A	✓	N/A
2. Management of urban waste.	N/A	N/A	N/A	✓	N/A
3. Energy and Water Efficiency in Built Environment.	N/A	N/A	N/A	✓	N/A
4. Improvement in energy consumption pattern in transport sector and options for mitigation.	N/A	N/A	N/A	✓	N/A
Pillar 6: Capacity Building and Institutional Strengthening					
1. Revision of sectoral policies for climate resilience.	✓	✓	N/A	N/A	N/A
2. Main-streaming climate change in national, sectoral and spatial development program.	✓	✓	x	✓	N/A
3. Strengthening human resource capacity	✓	✓	x	✓	N/A
4. Strengthening gender consideration in climate change management.	✓	✓	x	✓	N/A
5. Strengthening institutional capacity for climate change management.	✓	✓	✓	✓	✓

Table 4.5: Relationship Matrix between Program Area Relevant to Urban Planning of NAPA and documents related to Disaster Management

Climate Change Intervention Program Area Relevant to Urban Planning according to NAPA	Documents Related to Disaster Management				
	National Disaster Management Policy, 2015	National Plan for Disaster Management 2010-2015	Disaster Management Act 2012	Climate Change Trust Act 2010	Standing Order on Disaster 2010
1. Enhancing resilience of urban infrastructure and industries to impacts of climate change including floods and cyclone	x	X	✓	✓	N/A
2. Formulation of land zonation for climate change adaptation in Bangladesh	x	X	x	✓	N/A
3. Research towards land management	✓	✓	✓	✓	N/A
4. Identification of local hotspots for more targeted intervention	x	X	x	✓	N/A
5. Particular Specification in National Building Code for building industry and infrastructure in potentially vulnerable areas	✓	✓	✓	✓	N/A
6. Strengthen capacities for risk assessment for flood, cyclone, drought, river bank erosion, pest attacks, earthquake, epidemics , including assessment of climate change risk	✓	✓	✓	✓	N/A

Table 4.6: Relationship Matrix between Key Areas to Address Adverse Impacts of Climate Change in Urban Planning of INDC and documents related to Disaster Management

Key Areas To Address Adverse Impacts Of Climate Change Mentioned In INDC	Documents Related to Disaster Management				
	National Disaster Management Policy, 2015	National Plan for Disaster Management 2010-2015	Disaster Management Act 2012	Climate Change Trust Act 2010	Standing Order on Disaster 2010
1. Food Security, Livelihood and Health Protection (Incl. Water Security)	x	x	x	x	✓
2. Comprehensive Disaster Management	✓	✓	✓	✓	✓
3. Coastal Zone Management Including Salinity Intrusion Control	x	✓	x	x	x
4. Flood Control and Erosion Protection	✓	✓	x	x	✓
5. Building Climate Resilient Infrastructure	x	x	✓	x	✓
6. Increased Rural Electrification	x	x	x	x	x
7. Enhanced Urban Resilience	x	x	x	x	x
8. Ecosystem Based Adaptation (Including Forestry Co-Management)	x	x	x	x	x
9. Community Based Conservation of Wetlands and Coastal Areas	x	x	x	x	x
10. Policy and Institutional Capacity Building	✓	✓	✓	✓	✓

4.4 Identified Gaps in Documents related to Urban Planning

Urban planning documents are the primary vehicle to ensure mainstreaming climate change in the development process. It needs to be noted that neither the National Urban Sector Policy nor Urban and Regional Planning Act has yet been ratified by government, though the draft was prepared and opened for public consultation since 2014. Thus there are scopes for addressing the gaps regarding mainstreaming climate change in these documents.

The National Urban Sector Policy aimed at bringing all the urban issues under one umbrella. It includes pattern and process of urbanization, local urban planning, urban land management, urban housing, urban environmental management, infrastructure and services, urban transportation, health and education, gender concerns, urban recreation, playground, park, open space and graveyard, rural urban linkage, urban governance, urban research, training and information. The policy addresses migration (a key adaptation measure against climate change) and tried to address it as a component of planned urbanization to avoid concentration of population in major cities. The policy covered most of the issues of Infrastructure, Research and Knowledge Management, Mitigation and Low Carbon Development and Capacity Building and Institutional Strengthening as mentioned in BCCSAP 2009. But clearly the policy lacks in addressing issues of Comprehensive Disaster Management (Table 4.7). It is of concern that the policy did not consider the issues mentioned in NAPA 2009 regarding formulation of land zonation for climate change adaptation and identification of local hotspots for more targeted intervention (Table 4.7)

Transportation is one of the important elements of urban planning as well as one of the major agent for global warming. The National Integrated Multimodal Transport policy shifted focus from road transport (one of the major source for CO₂ emission) to more environment friendly water and rail base transport. It covered the major issue of improvement in energy consumption pattern in transport sector and options for mitigation. Communication disruption due to flood and cyclone was not addressed in this document. It should be noted here that though National Integrated Multimodal Transport policy has moderate relationship with BCCSAP 2009 and NAPA 2009, but it covers the major issues of multimodal transport associated with climate change.

The revised Bangladesh National Building Code 2015 is prepared with the aim to establish minimum standards for design, construction, quality of materials, use and occupancy, location

and maintenance of all buildings within Bangladesh in order to safeguard, within achievable limits, life, limb, health, property and public welfare. It includes specific requirements for buildings in flood prone areas and surge prone areas in coastal regions of Bangladesh. The code also specifies requirements for other disaster prone areas of Bangladesh. Apart from these, the document also promotes energy efficiency and sustainability taking the concepts of Green Building, Sustainable Site Design, Rain Water Harvesting, Reuse of Grey Water etc. This document prescribed formation of a new authority title “Bangladesh Building Regulatory Board” to ensure enforcement of codes of BNBC. At present there is no such authority. Towards mainstreaming of climate change in urban development, particularly in building construction the enforcement of BNBC would play a vital role thus the establishment of “Bangladesh Building Regulatory Board” is a dire need.

At present there is no country wide regulation for urban and regional planning. The Urban and Regional Planning act is still in draft stage. On the other hand the widely used The Building Construction Act 1952 and The Town Improvement Act 1953 were promulgated long before climate change became an issue and developed for Dhaka and its surrounding areas. It should be mentioned here that some rules (discussed in section 3.3.3) were developed to implement these acts. The rules were more plot/ building specific and no guidelines are available to address climate change.

The local government acts empowered the local governments to plan the area under its jurisdiction (provided that the area does not fall into jurisdiction of development authority). According to the Act, the municipality would establish two standing committees for urban planning, infrastructure and physical development. Municipalities also have wide range of responsibilities in terms waste, drainage, transport management and public health issues. Thus the local government authorities have a far-reaching scope to mainstream climate change in urban planning. It should be mentioned here that according to SOD 2010, every municipality has to establish the Municipality Disaster Management Committee. According to SOD, this committee has a list of activities regarding preparedness, risk assessment, risk reduction and emergency response at different phases of disaster management. Though these two acts were formulated almost at same time of NAPA 2009 and BCSSAP 2009 but the acts did not directly considered any climate change documents and its strategies.

Table 4.7 reveals that the local governments do not address issues regarding adaptation to flood and cyclones, infrastructure development for increased climate resilience, and strengthening institutional capacity for climate change management. Though the draft of Urban and Regional Planning Act has been prepared after publication of BCCSAP 2009 and NAPA 2009 but it does not deal with the climate change adaptation actions regarding land zonation and intervention of local hot spots.

Parks, Playgrounds, Open Space and Natural Waterbody Conservation Act, 2000 was enacted before formulation of national climate change documents. The purview of this act has direct association with adaptation and mitigation of climate change in urban areas because conservation of natural resource areas and open spaces have significant contribution towards mitigation and adaptation (Table 4.7, Table 4.8 and Table 4.9).

Table 4.7: Relationship Matrix between Program Area Relevant to Urban Planning of BCCSAP and documents related to Urban Planning

Climate Change Intervention Program Area Relevant to Urban Planning according to BCCCAP	National Urban Sector Policy Draft	National Integrated Multimodal Transport Policy 2013	Draft Urban and Regional planning Act	Real Estate Development and Management Act 2010	Local Govt. Acts 2009	Park, Playground, Open Space and Natural Water Body Conservation Act, 2000	Town Improvement Act 1953	The Building Construction Act 1952	Draft Bangladesh National Building Code	Building Construction Rules 2008	Private Residential Land Development Rules 2015
Pillar 1: Food Security, Social Protection and Health											
1. Adaptation in health Sector	✓	N/A	x	N/A	✓	N/A	N/A	N/A	N/A	x	N/A
2. Water and sanitation program in climate vulnerable areas.	x	N/A	x	N/A	x	N/A	N/A	N/A	x	x	N/A
3. Livelihood Protection in ecologically fragile areas.	x	N/A	x	x	x	N/A	N/A	N/A	N/A	x	x
4. Livelihood protection of vulnerable socio-economic groups (including women).	✓	N/A	x	x	x	N/A	N/A	N/A	N/A	x	x
Pillar 2: Comprehensive Disaster Management											
1. Awareness raising and Public Education towards climate resilience	N/A	N/A	N/A	N/A	x	N/A	N/A	N/A	N/A	N/A	N/A
2. Risk management against loss on income and property.	x	x	x	x	x	N/A	x	x	x	x	x
Pillar 3: Infrastructure											
1. Improvement of urban drainage.	✓	N/A	x	x	✓	x	x	x	✓	x	x
2. Adaptation against flood.	✓	x	x	x	x	x	x	x	✓	x	x
3. Adaptation against tropical cyclones and storm surges	✓	x	x	x	x	x	x	x	✓	x	x
4. Planning, design and implementation of resuscitation of river and khals through drainage and de-siltation work.	x	✓	x	x	✓	x	x	N/A	N/A	x	x
Pillar 4: Research and Knowledge Management											

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Table 4.8: Relationship Matrix between Program Area Relevant to Urban Planning of NAPA and documents related to Urban Planning

Climate Change Intervention Program Area Relevant to Urban Planning according to NAPA	National Urban Sector Policy Draft	National Integrated Multimodal Transport Policy 2013	Draft Urban and Regional planning Act	Real Estate Development and Management Act 2010	Local Govt. Acts 2009	Park, Playground, Open Space and Natural Water Body Conservation Act, 2000	Town Improvement Act 953	The Building Construction Act 1952	Draft Bangladesh National Building Code	Building Construction Rules 2008	Private Residential Land Development Rules 2015
1. Enhancing resilience of urban infrastructure and industries to impacts of climate change including floods and cyclone	✓	N/A	x	N/A	x	N/A	x	x	x	x	x
2. Formulation of land zonation for climate change adaptation in Bangladesh	x	N/A	x	N/A	x	x	x	N/A	N/A	N/A	x
3. Research towards land management	✓	N/A	✓	N/A	x	x	x	N/A	N/A	N/A	x
4. Identification of local hotspots for more targeted intervention	x	N/A	x	N/A	✓	x	x	N/A	x	N/A	x
5. Particular Specification in National Building Code for building industry and infrastructure in potentially vulnerable areas	x	N/A	x	x	x	N/A	x	x	✓	✓	x
6. Strengthen capacities for risk assessment for flood, cyclone, drought, river bank erosion, pest attacks, earthquake, epidemics , including assessment of climate change risk	✓	N/A	x	N/A	x	N/A	x	x	N/A	x	x

Table 4.9: Relationship Matrix between Key Areas to Address Adverse Impacts of Climate Change of INDC and documents related to Urban Planning

Key Areas To Address Adverse Impacts Of Climate Change Mentioned In INDC	Documents Related to Urban Planning										
	National Urban Sector Policy Draft	National Integrated Multimodal Transport Policy 2013	Draft Urban and Regional planning Act	Real Estate Development and Management Act 2010	Local Govt. Acts 2009	Park, Playground, Open Space and Natural Water Body Conservation Act, 2000	Town Improvement Act 1953	The Building Construction Act 1952	Draft Bangladesh National Building Code	Building Construction Rules 2008	Private Residential Land Development Rules 2015
1. Food Security, Livelihood and Health Protection (Incl. Water Security)	X	X	X	X	X	X	X	X	X	X	X
2. Comprehensive Disaster Management	X	X	X	X	X	X	X	X	X	X	X
3. Coastal Zone Management Including Salinity Intrusion Control	X	X	X	X	X	X	X	X	X	X	X
4. Flood Control and Erosion Protection	X	X	X	X	X	X	X	X	X	X	X
5. Building Climate Resilient Infrastructure	X	X	X	X	X	X	X	X	X	X	X
6. Increased Rural	X	X	X	X	X	X	X	X	X	X	X

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Key Areas To Address Adverse Impacts Of Climate Change Mentioned In INDC	Documents Related to Urban Planning										
	National Urban Sector Policy Draft	National Integrated Multimodal Transport Policy 2013	Draft Urban and Regional planning Act	Real Estate Development and Management Act 2010	Local Govt. Acts 2009	Park, Playground, Open Space and Natural Water Body Conservation Act, 2000	Town Improvement Act 1953	The Building Construction Act 1952	Draft Bangladesh National Building Code	Building Construction Rules 2008	Private Residential Land Development Rules 2015
Electrification											
7. Enhanced Urban Resilience	X	X	X	X	X	X	X	X	X	X	X
8. Ecosystem Based Adaptation (Including Forestry Co-Management)	X	X	X	X	X	X	X	X	X	X	X
9. Community Based Conservation of Wetlands and Coastal Areas	X	X	X	X	X	X	X	X	X	X	X
10. Policy and Institutional Capacity Building	✓	X	X	X	X	X	X	X	X	X	X

It is clear from the tables that most of the urban related documents did not adequately incorporated strategies to mainstream climate change. In order to mainstream climate change, it is necessary to include climate related issues in draft versions of the documents. In addition, there is need for revision of some the older documents to reflect the contemporary challenges, particularly climate change aspects.

4.5 Identified Gaps in Crosscutting Sectoral Documents Related to Climate Change and Urban Planning

Climate change and urban planning are both multi-disciplinary and multi-sectoral. Bearing this in mind, the researchers also reviewed a number of cross sectoral policies which have close association with climate change and urban planning. 17 policies, plans, acts and rules are discussed (Table 3.5). It should be mentioned here that some of the important policies were prepared before BCSSAP 2009 and NAPA 2009.

Cross Sectoral Policies

According to the NAPA 2009, impacts of climate change will likely be the most critical on water sector in Bangladesh – which includes flooding in coastal and riverine areas, again enhanced possibility of dry season drought in certain areas. Climate change impacts also include salinity intrusion which severely affects the availability of potable water.

The burden of climate change on water resources requires special attention in National Water Policy. National Water Policy 1999 was prepared a decade, before the adoption of BCSSAP 2009 and NAPA 2009. Major gaps identified in the National Water Policy 1999 includes absence of policies regarding management of flood and drought and encroachment of flood flow zones and low land (IUCN, n.d.). Coastal zone of Bangladesh is most vulnerable to climate change (Huq et al., 2004). As the Coastal Zone policy was prepared in 2005, the climate change impacts are not directly referred in this document. Though it covered a wide range of issues which includes water sanitation, livelihood protection etc. However, the policy did not address the important issues associated with climate change such as modeling at regional level and mainstreaming climate change in national, sectoral and spatial development program (Table 4.10).

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Table 4.10: Relationship Matrix between Program Area Relevant to Urban Planning of BCCSAP and Cross Sectoral documents

Climate Change Intervention Program Area Relevant to Urban Planning according to BCCSAP	National Housing Policy, 2016	Bangladesh Agricultural Policy, 2015	National Environment Policy 2013	The Environment Conservation Act 1995	The Forest Act 1927	The Environmental Conservation Rate 1997	National Water Policy 1999	National Water Management Plan, 2004	Bangladesh Water Act 2013	Guideline for EA for Water Management ent., 2005	Industrial Policy, 2010	Renewable Energy policy, 2009	Coastal Zoning Policy, 2005	National Land Transport Policy 2004	Land Use Policy, 2001	Brockfield and Brick Making (Control) Act 2013
Pillar 1: Food Security, Social Protection and Health																
1. Adaptation in health Sector	N/A	x	✓	N/A	N/A	N/A	x	✓	x	N/A	N/A	N/A	x	x	N/A	x
2. Water and sanitation program in climate vulnerable areas.	N/A	x	✓	N/A	N/A	N/A	x	✓	x	✓	N/A	N/A	✓	N/A	N/A	N/A
3. Livelihood Protection in ecologically fragile areas.	x	✓	✓	N/A	N/A	N/A	✓	✓	✓	N/A	N/A	x	✓	N/A	x	x
4. Livelihood protection of vulnerable socio-economic groups (including women).	✓	✓	✓	N/A	N/A	N/A	✓	✓	✓	N/A	N/A	x	✓	x	x	x
Pillar 2: Comprehensive Disaster Management																
1. Awareness raising and Public Education towards climate resilience	x	x	✓	N/A	N/A	N/A	x	✓	x	✓	x	x	✓	x	x	x
2. Risk management against loss on income and property.	✓	✓	x	N/A	N/A	N/A	✓	✓	x	N/A	N/A	x	✓	N/A	x	x
Pillar 3: Infrastructure																
1. Improvement of urban drainage.	✓	x	✓	✓	N/A	x	✓	✓	✓	✓	N/A	N/A	x	N/A	x	N/A
2. Adaptation against flood.	x	✓	✓	N/A	N/A	N/A	✓	✓	✓	✓	x	x	✓	x	x	N/A
3. Adaptation against tropical cyclones and storm surges	x	✓	✓	N/A	N/A	N/A	✓	✓	x	✓	N/A	N/A	✓	N/A	✓	N/A
4. Planning, design and implementation of resuscitation of river and khals through drainage and de-siltation work.	N/A	x	✓	x	N/A	x	✓	✓	✓	✓	N/A	N/A	✓	N/A	✓	N/A
Pillar 4: Research and Knowledge Management																
1. Climate change modelling at national and sub-national level	N/A	✓	N/A	N/A	N/A	N/A	x	✓	x	N/A	x	N/A	x	N/A	N/A	N/A
2. Macroeconomic and sectoral economic impacts of climate change	x	x	N/A	N/A	N/A	N/A	x	✓	x	N/A	x	x	x	x	x	N/A
3. Monitoring of internal and external migration of adversely impacted population and providing support to them through capacity building for their rehabilitation in new environments.	✓	N/A	✓	N/A	N/A	N/A	N/A	✓	N/A	N/A	x	N/A	✓	N/A	N/A	N/A
Pillar 5: Mitigation and Low Carbon Development																
1. Renewable energy development.	✓	✓	✓	x	N/A	x	N/A	✓	N/A	N/A	✓	✓	✓	x	x	N/A
2. Management of urban waste.	x	N/A	✓	✓	N/A	x	✓	✓	x	N/A	N/A	N/A	x	N/A	x	N/A
3. Energy and Water Efficiency in Built Environment.	✓	x	✓	x	N/A	x	✓	x	x	x	N/A	✓	✓	N/A	✓	N/A
4. Improvement in energy consumption pattern in transport sector and options for mitigation.	N/A	N/A	✓	x	N/A	✓	N/A	✓	N/A	N/A	N/A	x	N/A	✓	x	N/A
Pillar 6: Capacity Building and Institutional Strengthening																
1. Revision of sectoral policies for climate resilience.	N/A	✓	x	N/A	N/A	N/A	x	✓	N/A	N/A	x	x	N/A	x	x	N/A
2. Main-streaming climate change in national, sectoral and spatial development program.	N/A	✓	✓	x	N/A	x	x	✓	x	x	x	x	x	x	x	N/A
3. Strengthening human resource capacity	✓	✓	x	x	N/A	x	✓	✓	x	N/A	x	x	✓	x	x	N/A
4. Strengthening gender consideration in climate change management.	✓	✓	x	N/A	N/A	N/A	✓	✓	x	N/A	x	N/A	✓	x	N/A	N/A
5. Strengthening institutional capacity for climate change management.	✓	✓	✓	x	N/A	x	✓	✓	x	N/A	x	✓	✓	x	x	N/A

Table 4.11: Relationship Matrix between urban issues of NAPA and Cross Sectoral Documents Related to Climate Change and Urban Planning

Climate Change Intervention Program Area Relevant to Urban Planning according to NAPA	National housing Policy, 2016	Bangladesh Agricultural policy, 2013	National Environmental Policy 2013	The Environment Conservation Act 1995	The Forest Act 1927	The Environmental Conservation Rule 1997	National Water Policy 1999	National Water Management Plan, 2001	Bangladesh Water Act 2013	Guideline for EA for Water Management, 2005	Industrial Policy, 2010	Renewable Energy policy, 2009	Coastal Zoning Policy, 2005	National Land Transport Policy 2004	Land Use Policy, 2001	Brickfield and Brick Making (Control) Act 2013
1. Enhancing resilience of urban infrastructure and industries to impacts of climate change including floods and cyclone	✓	x	✓	x	N/A	x	✓	✓	✓	✓	x	x	x	x	x	x
2. Formulation of land zonation for climate change adaptation in Bangladesh	N/A	x	✓	N/A	N/A	N/A	✓	x	✓	N/A	N/A	N/A	✓	N/A	x	x
3. Research towards land management	✓	x	✓	N/A	N/A	N/A	✓	x	x	N/A	✓	N/A	✓	N/A	✓	x
4. Identification of local hotspots for more targeted intervention	✓	x	x	N/A	N/A	N/A	✓	x	x	x	N/A	N/A	x	N/A	x	x
5. Particular Specification in National Building Code for building industry and infrastructure in potentially vulnerable areas	✓	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	x	N/A	x	N/A
6. Strengthen capacities for risk assessment for flood, cyclone, drought, river bank erosion, pest attacks, earthquake, epidemics, including assessment of climate change risk	✓	x	✓	x	N/A	x	✓	✓	✓	✓	N/A	N/A	✓	N/A	x	x

Table 4.12: Relationship Matrix between Key Areas to Address Adverse Impacts of Climate Change of INDC and Cross Sectoral documents

Key Areas To Address Adverse Impacts Of Climate Change Mentioned In INDC	National Housing Policy, 2016	Bangladesh Agricultural Policy, 2013	National Environmental Policy 2013	The Environment Conservation Act 1995	The Forest Act 1927	The Environmental Conservation Rule 1997	National Water Policy 1999	National Water Management Plan, 2004	Bangladesh Water Act 2013	Guideline for EA for Water Management, 2005	Industrial Policy, 2010	Renewable Energy policy, 2009	Coastal Zoning Policy, 2005	National Land Transport Policy 2004	Land Use Policy, 2001	Brickfield and Brick Making (Control) Act 2013
1. Food Security, Livelihood and Health Protection (Incl. Water Security)	X	X	✓	X	X	X	X	X	X	X	X	X	✓	X	X	X
2. Comprehensive Disaster Management	X	X	✓	X	X	X	X	X	X	X	X	X	✓	X	X	X
3. Coastal Zone Management Including Salinity Intrusion Control	X	X	X	X	X	X	X	X	X	X	X	X	✓	X	X	X
4. Flood Control and Erosion Protection	X	X	✓	X	X	X	✓	✓	X	X	X	X	✓	X	X	X
5. Building Climate Resilient Infrastructure	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6. Increased Rural Electrification	X	X	X	X	X	X	X	X	X	X	X	✓	X	X	X	X
7. Enhanced Urban Resilience	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8. Ecosystem Based Adaptation (Including Forestry Co-Management)	X	X	✓	X	X	X	X	X	X	X	X	X	X	X	X	X
9. Community Based Conservation of Wetlands and Coastal Areas	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10. Policy and Institutional Capacity Building	X	X	X	X	X	X	X	X	X	X	X	X	✓	X	X	X

National Land Use Policy, 2001 covers issues of land-use, some of which met the strategies of BCSSAP 2009 and NAPA 2009. But many issues regarding climate change and urban planning needed to be properly addressed in the policy. It failed to identify adequate policies regarding ecological fragile areas, water and sanitation and drainage management. It also did not address local hotspots those require for more targeted intervention to ensure better control and management. One of the goals of the national land transport policy to limit the share of private car use in Dhaka. The policy provides necessary measures to reduce GHG emission, air pollution as well as reducing energy consumption in transportation. It is evident from Table 4.10, Table 4.11 and Table 4.12 that, this policy did not address most of the strategies mentioned in BCCSAP 2009, NAPA 2009 and INDC 2015. The National Housing Policy 2016 calls for proper adaptation mechanism and construction of disaster resilient housing in disaster prone areas for addressing climate change. It needs to be noted that no specific guideline is provided in this document regarding mainstreaming climate change adaptation in housing sector.

The National Industrial Policy, 2010 and Bangladesh Agricultural Policy, 2013 were prepared concurrently to BCCSAP 2009 and NAPA 2009. Though Industrial Policy promotes clean development mechanism under Kyoto Protocol and promotes industries to introduce 3R (Reduce, Reuse and Recycle) strategies but it does not take into account most issues as documented in climate change papers of Bangladesh. On the other hand, Bangladesh Agricultural Policy, 2013 embraces the first pillar of BCSSAP 2009 but failed to address the key issues related with urban planning, climate change and agriculture, particularly promotion of urban agriculture, protection of water bodies, rivers and *khals* for sustainable fish stock.

The National Environmental Policy, 2013 addresses key environmental issues which have direct implications on climate change and urban planning. This policy is a comprehensive document from the perspective of climate change and covers most of the issues that are faced by urban planners in dealing with climate change. However, it fails to provide guidelines on adaptation methods against flood and cyclone, climate resilient infrastructure, research and knowledge management, gender consideration, development of renewable energy and identification of local hotspots for intervention. The draft energy

policy considers environmental issues but neglects the issues of climate change in the context of energy sector. As a result, the policy does not include issues like improvement in energy consumption pattern in transport sector and options for mitigation, revision of sectoral policies for climate resilience (Table 4.10). Though the document did not include climate issues, but it mentioned the need for Renewable Energy Policy to ensure sustainable energy consumption. The Renewable Energy Policy, 2009 acknowledges the impending threat of climate change due to GHG gas emission. It recognizes climate change as one of the reasons for developing renewable energy sector but still fails to address the issues like improvement in energy consumption pattern in transportation sector with renewable energy, mainstreaming climate change etc.

Issues in Plans/ Acts/ Rules

The National Water Management Plan, 2001 is the implementation tool of National Water Policy 1999 which was prepared almost a decade before the adoption of BCCSAP and NAPA. However, this plan addressed a number of aspects discussed in NAPA 2009. It gave emphasis on enhancing resilience of urban infrastructure and formulation of land zonation which is associated with climate change adaptation strategy and action plan of Bangladesh.

The Environment Protection Act 1995, the Environment Protection Rules 1997, the National Water Act 2013 are the tools for implementing the environmental and water policies. It may be mentioned here that The Environment Protection Act 1995, the Environment Protection Rules 1997 were formulated after formulation of National Environmental Policy of 1992 which was replaced by National Environmental Policy of 2013. These acts are implementing mechanism of the policies with provision for punishment for violating the limits imposed by the acts. However, the acts and rule though established decisive level for pollution, ecological critical area they fails to include climate change and disaster related issues into account.

Chapter 5: Main-streaming Climate Change in Urban Planning Policies: Gaps in Existing Legal Documents

5.1 Introduction

In the period 1850–2008, developed countries accounted for 878 gigatonnes (Gt), or 72% of the cumulative global GHG emissions of 1,214 Gt (Khor, 2010). In contrast, per capita emission in the Bangladesh is very low, at only 0.4 metric tons against the global average of 4.991 metric tons in 2013 (World Bank, 2017). Climate advocates have strongly argued that developed countries must assume a heavier burden for responding to climate change. But it also necessary for the developing countries to align their Policies, Plans, Acts and Rules to respond the emerging challenges they face due to climate change. This chapter provides a brief overview of international legal regime on climate change as well as analyzes the Acts and Rules of Bangladesh to meet the challenges of climate change in urban development perspective.

5.2 International Legal Regime on Climate Change

Though the US President's Advisory Committee panel in 1965 warns about the greenhouse effect is a matter of real concern and it was in the public domain of concern till late 1980s (Bell, 2013). In 1988, Intergovernmental Panel on Climate Change (IPCC) was formed to collect and review the evidences on climate change. IPCC produced it first report in 1990 claiming that human activity is adding to the rise of earth's temperatures. In 1992, all the participating countries (172) in the United Nations Conference on Environment and Development (UNCED) (More Popularly known as Earth Summit or Earth Summit at Rio) agreed the United Framework Convention on Climate Change (UNFCCC) – the first convention on climate change. The convention came into effect on 21st March 1994 and now ratified by 196 countries. The UNFCCC requires parties to undertake programs and actions to facilitate mitigation and adaptation and to provide financial and technological support based on the principle of “common but differentiated responsibility.” It obliges countries to reduce anthropogenic emissions and protect and enhance carbon sinks and reservoirs. It further requires that the Annex I countries of the convention would undertake mitigation actions (Appendix E) and Annex II parties of the

countries (developed countries required to give financial and technological support) to provide “new and additional financial” resources to meet the “agreed full costs” incurred by developing countries in complying with their mitigation and adaptation related obligations (Appendix E). It should be mentioned here that countries listed in Annex I are industrialized country who are member of OECD or countries from former Socialist Regime. However, countries of former socialist regime are not party in Annex II but OECD countries are member of Annex II. On the other hand non Annex I countries are developing countries, 49 of which are considered as least developed. Bangladesh is one of the countries in the least developed categories. For mitigation, the UNFCCC requires special attention to the sectors of energy, transport, industry, agriculture, forestry, and waste management. Annex II countries are committed to provide financial resources, including for the transfer of technology needed by the developing country parties to meet the “agreed full incremental costs” of the implementing measures. Implementation of these commitments must take into account the need for adequacy and predictability in the flow of funds and the importance of appropriate burden sharing among the developed country parties.

UNFCCC 1992 was followed the Kyoto Protocol (KP) which aimed at reducing greenhouse gas emissions of the countries based on the scientific consensus. It entered into force on 16th February 2005 following ratification by 55 countries that were responsible for 55% of the global GHGs for 1990. It recognizes that developed countries are principally responsible for the current high levels of GHG emissions in the atmosphere hence places a heavier burden on developed nations under the principle of "common but differentiated responsibilities". The protocol required that the developed countries listed in Annex I reduce their aggregate anthropogenic carbon dioxide emissions against certain prescribed targets between two periods (i) 2008–2012, and (ii) January 2013 to December 2020. As Canada, Japan, New Zealand, and the Russian Federation refused to join the second commitment period of the Kyoto Protocol, it fell short of the ratification requirements and has all along been struggling to deliver the desired emission reduction results. The global community has been demanding definite legal pledges to reduce emission of GHGs by 40%–50% by 2020 and to bring it down to 90%–100% in order to keep the rise of global temperature within 1.5 degree to 2 degree

Celsius and contain the CO₂ concentration below 350 parts per million. It should be mentioned here that there are conference of parties (more commonly known as COP) to review the progress of implementation of UNFCCC since 1995. In the 21st COP which was held in Paris 196 countries come to a legally binding consensus on reducing their carbon output "as soon as possible" and to do their best to keep global warming "to well below 2 degrees Celsius". The Paris Agreement (2015) which entered into force on 4th November 2016 and now ratified by 153 countries. Critics argue it will do little to reduce emissions because it allows developed countries to avoid their emission reduction responsibilities. UNEP's assessment of the 160 Intended Nationally Determined Contributions (INDCs) shows that even if all of the INDCs are fully implemented, it will only be consistent with staying below an increase in temperature of 3.2 degrees Celsius by 2100. It has adopted a bottom-up approach for emission reduction and has required all parties to undertake "Intended Nationally Determined Contributions (INDC)." In line with scientific assertions, the Paris Agreement has set a temperature target for states to reduce their emission to stay well below 2 degrees Celsius above pre-industrial levels. In a major victory for the climate justice groups, States have also been encouraged to pursue efforts to limit the temperature increase to 1.5 degree Celsius above pre-industrial levels. Paris Agreement required all parties to pursue domestic mitigation measures with the aim of achieving the reduced temperature target. However, in defining the responsibility of the developed and developing country parties with regard to emission reduction, uses the term "should" instead of "shall," meaning that the obligation is not strictly mandatory. As such, parties are only obligated to "aim" to achieve the target instead of achieving the target itself (FoE, 2016). The agreement emphasized the need to conserve and enhance sinks and reservoirs, including forests, for increased removal of GHGs and to promote renewable energy. Finance and financial support measures continue is one of the contentious issues in the Paris Agreement. It lacks clarity on the continuous and enhanced international support for adaptation. There is also no clear source of finance and soften developed world's obligation on financing by stating as part of global effort.

5.3 Climate Change and Urban Legislations: A Brief Analysis

As mentioned earlier (refer to chapter three) there are two specific laws that deals directly with Climate Change -Climate Change Trust Act, 2010 and the Disaster Management Act, 2012. Although the Climate Change Trust Act, 2010 has provisioned for the creation of Trust Fund to support projects developed in line with the Bangladesh Climate Strategy and Action Plan (BCCSAP 2009), the latter document has not been succeeded by legal enactments in the six action areas it has identified. The Climate Change and Trust Act, 2010 aims to provide fund for programs targeting-

- increasing resilience of communities living in areas affected by and threatened with climate change, improving their life standards and combating of long-term risks
- reduction of adverse impacts of climate change through adaptation, mitigation, technology development and transfer, and funding arrangements

Both the objectives of the Trust have high relevance for the major urban areas of Bangladesh as climate change will increase (i) pressure on urban infrastructure (Shahid et al, 2016), (ii) vector-borne diseases (Rahaman, 2008), (iii) frequency and magnitude of natural disasters, (Alam and Rabbani, 2007), and of course, (iv) the influx of in-country migrants (Islam et al, 2014). Although it has been predicted in the BCCSAP that around 20 million people are faced with the threat of displacement in the event of sea level rise and that these ‘environmental refugees’ will spread in the existing major city areas, the BCCSAP has not elaborated on how the adaptive capacity of the cities shall be improved. It remains a matter of future planning to see how the major cities of the country, including the Capital, which is under treat of climate induced hazards (Alam and Rabbani, 2007).

Though two distinct bodies, i.e., (a 17 member Trust Board and a 13 member Technical Committee) have been formed under the Act of 2010, none of these bodies have any representation from agencies mandated to regulate urban planning and management.

The Disaster Management Act, 2012 has defined 'Climate Change' and also ‘vulnerability’ but lacks the definitions of ‘adaptation’ and ‘resilience’. Although this law aims to develop effective disaster management structures, the institutional arrangements

proposed and the mandates of the institutions are largely reactive and relief and rehabilitation centric leaving little scope for adaptive planning and preparations for the urban areas. The definitions of ‘disaster’ and ‘hazards’ as given in the law also are not inviting against ‘slow onset hazards’ that climate change will expose the urban areas to. The law has no vision for cities to be faced with onslaughts of climatic extremes and is not at all preventive in approach. The mandates given to the Government to prepare National Disaster Management Plan and to the Local Disaster Management Committees to prepare Local Disaster Management Plan that can, be utilized to strategize against the unique climatic challenges the various urban areas will be experiencing. While the plans proposed can be utilized to mainstream climate change in urban management, the fact that the law does not require public consultations and involvements in the preparation of the Plans (if one is ever made) is discouraging on counts of sustainability, acceptance, and effectiveness of the Plans.

Table 3.1 provided a list of laws on urban planning issues which were considered for review. In addition there are ordinances for city development authorities for some of the major towns as well as planning documents. Under the governing laws, City Corporations and Pourashavas often have (i) often overlapping functions with other planning and control agencies (Specially Development Authorities) with regard to urbanization, urban planning, regulation and development, and (ii) directive and not mandatory functions with regard to natural resource management, protection services, disaster management and so on. City Corporations and Pourashavas have very different budgets and expertise for performing almost the same set of functions.

Under the Local Government (City Corporation) Act, 2009, the City Corporations carry out their mandates through 14 Standing Committees assigned with specific duties. As mentioned earlier (Chapter Four) there are two standing committees of the City Corporations assigned specifically to deal with town planning and development, and disaster management. While the disaster management functions of the City Corporations merely require them to coordinate with the administration and act in line with governmental policies in combating ‘natural disasters’ without making any express reference to climate change, their town planning functions allow the development and

implementation of five-year plans and other plans with different durations. Although the law does not spell out or elaborate the possible contents of such plans, the same may well include adaptive needs and capacities of the cities in dealing with various scenarios under climate change. The building construction functions of the City Corporations only limit to removal of dangerous structures and have no nexus with regulating patterns of future buildings that will be required to deal with extreme climatic changes and also to follow low carbon path as envisaged in theme 5 of the BCCSAP. Again, the functions with regard to trees, parks, and afforestation do not mandate the City Corporations to maintain required amount of greenery or open spaces nor are they bound to create and maintain urban forests, either as buffer zones or sinks. The water supply, drainage, and waste disposal functions of the City Corporations are quite narrow with wide gaps with the BCCSAP that has warned urban areas to be especially vulnerable to reduced surface and groundwater and has required a mitigation and low carbon development in dealing with civic and utility services. On the other hand, the functions of the Pourashavas are performed by five Standing Committees of which one is specifically entrusted to deal with town planning, civic service and development. The role of this Standing Committee is crucial for mainstreaming climate change in the town planning and management process of the Pourashavas. The Pourashavas are required to prepare Master Plans for their areas where crucial factors with regard to climate change adaptation and resilience may be incorporated particularly in the process of expansion and development of urban areas, and in provisioning for public services that have to ensure 'economic and social justice'. However compared to the City Corporations, the functions of the Pourashavas on disaster management regrettably are rather narrow and not strategic.

The purely urban planning and development laws, namely the Building Construction Act, 1952 and the Town Improvement Act, 1953 are clearly outdated in terms of climate considerations and in their present forms, without any mention of climate change. Although the BCCSAP recommends development of non-binding codes, it is desirable that the recommendations for energy saving devices in all infrastructure, collection and storage of rainwater, and installation of solar thermal power or wind mills in all buildings can be added through, some existing provisions of the 1952 Act.

The Town Improvement Act of 1953 is applicable only in Dhaka and the major neighboring cities of Narayangonj and Gazipur. It has the scope to develop and enforce a Master Plan incorporating climate change considerations. The provisions of this Act with regard to development of new improvement schemes and preparation of Master Plan for Dhaka, Gazipur and Narayangonj, though presently silent, are broad enough to integrate climate considerations in all future instances. An improvement scheme that basically targets development of new urban areas can consider the recommendations of BCCSAP on infrastructure making climate resilient urban areas and can prevent further deterioration of the existing precarious urban conditions by making optimum use of available lands, and arranging for water-supply, drainage, sewage, open spaces as may be required for the residents. The Master Plan proposed could have been and can still be an important and enforceable planning tool to regulate expansion of the City, population inflow, and haphazard developments. Neither of the two Master Plans developed under the 1953 Act have expressly considered climate change but the provisions of the existing Master Plan on land use and utilization; maximum population limit, and protection of wetlands, retention area, greenery and other buffer zones, if followed could have minimized some negative impacts of weather changes as being already felt. The Master Plans for Dhaka prepared in 1959 and 1995-2015 are outdated by the BCCSAP. It is well understood that while the Master Plan can make recommendations on all the stated areas of BCCSAP 2009 and NAPA 2009 which have spatial dimension and has definite legal sanctions, preparation and implementation of a climate-resilient Master Plan shall require highest political commitment, clear mechanism for inter-agency coordination, clear institutional arrangement favoring decentralization, wider awareness on climate issue.

While the latest Master Plan for Chittagong prepared in 2008 has not explicitly mentioned climate change or could refer to BCCSAP, its objectives and some recommendations with regard to future development, flood flow, urban greenery, hill conservations are relevant for the implementation of BCCSAP. Considering the climatic challenges that will aggravate the drainage congestion and the existing constraints of other utility services of the Chittagong City, no specific recommendations have been made in the document that elaborate plans on infrastructure and environmental issues.

The Structure Plan of the three-tier Master Plan of Barisal prepared in 2010 by the Urban Development Directorate (UDD) under the Ministry of Housing and Public Works has mentioned climate change while detailing out policies on urban land development, but has neither mentioned nor drawn from the BCCSAP prepared a year earlier. The Plan has admitted influx of migrants and has committed to reduce inefficiencies and inequalities in urban development. The recommendations of the Plan on Infrastructure are in line with some program areas of BCCSAP. Although the plan recommended 'proactive' disaster management, the recommendations of other pertinent issues (like Flood Control and Drainage Management, Urban Land Development Policies, etc.) are grossly inadequate for proactive management of climate change with huge magnitude.

The implementation of the Real Estate Development and Management Act, 2010 and the Private Residential Project Land Development Rules, 2004 (amended in 2012) made there under unfortunately have inflicted negative impacts on planned urban development as proposed under the Town improvement Act, 1953. The said laws have attempted to create scope for developing townships crossing land ceilings proposed under two existing laws, i.e., the Land Holding Limitation Order, 1972 and the Land Reforms Ordinance, 1984. This means negative implications for the recommendations of BCCSAP on infrastructure and food safety. The present practice of land development is often contradicts the concerns of BCCSAP on infrastructure, food security, health, and comprehensive disaster management as they are causing very fast change in the blue and green lines of the landscape.

As many as eight laws regulate the administration of water sector most of which, by virtue of their general provisions and country-wide application, have relevance to City water governance. The Embankment and Drainage Act, 1952 regulates the construction of embankments and control of water-courses for better drainage of lands and for their protection from floods, erosion and other damage by water while Water Development Board Act 2000 entrusted Bangladesh Water Development Board to regulate the flows of all waters (surface and ground).

The Bangladesh Water Act, 2013 has established state control over five types of waters including rain water and water in the atmosphere and has declared that right to water for

drinking and for hygiene shall be treated as priority rights. This Act has provisioned for declaration of Water Stress Area and for regulating the use of water in such areas. In addition to ensuring natural flow of surface water streams, this Act also has authorized the Executive Committee to determine the safe yield limit of ground water in any place of the country.

While Parks, Playgrounds, Open Space and Natural Water body Conservation Act, 2000 (Act No. 36 of 2000) has specific provision for protection of urban wetlands, the Bangladesh Environment Conservation Act, 1995 has specific provisions to protect wetlands all over the country from being filled up 'except for inevitable national needs'. The National River Protection Commission formed under National River Protection Commission Act, 2013 has the mandate to recommend to the government measures required to protect rivers and other surface water bodies from encroachments and pollution. Religious implementation of the provisions of Act No. 36 of 2000 and the recommendations of the Master Plans with regard to protection of urban wetlands can save/restore important sources of water supplies for the massive urban populaces whereas the provisions of the National River Protection Commission Act, 2013 and the Environmental Conservation Act, 1995 can be used for saving the precious urban wetlands from indiscriminate pollution.

The Water and Sewerage Authorities (WASA) for Dhaka, Chittagong, and Khulna established under the 1996 WASA Act have broad mandate to supply potable water, arrange for drainage of rain water, and for treating and removing sewage and industrial waste waters.

None of the laws in the water sector has mentioned climate change but the various enabling provisions allow implementation of programs spelt out under the theme 'Infrastructure' in the BCCSAP. The laws can address concerns of BCCSAP over the ever-deteriorating state of the ground and surface water in the urban areas. Under the provisions of the Water Act, 2013, special programs can be undertaken for rain-water harvesting and for the water stressed urban pockets while under the WASA Act, inequitable distribution of water amongst various urban pockets can be addressed. Structural interventions needed for protection of urban areas from inundations and

erosions are also possible under the existing laws. What is important here is to ensure that the infrastructures pass the test of ‘sustainability’ under Section 12 of the Environment Conservation Act, 1995. Further, in designing programs under the relevant laws in the water sector, the responsible agencies should duly consider the recommendations of the BCCSAP so that urban areas and structures demanding immediate attention get priority.

The following table provides a summary of the strength and weakness of existing legislation for mainstreaming climate change in urban development.

Table 5.1: Mainstreaming Climate Change Strategies into Urban Legislations

Sl. No	Name of Laws	Strengths	Gaps	Comments
1.	Climate Change Trust Act, 2010	Objectives are relevant for urban areas	No specific focus on urban areas in supporting projects/programs; institutions formed do not include agencies responsible for urban management	A ratio may be set for supporting projects/programs that target building urban resilience against climatic changes
2.	Disaster Management Act, 2012	Recognizes climate changes; the National Disaster Management Plan and the Local Disaster Management Plans to be prepared leaves scope to mainstream urban climatic challenges	Focus is on relief and rehabilitation and no building resilience; absence of requirement on public participation in preparation of plans;	The law needs to be revisited to address the concerns of BCCSAP
3.	Town Improvement Act, 1953	Scope to incorporate BCCSAP concerns in the Master Plan; new Improvement Schemes can promote climate resilient urban development	Predates BCCSAP; regardless violation of the existing Master Plan by vested quarter adds to climatic threats;	The Master Plan should set a vision for the City which is still missing. The vision must facilitate a liveable City and address the issue of environmental refugees. Highest political commitment shall be required for the third tier of the Master Plan (Detailed Area Plan) under preparation to facilitate development of a climate resilient City through strict implementation.
4.	Building Construction Act, 1952	Some provisions are supportive of BCCSAP	Predates BCCSAP; does not mention 'climate resilience' as an objective	New set of bylaws are needed for mandatory requirements with regard to less carbon intensive, eco-friendly, climate resilient and adaptive development
5.	Real Estate Development and Management Act, 2010	Scope to regulate forced and unauthorized development of marshy and agricultural lands of the City	Lack of political commitment leads to weakness in enforcement and taking ways the green and blue areas of the City; biased implementation aggravating BCCCAP concerns on food safety, drainage, comprehensive disaster management, and resilient urban development	Proper implementation of the law is needed to (i) prevent loss of agricultural lands and natural drainage system, (ii) ensure equitable and sustainable living, (iii) minimize losses against climatic threats
6.	Private Residential Project	Scope to regulate land development	Provisions on maximum allowable land	The contrary provision on maximum

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Sl. No	Name of Laws	Strengths	Gaps	Comments
	Land Development Rules, 2004	projects in the City	holdings are contrary to with existing laws on land ceiling; leading to filling up of wetlands and agricultural lands in and around the City in the name of housing; biased implementation aggravating BCCAP concerns on food safety, drainage, and resilient urban development	allowable land holding for private housing must be removed; strict enforcement needed to prevent land grabbing and to ensure that the violators are punished and agricultural and/or wetlands are not used for housing schemes
7.	Bangladesh Water Development Board Act, 2000	Broad mandate of BWDB to control flood and river erosion and prevent drought and desertification can be utilized for Cities under such climatic threats	No specific reference to climate change and cities under peculiar climatic threats	In line with BCCSAP, the BWDB can develop action plans for Cities vulnerable to increased erosion, floods, desertification, and drought due to climatic changes
8.	Embankment and Drainage Act, 1952	Do	Do	Do
9.	Act No. 36 of 2000	Can effectively halt filling up of urban wetlands and require restoration	The positive impact of the law has not been felt due to poor implementation.	Highest political and institutional commitment is required to ensure that the fast disappearance of the urban wetlands are prevented and that the natural resilience to climatic changes are not hampered.
10.	Bangladesh Environment Conservation Act, 1995	Can effectively halt filling up of wetlands and require restoration	The positive impact of the provision of the law on wetland protection has not been felt due to poor implementation.	Highest political and institutional commitment is required to ensure that the indiscriminate conversion of wetlands are prevented and that the natural resilience to climatic changes are not hampered.
11.	Water and Sewerage Authorities Act, 1996	Broad mandate to manage and supply city waters can be utilized for better preparedness against climatic stress	No visible preparedness against existing water scarcity suggests more challenges for the WASAs in changed climatic scenarios	WASA should disclose information on water availability and emphasize on alternative water supplies, e.g. rain water harvesting and recycling
13.	Bangladesh Water Act, 2013	Broad mandate over all water sources can be utilized for better preparedness against climatic stress; Climate affected people may avail the special benefits of Water	Extremely bureaucratic and lacks needed de-centralization;	The Executive Committee should have specific focus on urban water crisis and immediately draw action plans to address the same through local governments; The

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Sl. No.	Name of Laws	Strengths	Gaps	Comments
		Stress Areas; the National Water Resource Plan to be prepared can specifically address urban water issues against climatic threats		National Water Resource Plan to be prepared under the Act should specifically address urban water issues against climatic threats
14.	National River Protection Commission Act, 2013	The yearly reports to be provided to the government on the status of rivers and other natural wetlands can serve as important information in planning for water supplies in city areas	The Commission lacks enforcement powers and has failed to produce a single report since its journey in 2013	In preparing reports, the Commission should emphasize on the rivers and wetlands of cities already faced with scarcity of potable water
15.	Local Government (City Corporation) Act, 2009	Responsibilities include sectors likely to be affected by climate change; specific standing committee on disaster management; scope to address urban resilience in the five year plans to be developed	No specific reference to climate change; functions with regard to building construction, afforestation, waste management are very narrow and not reflective of BCCSAP	The provisions on natural disaster management should be revisited to specifically mention climate change; the BCCSAP recommendation on climate resilient urban development should form part of responsibility of the CCs and should be reflected in the plans
16.	Local Government (Paurashava) Act, 2009	Scope to incorporate climatic considerations in the Master Plans, and to broaden the functions of the Standing Committees on Town Planning, Civic Service, and Development to address the concerns of BCCSAP	No specific reference to climate change; Functions related to 'Disaster Management' are narrow; no reference to special needs of more vulnerable areas	The provisions on disaster management should be revisited to specifically mention climate change; the BCCSAP recommendation on climate resilient urban development should form part of responsibility of the Paurashavas and should be reflected in the Master Plans with focus on specific climatic challenges of given Paurashavas
17.	Rajshahi Town Development Authority Ordinance, 1976	Scope to mainstream climate change issues in the Master Plan	No reference to climate change in the development planning functions	Master Plan should be revisited to address the concerns of BCCSAP
18.	Khulna Development Authority Ordinance, 1961	Scope to mainstream climate change issues in the Master Plan	No reference to climate change in the development planning functions	Master Plan should be revisited to address the concerns of BCCSAP
19.	Chittagong Development Authority Ordinance, 1959	Scope to mainstream climate change issues in the Master Plan	No reference to climate change in the development planning functions	Master Plan should be revisited to address the concerns of BCCSAP
20.	Sustainable and Renewable	Some functions of SHREDA can promote	No specific reference to arresting carbon	The functions of SHREDA should be

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Sl. No.	Name of Laws	Strengths	Gaps	Comments
.	Energy Development Authority Act, 2012	the BCCSAP recommendation on following 'low carbon development path'	intensive urban development	performed in coordination with Rajuk and other town authorities so that urban laws are amended to require climate resilient, eco-friendly buildings and infrastructure

The above discussion makes it clear that the laws on urban management and development and the urban plans largely failed to address climate change concerns. Similarly the laws and standing orders on disaster management have also not dealt separately with climate change. While some general provisions of few existing laws can be used to incorporate/integrate climate change considerations into bylaws, strategies, and plans, the general observation is that laws in most urban sectors need to be reviewed and amended to insert clauses on climate change and to ensure their compatibility with the BCCSAP. Similarly, institutional arrangements of BCCSAP and the urban legislations need to be reviewed to ensure that they are mutually supportive and focus on climate change while planning for disaster management, urban development, land management, and urban services.

In the context of the prevailing limitations in the urban laws to mainstream climate change, the following specific recommendations may be made so that the existing laws are updated and /or prevailing legal provisions utilized in initiating climate mainstreaming in urban planning and development-

- The Disaster Management Act, 2012 should be revisited to incorporate specific recommendations of the BCCSAP with regard to climate resilient cities.
- In line with the BCCSAP, all Master Plans, Improvement Schemes, and New Township Development/Urban Area Development Plans to be prepared under the existing laws should ensure development of climate resilient cities.
- The mandates of the urban local government agencies on disaster management, urban planning, and utility and service delivery should be more empowering (with required decentralization and avoidance of overlapping) to allow planning on climate change adaptation and mitigation in line with or even beyond the recommendations of BCCSAP.
- In funding projects, the Trust Fund should specifically emphasis on mitigation and adaptation challenges for the major cities in changed climatic scenario.
- Laws on services and utilities should be revised to provide for specific targets for mitigation and low carbon paths as envisaged in BCCSAP.
- Enabling bylaws are required to create legal force in favour of innovative solutions like rain water harvesting, recycling, community renewable power generations, and so on.

Chapter 6: Ways to Mainstream Climate Change into Urban Development and Planning

The rate of urbanization is fastest in Bangladesh compared to its neighbors in South Asia between the period 2000 and 2010. The urbanization rate (1.69%) in this period is on par with pace of urbanization experienced by today's developed countries in the late 19th century (Ellis, P. and Roberts, M., 2016). A major driver of urbanization is migration (Black et al., 2013). Studies showed that climate change is one of the agents of migration in Bangladesh (Warner and Afifi, 2014; Hassani-Mahmooei and Parris, 2012; Piguet, 2012). The issue of addressing the needs of growing urban population particularly the disaster induced migrants is a major challenge for urban development. Besides uncontrolled urban growth, the susceptibility of disaster in urban areas is also increasing through urban flooding, heat stress etc. Inclusion of Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) strategies in the policies and plans of urbanization, required to be the preliminary step for reducing urban vulnerabilities.

6.1 Linkage between climate change strategies with national sectoral policies, plans, acts and rules

This research reviewed 35 policy documents, plans, acts and rules and evaluated them in the light of stated programs and policies relevant to urban areas in BCCSAP 2009 and NAPA 2009. Figure 6.1 shows the level of relationship among the strategies mentioned in BCCSAP 2009 and NAPA 2009 with the national strategic documents, policy papers, plans, acts and rules. Many of these documents were prepared before the adoption of BCCSAP 2009 and NAPA 2009 (Figure 6.1). It is evident from Figure 6.1 that these documents have significant gaps regarding inclusion of climate change impacts related issues. Though there are exceptions (for example Water Policy 1999) which addressed many aspects of climate change. In general, all relevant policies that are formulated before 2009 needed to be reviewed and updated with the goal of main streaming climate change impacts. In addition some of the recent document also needed to be revised. It needs to be kept in mind that plans, acts and rules are the implementation modes for the policy. Moreover, there are no legal bindings regarding implementation of policy guidelines. As a consequence BCCSAP 2009 NAPA 2009 and INDC 2015 has no legal basis. Only a number of issues of BCCSAP 2009 and NAPA 2009 got legal coverage under Climate change Trust Act. Thus the mainstreaming of climate change policies and strategies still has hurdles from legal perspectives. On the

other hand, acts, rules and often plans are the legal instruments to ensure implementation of policies and strategies. It is clearly evident from the Table 4.1, 4.2, 4.3, 4.4,4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11 and 4.12 that there exist a significant number of policies at national sectoral levels but these policies are not supported with required plans, acts and rules. Particularly at local level mainstreaming of climate change is only possible through formulation of necessary plans, acts and rules.

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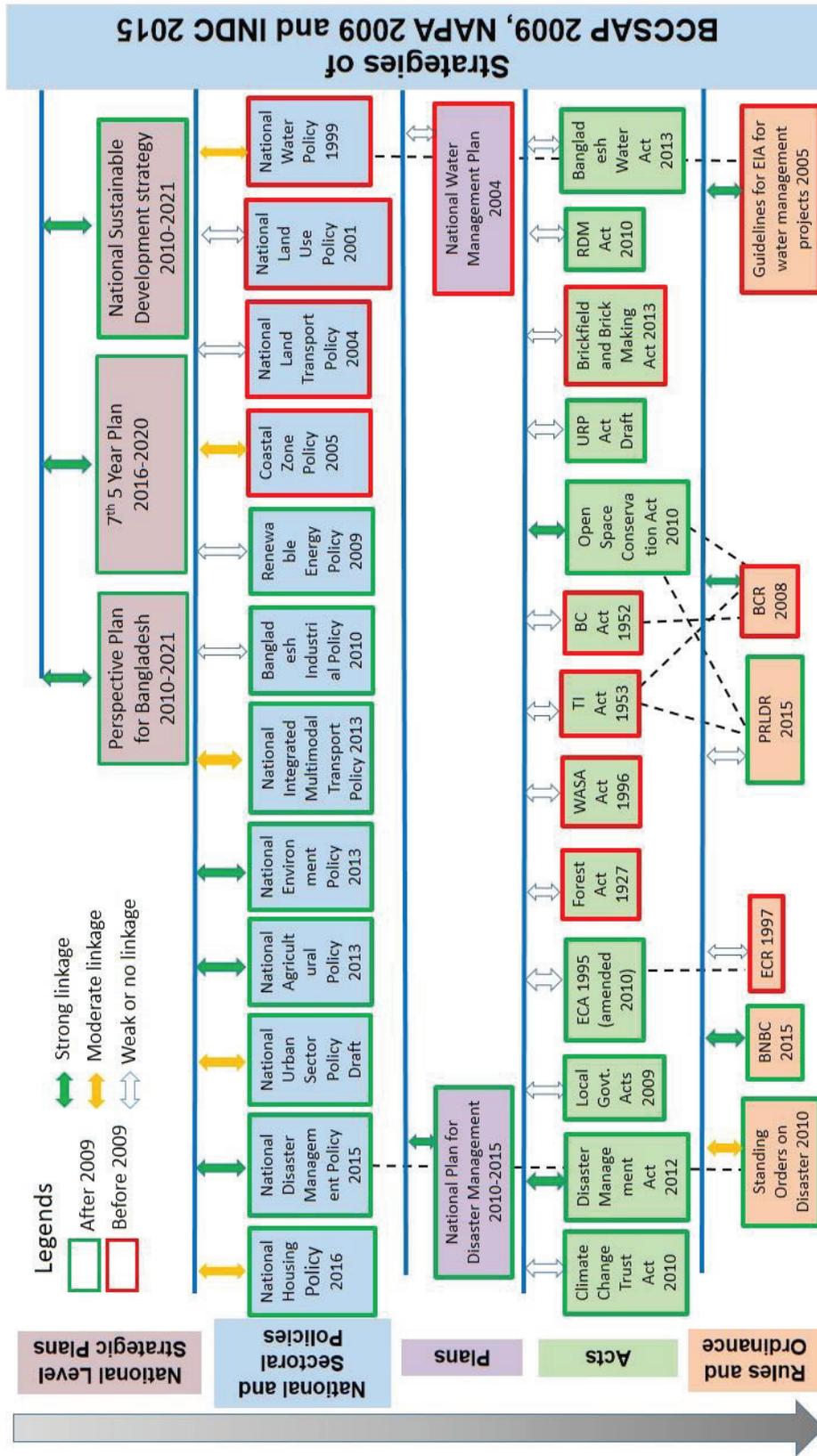


Figure 6.1: Linkage between Policies, Plans, Acts and Rules with Strategies of BCCSAP 2009, NAPA 2009 and INDC 2015

Source: Authors, 2017

6.2 Integration of DRR and CCA

In Bangladesh more than 75 % of all disasters originate in weather–climate extreme (Islam and Sumon, 2013). Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) strategies are both aimed at enhancing sustainability, resilient societies and human security and share similar sectoral focus, complexities and challenges, relying on same type of measures and policies (e.g. Water Policy, Coastal Zone Policy, and Five Year Plan etc.). But it is evident from the review of documents that DRR and CCA are often separately addressed both from policy and institutional perspectives. For example, BCCSAP 2009 suggested Climate Change Focal Points in each concerned ministries to act as a focal body to regulate and implement Climate Change related projects. On the other hand, Standing Order on Disaster (SOD) also introduces Disaster Management Focal Points in each of the concerned ministry to address DRR and Emergency Response during disaster. Both DRR and CCA can be addressed under a single Focal Point to act on both Climate Change and Disaster related issues.

6.3 Local Level Planning and Development

It is worth mentioning that there are about 332 urban local governments in the country (BBS, 2015). These entities can play significant role in mainstreaming climate change and disaster management at local level. Local Government Acts empowered City Corporation and *Pourashava* to prepare its own master plan. These institutes are also responsible for regulating building construction and land development. The schedules of the Local Government Acts (Schedule 3, Section 16 of Local Govt. (City Corporation) Act and Schedule 2 Section 32 of Local Govt. (*Pourashava*) Act prescribed to follow the Rules applicable for the respective Master Plan Area. It needs to be noted that a significant number of *Pourashavas* and City Corporations do not have any master plan yet. The National Urban and Regional Planning Act is still in the process of approval, as a result they are not equipped with legal tools to prepare their own master plan. Again, Master Plan has been prepared for some City Corporations and *Pourashavas* but they did not formulated necessary rules to implement the Master Plan particularly to regulate land development and building construction.

Park, Playground, Open Space and Natural Water body Conservation Act, 2000 is applicable for all urban areas of Bangladesh. In the absence of master plan, Local Government institutions can enforce this Act to conserve the natural resource areas. It has to be kept in

mind that land development and construction activities are taking place at a very fast pace in urban areas outside major cities. Unplanned development without consideration of disaster risk reduction strategies would put life, livelihood and property at danger.

As the local government is entrusted for approval and monitoring of building construction and land use development thus they can play significant role to ensure mainstreaming of climate change strategies at local and plot level such as in site planning, conservation of water body, reduction of non-permeable surface, greening of sites etc.

Local Government institutions are also responsible for management of drainage, waste disposal, public health and plantation. There is wide scope of inclusion of strategies of BCCSAP and NAPA through these activities. The strategies mentioned in BCCSAP 2009 and NAPA 2009 needed to be incorporated in master plan documents and rules at local level. One of the important issues of planning is participation of local people at different phases of plan preparation, implementation and monitoring which is missing in the Local Government Acts.

6.4 DRR and Climate Change Mainstreaming at Local Level

6.4.1 Disaster Management Committee

According to SOD the *Pourashava*/City Corporation Disaster Management Committee (DMC) is one of the Local level Coordination Committee to carry out all activities (prevention, mitigation, preparedness and response and relief) on disaster management. Mayor of the *Pourashava*/City Corporation is the Chairperson of the *Pourashava* DMC. Concerned Honorable Member of the Parliament will be the advisor of this committee. DMC can adopt specific programs to address climate change issues of their locality. This committee can undertake climate change adaptation and mitigation strategies at local level planning and building construction. It needs to work in close association with the committee on Urban Planning and Development as mentioned in Local Government Acts. At present, climate change adaptation strategies are not included in the purview DMC. The responsibility and activities of this committee required to be revised. It is interesting to note that Local Government (City Corporation) Act has provision for DMC but Disaster Management Committee is not included in Local Government (*Pourashava*) Act. Thus it is necessary to include DMC at Local Government (*Pourashava*) Act.

6.4.2 Local Level Standing Committees on Planning and Development

Local Government Acts prescribed two standing committees (Urban Planning Citizen Service and Development Committee and Communication and Physical Infrastructure Committee) to monitor and review planning and development activities at local level. But the specific role and function of these committees are not defined in the Acts. Though there is directive to prepare needed rules but it is not adopted yet as a result these committees are often non-functional.

6.5 Issues of Implementation

Success of policies, plans and acts are dependent on efficient implementation. So approval of building construction and land use permission process needed to be efficient, transparent and accountable. Most of the local government institutions do not have any well designed approval mechanism. In most cases this is done on ad-hoc basis. Moreover these institutions do not have skilled professionals and logistics support to carry on their approval and monitoring process.

6.6 Conclusion

The analysis presented in this review report clearly states that there is significant scope of revision, modification and adoption of plans, acts and rules to incorporate strategies mentioned in BCCSAP 2009, NAPA 2009 and INDC, 2015. In addition the institutional capacity building, restructuring and reforming is also necessary. Most of the urban local bodies do not enough required number of planners, architects and engineers to carry on the assigned responsibilities.

Fifth IPCC report has been published in 2014. The report included on some emerging cross cutting issues such as migration and others. In such a context, BCSAP 2009 and NAPA 2009 also needs revision.

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Appendix A

Final list of documents as agreed by the participants of First Stakeholder Workshop

Final List of Documents	
Policy	
1.	National Environmental Policy 1992
2.	National Water Policy, 1999
3.	National Land Use Policy, 2001
4.	Renewable Energy Policy of Bangladesh, 2002
5.	Coastal Zoning Policy, 2005
6.	National Agricultural Policy, 2010
7.	Bangladesh Industrial Policy, 2010
8.	National Urban Sector Policy
9.	National Disaster Management Policy 2015
10.	National Housing Policy, 2016
11.	Rural Housing Policies in Disaster Prone Areas (Draft)
12.	National Land Transport Policy 2004
Plan	
1.	National Water Management Plan: Development Strategy, 2001
2.	National Adaptation Programme of Action (NAPA) 2005
3.	Bangladesh Climate Change Strategy and Action Plan 2009
4.	National Plan for Disaster Management, 2010-2015
5.	Perspective Plan for Bangladesh (2010-2021)
6.	6 th Five Year Plan (2011-2015)
7.	The Bangladesh Delta Plan, 2014
8.	7 th Five Year Plan (2015-2019)
Acts/ Government Orders	
1.	The Building Construction Act, 1952
2.	Town Improvement Act, 1953
3.	The Environment Conservation Act, 1995
4.	Standing Orders on Disaster 1996
5.	Park, Playground, Open Space and Natural Water Body Conservation Act, 2000
6.	Local Govt. (Pourashava) Act, 2009
7.	Local Govt. (City Corporation) Act, 2009
8.	Real Estate Development and Management Act 2010
9.	Disaster Management Act, 2012
10.	Bangladesh Water Act, 2013
11.	Fire Services Act, 2013
12.	Brick Making and Brick Field Establishment (Control) Act 2013
13.	Climate Change Trust Act, 2010
14.	Urban and Regional Planning Act (Draft)
15.	Biodiversity Act (Draft)
Rules	
1.	The Environment Conservation Rules, 1997
2.	Guidelines for Environmental Assessment of Water Management (Flood Control, Irrigation and Drainage) Projects, 2005
3.	ঢাকা মহানগর ইমারত (নির্মাণ, উন্নয়ন, সংরক্ষণ ও অপসারণ) বিধিমালা ২০০৮ (Dhaka Metropolitan Building (Construction, Development,

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Final List of Documents
Conservation and Removal) Rules 2008)
4. Preservation of Historical Buildings/Infrastructures/Important Locations (Published in Bangladesh Gazette on February 2009)
5. বেসরকারী আবাসিক প্রকল্পের ভূমি উন্নয়ন নীতিমালা, ২০১৫ (Private Residential Land Development Rules 2015)
6. Bangladesh National Building Code (Draft)
7. Ecologically Critical Area Rules (Draft)

Appendix B

BCCSAP PROGRAMMES	
Theme	T1: Food Security, Social Protection and Health
Programme	P1. Institutional capacity for research towards climate resilient cultivars and their dissemination P2. Development of climate resilient cropping systems P3. Adaptation against drought P4. Adaptation in fisheries sector P5. Adaptation in livestock sector P6. Adaptation in health sector P7. Water and sanitation programme in climate vulnerable areas P8. Livelihood protection in ecologically fragile areas P9. Livelihood protection of vulnerable socio-economic groups (including women)
Theme	T2: Comprehensive Disaster Management
Programme	P1. Improvement of flood forecasting and early warning P2. Improvement of cyclone and storm surge warning P3. Awareness raising and public education towards climate resilience P4. Risk management against loss on income and property
Theme	T3 : Infrastructure
Programme	P1. Repair and maintenance of existing flood embankments P2. Repair and maintenance of cyclone shelters P3. Repair and maintenance of existing coastal polders P4. Improvement of urban drainage P5. Adaptation against Floods P6. Adaptation against tropical cyclones and storm surges P7. Planning and design of river training works P8. Planning, design and implementation of resuscitation of river and khals through dredging and de-siltation work
Theme	T4: Research and Knowledge Management
Programme	P1. Establishment of a centre for knowledge management and training on climate change P2. Climate change modelling at national and sub-national levels P3. Preparatory studies for adaptation against sea level rise P4. Monitoring of ecosystem and biodiversity changes and their impacts P5. Macroeconomic and sectoral economic impacts of climate change P6. Monitoring of internal and external migration of adversely impacted population and providing support to them through capacity building for their rehabilitation in new environment P7. Monitoring of impact on various issues related to management of tourism in Bangladesh and implementation in priority action plan
Theme	T5: Mitigation and Low Carbon Development
Programme	P1. Improved energy efficiency in production and consumption of energy P2. Gas exploration and reservoir management P3. Development of coal mines and coal fired power stations P4. Renewable energy development P5. Lower emission from agricultural land P6. Management of urban waste P7. Afforestation and reforestation programme P8. Rapid expansion of energy saving devices eg. Compact Florescent Lamps (CFL) P9. Energy and Water Efficiency in Built Environment P10. Improvement in energy consumption pattern in transport sector and options for mitigation
Theme	T6: Capacity Building and Institutional Strengthening
Programme	P1. Revision of sectoral policies for climate resilience P2. Main-streaming climate change in national, sectoral and spatial development programmes P3. Strengthening human resource capacity P4. Strengthening gender consideration in climate change management P5. Strengthening institutional capacity for climate change management P6. Main-streaming climate change in the Media

Appendix C

Possible Adaptation Measures of NAPA

A. Research and Knowledge Management

1. Develop climate change scenarios for Bangladesh by applying global climate change models and methodologies at regional and national levels
2. Design and develop models for likely hydrological impacts of climate change on the Ganges-Brahmaputra-Meghna system and to assess likely future system discharges and river levels in order to derive design criteria for flood protection embankments
3. Monitor and research the impacts of climate change on ecosystems and biodiversity
4. Research the likely impacts of climate change on the macro-economy of Bangladesh (a Bangladesh 'Stern Report') and key sectors (e.g., livelihoods and food security) and contribute to developing a climate proof national development plan.
5. Research the linkages between (a) climate change and poverty; and (b) climate change, poverty and health (disease incidence, nutrition, water, and sanitation) in order to identify possible interventions to increase the resilience of poor and vulnerable households to climate change
6. Filling the Climate Change Knowledge Gap for Water Resources Planning, designing and implementation of project
7. Establish a Centre for Research and Knowledge Management on Climate Change (or a network of centres) to ensure Bangladesh has access to the latest ideas and technologies from around the world, and ensure that data is widely and freely available to researchers

B. Agriculture, Fisheries and Livestock

1. Develop climate change resilient cropping systems (e.g., agricultural research to develop crop varieties, which are tolerant of flooding, drought and salinity, and based on indigenous and other varieties suited to the needs of resource poor farmers), fisheries and livestock systems to ensure local and national food security
2. Introduce and scale up existing innovative technologies to deal with flood, drought and salinity such as maize production under wet bed no-tillage method, no-tillage potato

cultivation under water hyacinth mulch in wet sown condition, vegetable systems of cropping in tidally flooded agro-ecosystem etc.

3. Development and protection of dry season fish refuges for sustainable management of fisheries through community husbandry in the northwestern part of Bangladesh
4. Adaptation of fish culture techniques to increased flood levels and diversification of aquaculture techniques in the flood- prone north central region of Bangladesh
5. Adaptation to flood on freshwater wetlands (beel) fisheries with special emphasis to recruitment of small indigenous fish species
6. Adaptive measures for the fisheries resources with the impacts of climatic changes in the coastal ecosystem of Bangladesh
7. Adaptive measures to reduce stresses in ruminants and poultry due to temperature extremes through housing and management systems
8. Improvement in the supply of feeds and forages through community based production and conservation for feeding livestock and poultry in case of flood, drought, salinity and tidal surges

C. Health

1. Implement surveillance systems for existing and new disease risks and ensure health systems are geared up to meet future demands
2. Development of Strategy for Alternative Sources of Safe Drinking Water and Sanitation Programme in areas at risk from climate change (e.g., coastal areas, flood-and drought-prone areas)
3. Awareness and Behavioral Change and Communication for Climate Change related Health Problems

D. Building Climate Resilient Infrastructure

1. Repair and rehabilitate existing infrastructure (e.g., coastal embankments, river embankments and drainage systems, urban drainage systems) and ensure effective operation and maintenance systems

2. Plan, design and construct urgently needed new infrastructure (e.g., cyclone shelters, coastal and river embankments and water management systems; urban drainage systems, river erosion control works, flood shelters) to meet the changing conditions expected with climate change
3. Undertake strategic planning of future infrastructure needs, taking into account the likely (a) future patterns of urbanization and socio-economic development; and (b) the changing hydrology of the country, because of climate change
4. Particular Specification in National Building Code for building industry and infrastructure in potentially vulnerable areas

E. Disaster Management

1. Strengthen the government's capacity and that of civil society partners and communities to manage natural disasters, and ensure that appropriate policies, laws and regulations are in place
2. Strengthen community-based adaptation programmes and establish them in each of the disaster prone parts of the country
3. Strengthen our cyclone, storm surge and flood early warning systems to enable more accurate short, medium and long-term forecasts
4. Incorporation of Climate Change Considerations in Standing Order for Disaster (SOD) Preparedness in Bangladesh
5. Coastal afforestation Programme in the Coastal Region to protect natural and human system from cyclone and storm surges

F. Livelihood

1. Increase the resilience of vulnerable groups, including women and children, through development of community level adaptation, livelihood diversification, better access to basic services and social protection (e.g., safety nets, insurance) and scaling up

G. Biodiversity

1. Undertake Community Participated Afforestation Programme in all the regions of the country to improve natural environment and to enhance livelihood of common people.

2. The Sundarbans (the World Heritage Site) receive special attention to preserve and to enhance its biodiversity on a sustainable basis
3. Changes of land-use system and crop diversity with resilient varieties of rice and other crops

H. Policy and Institutional Capacity Building

1. Review and revise, where appropriate, all government policies (sector by sector) to ensure that they take full account of climate change and its impacts
2. Mainstream climate change in national, sectoral and spatial development planning (in government ministries and agencies, local government, the private sector, civil society and communities) and ensure that impacts on vulnerable groups and women are prioritized in plans
3. Build the capacity of key government ministries and agencies to take forward climate change adaptation (e.g., Ministry of Food and Disaster Management, Bangladesh Water Development Board, Local Government Engineering Department; National Agricultural Research System, the health system, the Ministry of Women's and Children's Affairs)
4. Build the capacity of the government to undertake international and regional negotiations on climate change. Regional and international cooperation is essential in order to build necessary capacity and resilience
5. Capacity Development for Water Sector Managers for Designing Structural Adaptation
6. Development of Negotiating Instruments for Sustainable Drainage Systems
7. Formulation of Land and Water Zonation for Climate Change Adaptation in Bangladesh

Appendix D

Table 1: Climate Change Intervention Program Area Relevant to Urban Planning according to BCCCAP 2009

<i>Pillar 1: Food Security, Social Protection and Health</i>
1. Adaptation in health Sector
2. Water and sanitation program in climate vulnerable areas.
3. Livelihood Protection in ecologically fragile areas.
4. Livelihood protection of vulnerable socio-economic groups (including women).
<i>Pillar 2: Comprehensive Disaster Management</i>
1. Awareness raising and Public Education towards climate resilience
2. Risk management against loss on income and property.
<i>Pillar 3: Infrastructure</i>
1. Improvement of urban drainage.
2. Adaptation against flood.
3. Adaptation against tropical cyclones and storm surges
4. Planning, design and implementation of resuscitation of river and khals through drainage and de-siltation work.
<i>Pillar 4: Research and Knowledge Management</i>
1. Climate change modelling at national and sub-national level
2. Macroeconomic and sectoral economic impacts of climate change
3. Monitoring of internal and external migration of adversely impacted population and providing support to them through capacity building for their rehabilitation in new environments.
<i>Pillar 5: Mitigation and Low Carbon Development</i>
1. Renewable energy development.
2. Management of urban waste.
3. Energy and Water Efficiency in Built Environment.
4. Improvement in energy consumption pattern in transport sector and options for mitigation.
<i>Pillar 6: Capacity Building and Institutional Strengthening</i>
1. Revision of sectoral policies for climate resilience.
2. Main-streaming climate change in national, sectoral and spatial development program.
3. Strengthening human resource capacity
4. Strengthening gender consideration in climate change management.
5. Strengthening institutional capacity for climate change management.

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Table 2: Climate Change Intervention Program Area Relevant to Urban Planning according to NAPA 2009

1. Enhancing resilience of urban infrastructure and industries to impacts of climate change including floods and cyclone
2. Formulation of land zonation for climate change adaptation in Bangladesh
3. Research towards land management
4. Identification of local hotspots for more targeted intervention
5. Particular Specification in National Building Code for building industry and infrastructure in potentially vulnerable areas
6. Strengthen capacities for risk assessment for flood, cyclone, drought, river bank erosion, pest attacks, earthquake, epidemics , including assessment of climate change risk

Table 3: Climate Change Intervention Program Area Relevant to Urban Planning according to INDC 2015

1. Food security, livelihood and health protection (incl. water security)
2. Comprehensive disaster management
3. Coastal Zone Management including Salinity Intrusion control
4. Flood Control and Erosion protection
5. Building Climate Resilient Infrastructure
6. Increased Rural Electrification
7. Enhanced Urban Resilience
8. Ecosystem based adaptation (including forestry co-management)
9. Community based conservation of wetlands and coastal areas
10. Policy and Institutional Capacity Building

Appendix E

KYOTO PROTOCOL TO THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE



UNITED NATIONS

1998

**KYOTO PROTOCOL TO THE UNITED NATIONS FRAMEWORK
CONVENTION ON CLIMATE CHANGE**

The Parties to this Protocol,

Being Parties to the United Nations Framework Convention on Climate Change, hereinafter referred to as “the Convention”,

In pursuit of the ultimate objective of the Convention as stated in its Article 2,

Recalling the provisions of the Convention,

Being guided by Article 3 of the Convention,

Pursuant to the Berlin Mandate adopted by decision 1/CP.1 of the Conference of the Parties to the Convention at its first session,

Have agreed as follows:

Article 1

For the purposes of this Protocol, the definitions contained in Article 1 of the Convention shall apply. In addition:

1. “Conference of the Parties” means the Conference of the Parties to the Convention.
2. “Convention” means the United Nations Framework Convention on Climate Change, adopted in New York on 9 May 1992.
3. “Intergovernmental Panel on Climate Change” means the Intergovernmental Panel on Climate Change established in 1988 jointly by the World Meteorological Organization and the United Nations Environment Programme.
4. “Montreal Protocol” means the Montreal Protocol on Substances that Deplete the Ozone Layer, adopted in Montreal on 16 September 1987 and as subsequently adjusted and amended.
5. “Parties present and voting” means Parties present and casting an affirmative or negative vote.
6. “Party” means, unless the context otherwise indicates, a Party to this Protocol.
7. “Party included in Annex I” means a Party included in Annex I to the Convention, as may be amended, or a Party which has made a notification under Article 4, paragraph 2 (g), of the Convention.

Article 2

1. Each Party included in Annex I, in achieving its quantified emission limitation and reduction commitments under Article 3, in order to promote sustainable development, shall:

- (a) Implement and/or further elaborate policies and measures in accordance with its national circumstances, such as:
- (i) Enhancement of energy efficiency in relevant sectors of the national economy;
 - (ii) Protection and enhancement of sinks and reservoirs of greenhouse gases not controlled by the Montreal Protocol, taking into account its commitments under relevant international environmental agreements; promotion of sustainable forest management practices, afforestation and reforestation;
 - (iii) Promotion of sustainable forms of agriculture in light of climate change considerations;
 - (iv) Research on, and promotion, development and increased use of, new and renewable forms of energy, of carbon dioxide sequestration technologies and of advanced and innovative environmentally sound technologies;
 - (v) Progressive reduction or phasing out of market imperfections, fiscal incentives, tax and duty exemptions and subsidies in all greenhouse gas emitting sectors that run counter to the objective of the Convention and application of market instruments;
 - (vi) Encouragement of appropriate reforms in relevant sectors aimed at promoting policies and measures which limit or reduce emissions of greenhouse gases not controlled by the Montreal Protocol;
 - (vii) Measures to limit and/or reduce emissions of greenhouse gases not controlled by the Montreal Protocol in the transport sector;
 - (viii) Limitation and/or reduction of methane emissions through recovery and use in waste management, as well as in the production, transport and distribution of energy;

(b) Cooperate with other such Parties to enhance the individual and combined effectiveness of their policies and measures adopted under this Article, pursuant to Article 4, paragraph 2 (e) (i), of the Convention. To this end, these Parties shall take steps to share their experience and exchange information on such policies and measures, including developing ways of improving their comparability, transparency and effectiveness. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session or as soon as practicable thereafter, consider ways to facilitate such cooperation, taking into account all relevant information.

2. The Parties included in Annex I shall pursue limitation or reduction of emissions of greenhouse gases not controlled by the Montreal Protocol from aviation and marine bunker fuels, working through the International Civil Aviation Organization and the International Maritime Organization, respectively.

3. The Parties included in Annex I shall strive to implement policies and measures under this Article in such a way as to minimize adverse effects, including the adverse effects of climate change, effects on international trade, and social, environmental and economic impacts on other Parties, especially developing country Parties and in particular those identified in Article 4, paragraphs 8 and 9, of the Convention, taking into account Article 3 of the Convention. The Conference of the Parties serving as the meeting of the Parties to this Protocol may take further action, as appropriate, to promote the implementation of the provisions of this paragraph.
4. The Conference of the Parties serving as the meeting of the Parties to this Protocol, if it decides that it would be beneficial to coordinate any of the policies and measures in paragraph 1 (a) above, taking into account different national circumstances and potential effects, shall consider ways and means to elaborate the coordination of such policies and measures.

Article 3

1. The Parties included in Annex I shall, individually or jointly, ensure that their aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A do not exceed their assigned amounts, calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B and in accordance with the provisions of this Article, with a view to reducing their overall emissions of such gases by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012.
2. Each Party included in Annex I shall, by 2005, have made demonstrable progress in achieving its commitments under this Protocol.
3. The net changes in greenhouse gas emissions by sources and removals by sinks resulting from direct human-induced land-use change and forestry activities, limited to afforestation, reforestation and deforestation since 1990, measured as verifiable changes in carbon stocks in each commitment period, shall be used to meet the commitments under this Article of each Party included in Annex I. The greenhouse gas emissions by sources and removals by sinks associated with those activities shall be reported in a transparent and verifiable manner and reviewed in accordance with Articles 7 and 8.
4. Prior to the first session of the Conference of the Parties serving as the meeting of the Parties to this Protocol, each Party included in Annex I shall provide, for consideration by the Subsidiary Body for Scientific and Technological Advice, data to establish its level of carbon stocks in 1990 and to enable an estimate to be made of its changes in carbon stocks in subsequent years. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session or as soon as practicable thereafter, decide upon modalities, rules and guidelines as to how, and which, additional human-induced activities related to changes in greenhouse gas emissions by sources and removals by sinks in the agricultural soils and the land-use change and forestry categories shall be added to, or subtracted from, the assigned amounts for Parties included in Annex I, taking into account uncertainties, transparency in reporting, verifiability, the methodological work of the Intergovernmental Panel on Climate Change, the advice provided by the Subsidiary Body for Scientific and Technological Advice in accordance with Article 5 and the decisions of the Conference of the Parties. Such a decision shall apply in the second and subsequent commitment periods. A Party may choose to apply such a decision on these additional human-induced activities for its first commitment period, provided that these activities have taken place since 1990.

5. The Parties included in Annex I undergoing the process of transition to a market economy whose base year or period was established pursuant to decision 9/CP.2 of the Conference of the Parties at its second session shall use that base year or period for the implementation of their commitments under this Article. Any other Party included in Annex I undergoing the process of transition to a market economy which has not yet submitted its first national communication under Article 12 of the Convention may also notify the Conference of the Parties serving as the meeting of the Parties to this Protocol that it intends to use an historical base year or period other than 1990 for the implementation of its commitments under this Article. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall decide on the acceptance of such notification.
6. Taking into account Article 4, paragraph 6, of the Convention, in the implementation of their commitments under this Protocol other than those under this Article, a certain degree of flexibility shall be allowed by the Conference of the Parties serving as the meeting of the Parties to this Protocol to the Parties included in Annex I undergoing the process of transition to a market economy.
7. In the first quantified emission limitation and reduction commitment period, from 2008 to 2012, the assigned amount for each Party included in Annex I shall be equal to the percentage inscribed for it in Annex B of its aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A in 1990, or the base year or period determined in accordance with paragraph 5 above, multiplied by five. Those Parties included in Annex I for whom land-use change and forestry constituted a net source of greenhouse gas emissions in 1990 shall include in their 1990 emissions base year or period the aggregate anthropogenic carbon dioxide equivalent emissions by sources minus removals by sinks in 1990 from land-use change for the purposes of calculating their assigned amount.
8. Any Party included in Annex I may use 1995 as its base year for hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride, for the purposes of the calculation referred to in paragraph 7 above.
9. Commitments for subsequent periods for Parties included in Annex I shall be established in amendments to Annex B to this Protocol, which shall be adopted in accordance with the provisions of Article 21, paragraph 7. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall initiate the consideration of such commitments at least seven years before the end of the first commitment period referred to in paragraph 1 above.
10. Any emission reduction units, or any part of an assigned amount, which a Party acquires from another Party in accordance with the provisions of Article 6 or of Article 17 shall be added to the assigned amount for the acquiring Party.
11. Any emission reduction units, or any part of an assigned amount, which a Party transfers to another Party in accordance with the provisions of Article 6 or of Article 17 shall be subtracted from the assigned amount for the transferring Party.
12. Any certified emission reductions which a Party acquires from another Party in accordance with the provisions of Article 12 shall be added to the assigned amount for the acquiring Party.

13. If the emissions of a Party included in Annex I in a commitment period are less than its assigned amount under this Article, this difference shall, on request of that Party, be added to the assigned amount for that Party for subsequent commitment periods.

14. Each Party included in Annex I shall strive to implement the commitments mentioned in paragraph 1 above in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention. In line with relevant decisions of the Conference of the Parties on the implementation of those paragraphs, the Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session, consider what actions are necessary to minimize the adverse effects of climate change and/or the impacts of response measures on Parties referred to in those paragraphs. Among the issues to be considered shall be the establishment of funding, insurance and transfer of technology.

Article 4

1. Any Parties included in Annex I that have reached an agreement to fulfil their commitments under Article 3 jointly, shall be deemed to have met those commitments provided that their total combined aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A do not exceed their assigned amounts calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B and in accordance with the provisions of Article 3. The respective emission level allocated to each of the Parties to the agreement shall be set out in that agreement.

2. The Parties to any such agreement shall notify the secretariat of the terms of the agreement on the date of deposit of their instruments of ratification, acceptance or approval of this Protocol, or accession thereto. The secretariat shall in turn inform the Parties and signatories to the Convention of the terms of the agreement.

3. Any such agreement shall remain in operation for the duration of the commitment period specified in Article 3, paragraph 7.

4. If Parties acting jointly do so in the framework of, and together with, a regional economic integration organization, any alteration in the composition of the organization after adoption of this Protocol shall not affect existing commitments under this Protocol. Any alteration in the composition of the organization shall only apply for the purposes of those commitments under Article 3 that are adopted subsequent to that alteration.

5. In the event of failure by the Parties to such an agreement to achieve their total combined level of emission reductions, each Party to that agreement shall be responsible for its own level of emissions set out in the agreement.

6. If Parties acting jointly do so in the framework of, and together with, a regional economic integration organization which is itself a Party to this Protocol, each member State of that regional economic integration organization individually, and together with the regional economic integration organization acting in accordance with Article 24, shall, in the event of failure to achieve the total combined level of emission reductions, be responsible for its level of emissions as notified in accordance with this Article.

Article 5

1. Each Party included in Annex I shall have in place, no later than one year prior to the start of the first commitment period, a national system for the estimation of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol. Guidelines for such national systems, which shall incorporate the methodologies specified in paragraph 2 below, shall be decided upon by the Conference of the Parties serving as the meeting of the Parties to this Protocol at its first session.
2. Methodologies for estimating anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol shall be those accepted by the Intergovernmental Panel on Climate Change and agreed upon by the Conference of the Parties at its third session. Where such methodologies are not used, appropriate adjustments shall be applied according to methodologies agreed upon by the Conference of the Parties serving as the meeting of the Parties to this Protocol at its first session. Based on the work of, *inter alia*, the Intergovernmental Panel on Climate Change and advice provided by the Subsidiary Body for Scientific and Technological Advice, the Conference of the Parties serving as the meeting of the Parties to this Protocol shall regularly review and, as appropriate, revise such methodologies and adjustments, taking fully into account any relevant decisions by the Conference of the Parties. Any revision to methodologies or adjustments shall be used only for the purposes of ascertaining compliance with commitments under Article 3 in respect of any commitment period adopted subsequent to that revision.
3. The global warming potentials used to calculate the carbon dioxide equivalence of anthropogenic emissions by sources and removals by sinks of greenhouse gases listed in Annex A shall be those accepted by the Intergovernmental Panel on Climate Change and agreed upon by the Conference of the Parties at its third session. Based on the work of, *inter alia*, the Intergovernmental Panel on Climate Change and advice provided by the Subsidiary Body for Scientific and Technological Advice, the Conference of the Parties serving as the meeting of the Parties to this Protocol shall regularly review and, as appropriate, revise the global warming potential of each such greenhouse gas, taking fully into account any relevant decisions by the Conference of the Parties. Any revision to a global warming potential shall apply only to commitments under Article 3 in respect of any commitment period adopted subsequent to that revision.

Article 6

1. For the purpose of meeting its commitments under Article 3, any Party included in Annex I may transfer to, or acquire from, any other such Party emission reduction units resulting from projects aimed at reducing anthropogenic emissions by sources or enhancing anthropogenic removals by sinks of greenhouse gases in any sector of the economy, provided that:
 - (a) Any such project has the approval of the Parties involved;
 - (b) Any such project provides a reduction in emissions by sources, or an enhancement of removals by sinks, that is additional to any that would otherwise occur;

(c) It does not acquire any emission reduction units if it is not in compliance with its obligations under Articles 5 and 7; and

(d) The acquisition of emission reduction units shall be supplemental to domestic actions for the purposes of meeting commitments under Article 3.

2. The Conference of the Parties serving as the meeting of the Parties to this Protocol may, at its first session or as soon as practicable thereafter, further elaborate guidelines for the implementation of this Article, including for verification and reporting.

3. A Party included in Annex I may authorize legal entities to participate, under its responsibility, in actions leading to the generation, transfer or acquisition under this Article of emission reduction units.

4. If a question of implementation by a Party included in Annex I of the requirements referred to in this Article is identified in accordance with the relevant provisions of Article 8, transfers and acquisitions of emission reduction units may continue to be made after the question has been identified, provided that any such units may not be used by a Party to meet its commitments under Article 3 until any issue of compliance is resolved.

Article 7

1. Each Party included in Annex I shall incorporate in its annual inventory of anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol, submitted in accordance with the relevant decisions of the Conference of the Parties, the necessary supplementary information for the purposes of ensuring compliance with Article 3, to be determined in accordance with paragraph 4 below.

2. Each Party included in Annex I shall incorporate in its national communication, submitted under Article 12 of the Convention, the supplementary information necessary to demonstrate compliance with its commitments under this Protocol, to be determined in accordance with paragraph 4 below.

3. Each Party included in Annex I shall submit the information required under paragraph 1 above annually, beginning with the first inventory due under the Convention for the first year of the commitment period after this Protocol has entered into force for that Party. Each such Party shall submit the information required under paragraph 2 above as part of the first national communication due under the Convention after this Protocol has entered into force for it and after the adoption of guidelines as provided for in paragraph 4 below. The frequency of subsequent submission of information required under this Article shall be determined by the Conference of the Parties serving as the meeting of the Parties to this Protocol, taking into account any timetable for the submission of national communications decided upon by the Conference of the Parties.

4. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall adopt at its first session, and review periodically thereafter, guidelines for the preparation of the information required under this Article, taking into account guidelines for the preparation of

national communications by Parties included in Annex I adopted by the Conference of the Parties. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall also, prior to the first commitment period, decide upon modalities for the accounting of assigned amounts.

Article 8

1. The information submitted under Article 7 by each Party included in Annex I shall be reviewed by expert review teams pursuant to the relevant decisions of the Conference of the Parties and in accordance with guidelines adopted for this purpose by the Conference of the Parties serving as the meeting of the Parties to this Protocol under paragraph 4 below. The information submitted under Article 7, paragraph 1, by each Party included in Annex I shall be reviewed as part of the annual compilation and accounting of emissions inventories and assigned amounts. Additionally, the information submitted under Article 7, paragraph 2, by each Party included in Annex I shall be reviewed as part of the review of communications.
2. Expert review teams shall be coordinated by the secretariat and shall be composed of experts selected from those nominated by Parties to the Convention and, as appropriate, by intergovernmental organizations, in accordance with guidance provided for this purpose by the Conference of the Parties.
3. The review process shall provide a thorough and comprehensive technical assessment of all aspects of the implementation by a Party of this Protocol. The expert review teams shall prepare a report to the Conference of the Parties serving as the meeting of the Parties to this Protocol, assessing the implementation of the commitments of the Party and identifying any potential problems in, and factors influencing, the fulfilment of commitments. Such reports shall be circulated by the secretariat to all Parties to the Convention. The secretariat shall list those questions of implementation indicated in such reports for further consideration by the Conference of the Parties serving as the meeting of the Parties to this Protocol.
4. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall adopt at its first session, and review periodically thereafter, guidelines for the review of implementation of this Protocol by expert review teams taking into account the relevant decisions of the Conference of the Parties.
5. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall, with the assistance of the Subsidiary Body for Implementation and, as appropriate, the Subsidiary Body for Scientific and Technological Advice, consider:
 - (a) The information submitted by Parties under Article 7 and the reports of the expert reviews thereon conducted under this Article; and
 - (b) Those questions of implementation listed by the secretariat under paragraph 3 above, as well as any questions raised by Parties.
6. Pursuant to its consideration of the information referred to in paragraph 5 above, the Conference of the Parties serving as the meeting of the Parties to this Protocol shall take decisions on any matter required for the implementation of this Protocol.

Article 9

1. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall periodically review this Protocol in the light of the best available scientific information and assessments on climate change and its impacts, as well as relevant technical, social and economic information. Such reviews shall be coordinated with pertinent reviews under the Convention, in particular those required by Article 4, paragraph 2 (d), and Article 7, paragraph 2 (a), of the Convention. Based on these reviews, the Conference of the Parties serving as the meeting of the Parties to this Protocol shall take appropriate action.

2. The first review shall take place at the second session of the Conference of the Parties serving as the meeting of the Parties to this Protocol. Further reviews shall take place at regular intervals and in a timely manner.

Article 10

All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, without introducing any new commitments for Parties not included in Annex I, but reaffirming existing commitments under Article 4, paragraph 1, of the Convention, and continuing to advance the implementation of these commitments in order to achieve sustainable development, taking into account Article 4, paragraphs 3, 5 and 7, of the Convention, shall:

(a) Formulate, where relevant and to the extent possible, cost-effective national and, where appropriate, regional programmes to improve the quality of local emission factors, activity data and/or models which reflect the socio-economic conditions of each Party for the preparation and periodic updating of national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the Conference of the Parties, and consistent with the guidelines for the preparation of national communications adopted by the Conference of the Parties;

(b) Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change:

- (i) Such programmes would, *inter alia*, concern the energy, transport and industry sectors as well as agriculture, forestry and waste management. Furthermore, adaptation technologies and methods for improving spatial planning would improve adaptation to climate change; and
- (ii) Parties included in Annex I shall submit information on action under this Protocol, including national programmes, in accordance with Article 7; and other Parties shall seek to include in their national communications, as appropriate, information on programmes which contain measures that the Party believes contribute to addressing climate change and its adverse impacts, including the abatement of increases in greenhouse gas emissions, and enhancement of and removals by sinks, capacity building and adaptation measures;

(c) Cooperate in the promotion of effective modalities for the development, application and diffusion of, and take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies, know-how, practices and processes pertinent to climate change, in particular to developing countries, including the formulation of policies and programmes for the effective transfer of environmentally sound technologies that are publicly owned or in the public domain and the creation of an enabling environment for the private sector, to promote and enhance the transfer of, and access to, environmentally sound technologies;

(d) Cooperate in scientific and technical research and promote the maintenance and the development of systematic observation systems and development of data archives to reduce uncertainties related to the climate system, the adverse impacts of climate change and the economic and social consequences of various response strategies, and promote the development and strengthening of endogenous capacities and capabilities to participate in international and intergovernmental efforts, programmes and networks on research and systematic observation, taking into account Article 5 of the Convention;

(e) Cooperate in and promote at the international level, and, where appropriate, using existing bodies, the development and implementation of education and training programmes, including the strengthening of national capacity building, in particular human and institutional capacities and the exchange or secondment of personnel to train experts in this field, in particular for developing countries, and facilitate at the national level public awareness of, and public access to information on, climate change. Suitable modalities should be developed to implement these activities through the relevant bodies of the Convention, taking into account Article 6 of the Convention;

(f) Include in their national communications information on programmes and activities undertaken pursuant to this Article in accordance with relevant decisions of the Conference of the Parties; and

(g) Give full consideration, in implementing the commitments under this Article, to Article 4, paragraph 8, of the Convention.

Article 11

1. In the implementation of Article 10, Parties shall take into account the provisions of Article 4, paragraphs 4, 5, 7, 8 and 9, of the Convention.

2. In the context of the implementation of Article 4, paragraph 1, of the Convention, in accordance with the provisions of Article 4, paragraph 3, and Article 11 of the Convention, and through the entity or entities entrusted with the operation of the financial mechanism of the Convention, the developed country Parties and other developed Parties included in Annex II to the Convention shall:

(a) Provide new and additional financial resources to meet the agreed full costs incurred by developing country Parties in advancing the implementation of existing commitments under Article 4, paragraph 1 (a), of the Convention that are covered in Article 10, subparagraph (a); and

(b) Also provide such financial resources, including for the transfer of technology, needed by the developing country Parties to meet the agreed full incremental costs of advancing the implementation of existing commitments under Article 4, paragraph 1, of the Convention that are covered by Article 10 and that are agreed between a developing country Party and the international entity or entities referred to in Article 11 of the Convention, in accordance with that Article.

The implementation of these existing commitments shall take into account the need for adequacy and predictability in the flow of funds and the importance of appropriate burden sharing among developed country Parties. The guidance to the entity or entities entrusted with the operation of the financial mechanism of the Convention in relevant decisions of the Conference of the Parties, including those agreed before the adoption of this Protocol, shall apply *mutatis mutandis* to the provisions of this paragraph.

3. The developed country Parties and other developed Parties in Annex II to the Convention may also provide, and developing country Parties avail themselves of, financial resources for the implementation of Article 10, through bilateral, regional and other multilateral channels.

Article 12

1. A clean development mechanism is hereby defined.

2. The purpose of the clean development mechanism shall be to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments under Article 3.

3. Under the clean development mechanism:

(a) Parties not included in Annex I will benefit from project activities resulting in certified emission reductions; and

(b) Parties included in Annex I may use the certified emission reductions accruing from such project activities to contribute to compliance with part of their quantified emission limitation and reduction commitments under Article 3, as determined by the Conference of the Parties serving as the meeting of the Parties to this Protocol.

4. The clean development mechanism shall be subject to the authority and guidance of the Conference of the Parties serving as the meeting of the Parties to this Protocol and be supervised by an executive board of the clean development mechanism.

5. Emission reductions resulting from each project activity shall be certified by operational entities to be designated by the Conference of the Parties serving as the meeting of the Parties to this Protocol, on the basis of:

(a) Voluntary participation approved by each Party involved;

(b) Real, measurable, and long-term benefits related to the mitigation of climate change; and

(c) Reductions in emissions that are additional to any that would occur in the absence of the certified project activity.

6. The clean development mechanism shall assist in arranging funding of certified project activities as necessary.

7. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session, elaborate modalities and procedures with the objective of ensuring transparency, efficiency and accountability through independent auditing and verification of project activities.

8. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall ensure that a share of the proceeds from certified project activities is used to cover administrative expenses as well as to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation.

9. Participation under the clean development mechanism, including in activities mentioned in paragraph 3 (a) above and in the acquisition of certified emission reductions, may involve private and/or public entities, and is to be subject to whatever guidance may be provided by the executive board of the clean development mechanism.

10. Certified emission reductions obtained during the period from the year 2000 up to the beginning of the first commitment period can be used to assist in achieving compliance in the first commitment period.

Article 13

1. The Conference of the Parties, the supreme body of the Convention, shall serve as the meeting of the Parties to this Protocol.

2. Parties to the Convention that are not Parties to this Protocol may participate as observers in the proceedings of any session of the Conference of the Parties serving as the meeting of the Parties to this Protocol. When the Conference of the Parties serves as the meeting of the Parties to this Protocol, decisions under this Protocol shall be taken only by those that are Parties to this Protocol.

3. When the Conference of the Parties serves as the meeting of the Parties to this Protocol, any member of the Bureau of the Conference of the Parties representing a Party to the Convention but, at that time, not a Party to this Protocol, shall be replaced by an additional member to be elected by and from amongst the Parties to this Protocol.

4. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall keep under regular review the implementation of this Protocol and shall make, within its mandate, the decisions necessary to promote its effective implementation. It shall perform the functions assigned to it by this Protocol and shall:

(a) Assess, on the basis of all information made available to it in accordance with the provisions of this Protocol, the implementation of this Protocol by the Parties, the overall effects of the measures taken pursuant to this Protocol, in particular environmental, economic and social effects as well as their cumulative impacts and the extent to which progress towards the objective of the Convention is being achieved;

(b) Periodically examine the obligations of the Parties under this Protocol, giving due consideration to any reviews required by Article 4, paragraph 2 (d), and Article 7, paragraph 2, of the Convention, in the light of the objective of the Convention, the experience gained in its implementation and the evolution of scientific and technological knowledge, and in this respect consider and adopt regular reports on the implementation of this Protocol;

(c) Promote and facilitate the exchange of information on measures adopted by the Parties to address climate change and its effects, taking into account the differing circumstances, responsibilities and capabilities of the Parties and their respective commitments under this Protocol;

(d) Facilitate, at the request of two or more Parties, the coordination of measures adopted by them to address climate change and its effects, taking into account the differing circumstances, responsibilities and capabilities of the Parties and their respective commitments under this Protocol;

(e) Promote and guide, in accordance with the objective of the Convention and the provisions of this Protocol, and taking fully into account the relevant decisions by the Conference of the Parties, the development and periodic refinement of comparable methodologies for the effective implementation of this Protocol, to be agreed on by the Conference of the Parties serving as the meeting of the Parties to this Protocol;

(f) Make recommendations on any matters necessary for the implementation of this Protocol;

(g) Seek to mobilize additional financial resources in accordance with Article 11, paragraph 2;

(h) Establish such subsidiary bodies as are deemed necessary for the implementation of this Protocol;

(i) Seek and utilize, where appropriate, the services and cooperation of, and information provided by, competent international organizations and intergovernmental and non-governmental bodies; and

(j) Exercise such other functions as may be required for the implementation of this Protocol, and consider any assignment resulting from a decision by the Conference of the Parties.

5. The rules of procedure of the Conference of the Parties and financial procedures applied under the Convention shall be applied *mutatis mutandis* under this Protocol, except as may be otherwise decided by consensus by the Conference of the Parties serving as the meeting of the Parties to this Protocol.

6. The first session of the Conference of the Parties serving as the meeting of the Parties to this Protocol shall be convened by the secretariat in conjunction with the first session of the Conference of the Parties that is scheduled after the date of the entry into force of this Protocol. Subsequent ordinary sessions of the Conference of the Parties serving as the meeting of the Parties to this Protocol shall be held every year and in conjunction with ordinary sessions of the Conference of the Parties, unless otherwise decided by the Conference of the Parties serving as the meeting of the Parties to this Protocol.

7. Extraordinary sessions of the Conference of the Parties serving as the meeting of the Parties to this Protocol shall be held at such other times as may be deemed necessary by the Conference of the Parties serving as the meeting of the Parties to this Protocol, or at the written request of any Party, provided that, within six months of the request being communicated to the Parties by the secretariat, it is supported by at least one third of the Parties.

8. The United Nations, its specialized agencies and the International Atomic Energy Agency, as well as any State member thereof or observers thereto not party to the Convention, may be represented at sessions of the Conference of the Parties serving as the meeting of the Parties to this Protocol as observers. Any body or agency, whether national or international, governmental or non-governmental, which is qualified in matters covered by this Protocol and which has informed the secretariat of its wish to be represented at a session of the Conference of the Parties serving as the meeting of the Parties to this Protocol as an observer, may be so admitted unless at least one third of the Parties present object. The admission and participation of observers shall be subject to the rules of procedure, as referred to in paragraph 5 above.

Article 14

1. The secretariat established by Article 8 of the Convention shall serve as the secretariat of this Protocol.

2. Article 8, paragraph 2, of the Convention on the functions of the secretariat, and Article 8, paragraph 3, of the Convention on arrangements made for the functioning of the secretariat, shall apply *mutatis mutandis* to this Protocol. The secretariat shall, in addition, exercise the functions assigned to it under this Protocol.

Article 15

1. The Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation established by Articles 9 and 10 of the Convention shall serve as, respectively, the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation of this Protocol. The provisions relating to the functioning of these two bodies under the Convention shall apply *mutatis mutandis* to this Protocol. Sessions of the meetings of the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation of this Protocol shall be held in conjunction with the meetings of, respectively, the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation of the Convention.

2. Parties to the Convention that are not Parties to this Protocol may participate as observers in the proceedings of any session of the subsidiary bodies. When the subsidiary bodies serve as the subsidiary bodies of this Protocol, decisions under this Protocol shall be taken only by those that are Parties to this Protocol.

3. When the subsidiary bodies established by Articles 9 and 10 of the Convention exercise their functions with regard to matters concerning this Protocol, any member of the Bureaux of those subsidiary bodies representing a Party to the Convention but, at that time, not a party to this Protocol, shall be replaced by an additional member to be elected by and from amongst the Parties to this Protocol.

Article 16

The Conference of the Parties serving as the meeting of the Parties to this Protocol shall, as soon as practicable, consider the application to this Protocol of, and modify as appropriate, the multilateral consultative process referred to in Article 13 of the Convention, in the light of any relevant decisions that may be taken by the Conference of the Parties. Any multilateral consultative process that may be applied to this Protocol shall operate without prejudice to the procedures and mechanisms established in accordance with Article 18.

Article 17

The Conference of the Parties shall define the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability for emissions trading. The Parties included in Annex B may participate in emissions trading for the purposes of fulfilling their commitments under Article 3. Any such trading shall be supplemental to domestic actions for the purpose of meeting quantified emission limitation and reduction commitments under that Article.

Article 18

The Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session, approve appropriate and effective procedures and mechanisms to determine and to address cases of non-compliance with the provisions of this Protocol, including through the development of an indicative list of consequences, taking into account the cause, type, degree and frequency of non-compliance. Any procedures and mechanisms under this Article entailing binding consequences shall be adopted by means of an amendment to this Protocol.

Article 19

The provisions of Article 14 of the Convention on settlement of disputes shall apply *mutatis mutandis* to this Protocol.

Article 20

1. Any Party may propose amendments to this Protocol.
2. Amendments to this Protocol shall be adopted at an ordinary session of the Conference of the Parties serving as the meeting of the Parties to this Protocol. The text of any proposed amendment to this Protocol shall be communicated to the Parties by the secretariat at least

six months before the meeting at which it is proposed for adoption. The secretariat shall also communicate the text of any proposed amendments to the Parties and signatories to the Convention and, for information, to the Depositary.

3. The Parties shall make every effort to reach agreement on any proposed amendment to this Protocol by consensus. If all efforts at consensus have been exhausted, and no agreement reached, the amendment shall as a last resort be adopted by a three-fourths majority vote of the Parties present and voting at the meeting. The adopted amendment shall be communicated by the secretariat to the Depositary, who shall circulate it to all Parties for their acceptance.

4. Instruments of acceptance in respect of an amendment shall be deposited with the Depositary. An amendment adopted in accordance with paragraph 3 above shall enter into force for those Parties having accepted it on the ninetieth day after the date of receipt by the Depositary of an instrument of acceptance by at least three fourths of the Parties to this Protocol.

5. The amendment shall enter into force for any other Party on the ninetieth day after the date on which that Party deposits with the Depositary its instrument of acceptance of the said amendment.

Article 21

1. Annexes to this Protocol shall form an integral part thereof and, unless otherwise expressly provided, a reference to this Protocol constitutes at the same time a reference to any annexes thereto. Any annexes adopted after the entry into force of this Protocol shall be restricted to lists, forms and any other material of a descriptive nature that is of a scientific, technical, procedural or administrative character.

2. Any Party may make proposals for an annex to this Protocol and may propose amendments to annexes to this Protocol.

3. Annexes to this Protocol and amendments to annexes to this Protocol shall be adopted at an ordinary session of the Conference of the Parties serving as the meeting of the Parties to this Protocol. The text of any proposed annex or amendment to an annex shall be communicated to the Parties by the secretariat at least six months before the meeting at which it is proposed for adoption. The secretariat shall also communicate the text of any proposed annex or amendment to an annex to the Parties and signatories to the Convention and, for information, to the Depositary.

4. The Parties shall make every effort to reach agreement on any proposed annex or amendment to an annex by consensus. If all efforts at consensus have been exhausted, and no agreement reached, the annex or amendment to an annex shall as a last resort be adopted by a three-fourths majority vote of the Parties present and voting at the meeting. The adopted annex or amendment to an annex shall be communicated by the secretariat to the Depositary, who shall circulate it to all Parties for their acceptance.

5. An annex, or amendment to an annex other than Annex A or B, that has been adopted in accordance with paragraphs 3 and 4 above shall enter into force for all Parties to this Protocol six months after the date of the communication by the Depositary to such Parties of the adoption of the annex or adoption of the amendment to the annex, except for those Parties that have

notified the Depositary, in writing, within that period of their non-acceptance of the annex or amendment to the annex. The annex or amendment to an annex shall enter into force for Parties which withdraw their notification of non-acceptance on the ninetieth day after the date on which withdrawal of such notification has been received by the Depositary.

6. If the adoption of an annex or an amendment to an annex involves an amendment to this Protocol, that annex or amendment to an annex shall not enter into force until such time as the amendment to this Protocol enters into force.

7. Amendments to Annexes A and B to this Protocol shall be adopted and enter into force in accordance with the procedure set out in Article 20, provided that any amendment to Annex B shall be adopted only with the written consent of the Party concerned.

Article 22

1. Each Party shall have one vote, except as provided for in paragraph 2 below.
2. Regional economic integration organizations, in matters within their competence, shall exercise their right to vote with a number of votes equal to the number of their member States that are Parties to this Protocol. Such an organization shall not exercise its right to vote if any of its member States exercises its right, and vice versa.

Article 23

The Secretary-General of the United Nations shall be the Depositary of this Protocol.

Article 24

1. This Protocol shall be open for signature and subject to ratification, acceptance or approval by States and regional economic integration organizations which are Parties to the Convention. It shall be open for signature at United Nations Headquarters in New York from 16 March 1998 to 15 March 1999. This Protocol shall be open for accession from the day after the date on which it is closed for signature. Instruments of ratification, acceptance, approval or accession shall be deposited with the Depositary.

2. Any regional economic integration organization which becomes a Party to this Protocol without any of its member States being a Party shall be bound by all the obligations under this Protocol. In the case of such organizations, one or more of whose member States is a Party to this Protocol, the organization and its member States shall decide on their respective responsibilities for the performance of their obligations under this Protocol. In such cases, the organization and the member States shall not be entitled to exercise rights under this Protocol concurrently.

3. In their instruments of ratification, acceptance, approval or accession, regional economic integration organizations shall declare the extent of their competence with respect to the matters governed by this Protocol. These organizations shall also inform the Depositary, who shall in turn inform the Parties, of any substantial modification in the extent of their competence.

Article 25

1. This Protocol shall enter into force on the ninetieth day after the date on which not less than 55 Parties to the Convention, incorporating Parties included in Annex I which accounted in total for at least 55 per cent of the total carbon dioxide emissions for 1990 of the Parties included in Annex I, have deposited their instruments of ratification, acceptance, approval or accession.
2. For the purposes of this Article, “the total carbon dioxide emissions for 1990 of the Parties included in Annex I” means the amount communicated on or before the date of adoption of this Protocol by the Parties included in Annex I in their first national communications submitted in accordance with Article 12 of the Convention.
3. For each State or regional economic integration organization that ratifies, accepts or approves this Protocol or accedes thereto after the conditions set out in paragraph 1 above for entry into force have been fulfilled, this Protocol shall enter into force on the ninetieth day following the date of deposit of its instrument of ratification, acceptance, approval or accession.
4. For the purposes of this Article, any instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by States members of the organization.

Article 26

No reservations may be made to this Protocol.

Article 27

1. At any time after three years from the date on which this Protocol has entered into force for a Party, that Party may withdraw from this Protocol by giving written notification to the Depositary.
2. Any such withdrawal shall take effect upon expiry of one year from the date of receipt by the Depositary of the notification of withdrawal, or on such later date as may be specified in the notification of withdrawal.
3. Any Party that withdraws from the Convention shall be considered as also having withdrawn from this Protocol.

Article 28

The original of this Protocol, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

DONE at Kyoto this eleventh day of December one thousand nine hundred and ninety-seven.

IN WITNESS WHEREOF the undersigned, being duly authorized to that effect, have affixed their signatures to this Protocol on the dates indicated.

Annex A

Greenhouse gases

Carbon dioxide (CO₂)
Methane (CH₄)
Nitrous oxide (N₂O)
Hydrofluorocarbons (HFCs)
Perfluorocarbons (PFCs)
Sulphur hexafluoride (SF₆)

Sectors/source categories

Energy

- Fuel combustion
 - Energy industries
 - Manufacturing industries and construction
 - Transport
 - Other sectors
 - Other
- Fugitive emissions from fuels
 - Solid fuels
 - Oil and natural gas
 - Other

Industrial processes

- Mineral products
- Chemical industry
- Metal production
- Other production
- Production of halocarbons and sulphur hexafluoride
- Consumption of halocarbons and sulphur hexafluoride
- Other

Solvent and other product use

Agriculture

- Enteric fermentation
- Manure management
- Rice cultivation
- Agricultural soils
- Prescribed burning of savannas
- Field burning of agricultural residues
- Other

Waste

- Solid waste disposal on land
- Wastewater handling
- Waste incineration
- Other

Annex B

Party	Quantified emission limitation or reduction commitment (percentage of base year or period)
Australia	108
Austria	92
Belgium	92
Bulgaria*	92
Canada	94
Croatia*	95
Czech Republic*	92
Denmark	92
Estonia*	92
European Community	92
Finland	92
France	92
Germany	92
Greece	92
Hungary*	94
Iceland	110
Ireland	92
Italy	92
Japan	94
Latvia*	92
Liechtenstein	92
Lithuania*	92
Luxembourg	92
Monaco	92
Netherlands	92
New Zealand	100
Norway	101
Poland*	94
Portugal	92
Romania*	92
Russian Federation*	100
Slovakia*	92
Slovenia*	92
Spain	92
Sweden	92
Switzerland	92
Ukraine*	100
United Kingdom of Great Britain and Northern Ireland	92
United States of America	93

* Countries that are undergoing the process of transition to a market economy.



Project Inception Stage
(Appendix F to Appendix P)

Appendix-F

**List of Participants: Expert Group Meeting on Mainstreaming Climate
Change into National Urban Policies**

Expert Group Meeting on Mainstreaming Climate Change into National Urban Policies
17-18 March 2015
UNCC, MR-H
Bangkok

List of Participants

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Appendix-G

Project Brochure: Expert Group Meeting on Mainstreaming climate Change into National Urban Policies



Brochure

Expert Group Meeting

Mainstreaming Climate Change into National Urban Policies

United Nations Conference Centre, Bangkok, Thailand

17–18 March 2015



“As cities and national governments cannot act alone to effectively tackle climate change, a framework for understanding the linkages across multiple levels of government and with the private sector and non-governmental stakeholders is needed.”

OECD (2010, p171). Cities and climate change

Introduction

In the face of the changing global climate, the future of millions of people in the Asia and Pacific Region will be determined by the pace and quality of adaptation and mitigation undertaken by its cities. Climate change will provide challenges to environmental sustainability, the structure of economies, patterns of human settlements, livelihoods and employment. Rapid urbanization in Asia and the Pacific is also associated with an increase of poverty in cities with about one third of the region’s urban population now estimated to live in slums.

Local governments and urban stakeholders, have started to address climate change throughout the Asia and Pacific region by exploring low carbon development paths and addressing resilience. However, very often these efforts remain local and depend on the initiative of individual cities, often with the support of external partners. The key bottlenecks for a broader urban sector response to climate change are: (i) limited local and national capacities to address climate change challenges; (ii) limited funding for climate change responses, particularly at the local level; (iii) a combination of a lack of political will and prioritisation; and (iv) national urban policy and legal frameworks that do not anticipate and manage rapid urban growth nor climate change.

National policy frameworks can stimulate the development and implementation of local climate change actions. These frameworks may include policies, laws, capacity development and financial mechanisms. In order to support national governments in their efforts to address climate change at the city or local government level, UN-Habitat, ESCAP and UNEP jointly implement the project: “Strengthening capacities of member states in the Asian and Pacific region to mainstream climate change concerns into national urban related policies”.

Objective of the Expert Group Meeting

The objective of the Expert Group Meeting is to agree on modalities to mainstream climate change concerns into national urban related policies.

Expected outcomes of the Expert Group Meeting

- √ Agree on a framework for reviewing/assessing national urban related policy/legislation (national-urban; housing; urban infrastructure; urban planning; climate change) in participating countries
- √ Develop country specific implementation modalities and work plans
- √ Share and discuss good practices
- √ Discuss/analyse policy options for mainstreaming climate change concerns into national urban related policies



Country representatives

The organizers can fund country representatives of participating countries consisting of four (4) delegates, composed of:

- Two representatives of national ministries of urban development / housing / local government or similar institution. The representatives should be from ministries responsible for urban and local government policies which are relevant to climate change
- A representative of the national climate change commission / ministry of environment (or similar body). The representative should be familiar with urban / local climate change challenges and the relevant national climate change laws/policies/strategies/frameworks.
- A representative from a national local government association or a think tank familiar with local government and climate change issues.

During the Expert Group Meeting, each country representative is expected to finalize a basic country specific project Implementation Plan. The Implementation plan will be developed during working group sessions. During the meeting, country delegations will be supported and guided by resource persons and provided with practical tools in the development of their plans.

Programme outline

17 March (Tue) 2015	18 March (Wed) 2015
MORNING	MORNING
<ul style="list-style-type: none"> - Opening remarks - Introduction and objectives of the meeting - Key project intervention 	<ul style="list-style-type: none"> - The assessment framework
Lunch	Lunch
AFTERNOON	AFTERNOON
<ul style="list-style-type: none"> - Strategies to address the challenges - Challenges and opportunities – country presentations 	<ul style="list-style-type: none"> - Development of national work plans

Contact

To register your country representatives, please submit names, designations, institutions, address and contact details by filling in the attached participation form and forwarding it to <escap-edd-suds@un.org> for each participant:



Preparation Guidelines

Expert Group Meeting

Mainstreaming Climate Change into National Urban Policies

United Nations Conference Centre, Bangkok, Thailand

17–18 March 2015

“As cities and national governments cannot act alone to effectively tackle climate change, a framework for understanding the linkages across multiple levels of government and with the private sector and non-governmental stakeholders is needed.”

OECD (2010, p171). Cities and Climate Change

Introduction

In the face of the changing global climate, the future of millions of people in the Asia and Pacific Region will be determined by the pace and quality of adaptation and mitigation undertaken by its cities. Climate change will provide challenges to environmental sustainability, the structure of economies, patterns of human settlements, livelihoods and employment. Despite considerable economic transformation poverty and inequality remain key challenges for the cities in Asia and the Pacific with about one third of the region’s urban population now estimated to live in slums.

Local governments and urban stakeholders, have started to address climate change throughout the Asia and Pacific region by exploring low carbon development paths and addressing resilience. However, very often these efforts remain local and depend on the initiative of individual cities, often with the (limited) support of external partners. The key bottlenecks for a broader urban sector response to climate change are: (i) limited local and national capacities to address climate change challenges; (ii) limited funding for climate change responses, particularly at the local level; (iii) a combination of a lack of political will and prioritisation; and (iv) national urban policy and legal frameworks that do not anticipate and manage rapid urban growth nor climate change.

National policy frameworks can stimulate the development and implementation of local climate change actions. These frameworks may include policies, laws, capacity development and financial mechanisms. In order to support national governments in their efforts to address climate change at the city or local government level, UN-Habitat, ESCAP and UNEP are jointly implementing the project: “Strengthening capacities of member states in the Asian and Pacific region to mainstream climate change concerns into national urban related policies”.

Why this preparation?

In order to enhance the effectiveness of national policy frameworks for reacting to climate change at the local level, countries need to know what the challenges and opportunities are for developing such a framework. This requires an understanding of (i) the main problems related to climate change in the country and in cities and of (ii) the most important (driving and inhibiting) conditions (policies, laws, financing, capacities, institutional arrangements) for national governments to support local governments to react to climate change. To get a better understanding of this, an in-depth analysis will be conducted in countries. However, to start-off the project effectively at the Expert Group Meeting, some information gathering and basic analysis is needed. Guidance on what information is needed is provided below. **Please note that, besides this document, country representatives also need to prepare a power point presentation** (1 presentation per country) in which the same information is summarized in 12 slides (maximum 20 minutes per country). A power point with a standard structure will be provided for this purpose.

The organizers would be grateful if you could kindly complete this form and bring it to the Expert Group Meeting on 17-18 March. This will serve as the basis for discussions during the exercise segment of the programme on the second day.

1. COUNTRY PROFILE	
Country name	BANGLADESH
Land area in km ²	147,750
Population number and growth/year	152.51 million and 1.37% (Census 2011, BBS).
Urban population (per cent) and growth/year	31077952 and 23.81%(Census 2011, BBS).
Name and population of largest city	(1) Dhaka: 10.712 Million, density (2) Chittagong: 3.386 million, density:, (3) Khulna: 1.341 Million, (4) Rajshahi: 0.70 Million, Density, (5) Sylhet: 0.32 Million
Population density per km ²	
GDP per capita in US dollars	\$1192 (at current prices 2014-15)
Geographical setting (climate)	<ul style="list-style-type: none"> ● Pre-M'soon 32.6°C (max.), 22.4°C(min.), rainfall 453mm, RH 74% ● Monsoon 32.6°C (max.), 25.5°C(min.), rainfall 1733mm, RH 86% ● Post-M'soon 30.5°C (max.), 21.4°C(min.), rainfall 210mm, RH 80% ● Winter 26.5°C (max.), 13.9°C(min.), rainfall 44mm, RH 73% ● Annul 30.4°C (max.), 21.2°C(min.), rainfall 203mm, RH78%

2. CLIMATE CHANGE AND URBANIZATION RELATED PROBLEMS	
<p>2.1. Describe the main problems related to climate change in the country and in cities.</p> <p>Please consider:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Hazards: trends and projections of drought, precipitation, heat waves, sea level rise and floods); <input type="checkbox"/> Vulnerabilities: economic impacts/losses (US\$), social/poor, infrastructure (e.g housing), and; <input type="checkbox"/> Difference between impacts and vulnerabilities on the country and city level 	<ul style="list-style-type: none"> ● CC severely challenge economic growth and frequent disaster disrupt life and economy ● Equivalent to direct annual cost 0.5% to 1% of GDP ● Vulnerability <ul style="list-style-type: none"> ○ At City Scale: Tertiary sector (housing, infrastructure)-livelihood- more vulnerable ○ At Country Scale: Primary Sector (agriculture)-livelihood- less vulnerable ● Rapid urbanization responsible for <ul style="list-style-type: none"> ○ Urban Sprawl/Lack of buildable land ○ Lack of Housing and Access to Services ○ Poor Environmental Convdition; and ○ Extreme Poverty

2. CLIMATE CHANGE AND URBANIZATION RELATED PROBLEMS	
<p>2.2. Please list hazards and vulnerabilities separately from most to less critical</p>	<p>Hazards</p> <ol style="list-style-type: none"> 1. Floods ... 2. Cyclones and Storm Surges ... 3. Tornado ... 4. River Bank Erosion 5. Tsunami 6. Salinity Intrusion 7. Land Slide 8. Drought 9. Earthquake ... <p>Vulnerabilities</p> <ol style="list-style-type: none"> 1. People ... 2. Land ... 3. Water ... 4. Air... 5. Economy (Primary, Secondary, Tertiary) 6. Infrastructure: (Point, Line, Area)
<p>2.3. Describe the main problems related to rapid urbanization</p> <p>Please consider:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Urban sprawl / availability of space <input type="checkbox"/> Housing and access to services <input type="checkbox"/> Environment <input type="checkbox"/> Poverty/inequality 	<ul style="list-style-type: none"> ● Rapid urbanization responsible for <ul style="list-style-type: none"> ○ Urban Sprawl/Lack of buildable land ○ Lack of Housing and Access to Services ○ Poor Environmental Condition; and ○ Extreme Poverty

3. POLICIES	
<p>3.1. What are the most important policies that promote or inhibit climate change adaptation and mitigation efforts in cities? What policies are missing?</p> <p>Please consider laws, regulations, strategies and plans at the local, regional and national levels</p>	<p>The most important policies that promote or cripple climate change adaptation and mitigation efforts in cities are:</p> <ul style="list-style-type: none"> ○ The Bangladesh Delta Plan 2100 ○ Bangladesh Climate Change Action Plan 2009 ○ National Plan for Disaster Management 2010-2015 ○ Perspective Plan for Bangladesh 2010-2021 ○ The Sixth Five Year Plan (FY 2011-FY2015) ○ National Urban Sector Policy, 2014 (draft) ○ National Housing Policy, 2008 (draft) ○ Standing Orders on Disaster (SOD), 2010 ○ National Land Use Policy, 2001 ○ National Water Policy, 1999 ○ Environmental Policy, 1992 and Implementation Programme ○ National Agricultural Policy, 1999 ○ Bangladesh Industrial Policy 2005 ○ Renewable Energy Policy of Bangladesh 2002 ○ Disaster Management Act, 2012 ○ National Water Management Plan, 2000 ○ policies that are missing: ○ National Disaster Management Policy ○ Urban and Regional Planning Act ○ National Comprehensive Land Use Plan
<p>3.2. What are the main opportunities for better integrating climate change into the above identified policies over the next years?</p> <p>Please consider what national level (pipeline) policies (also related to urban development) could be candidates for integrating / strengthening climate change into these policies.</p>	<ul style="list-style-type: none"> ● Seventh Five Year Plan-FY 2016-FY2020 ● National Urban Sector Policy 2014, (draft) ● National Comprehensive Development Plan for the Whole Country (Pipeline Project) ● Urban and Regional Planning Act, 2014 (draft)

3. POLICIES

3.3. Provide a policy overview in the table below

Please consider:

- National urban policy / national urbanization framework
- Multi-level governance / decentralization policies
- Spatial / urban planning, incl. building codes
- Housing policy, incl. land?
- Urban infrastructure policies
- Local role environmental / energy / climate change policies

See below

3.3. POLICY OVERVIEW						
Urban/local Policy (law, national strategy etc.)	Is there such a policy in your country y/n	Official name of Policy (with year)	How is climate change integrated (provide citation for any cross-reference of climate change policies)	How does this policy support and/or impede urban/local climate change action?	Other comments	
National Urban Policy / National Urbanization Framework	National Urban/ National Urbanization Framework	y	National Urban Sector Policy, 2014 (draft)	Climate change is not directly integrated in this policy	If national level development plan is prepared on the basis of the policy, this may impede urban/local climate change action indirectly	
Multi-level governance, Decentralization (please list specific policies separately)					Provincial or Regional level governance does not exist in Bangladesh. These only two-tier administrative system exist in Bangladesh (central government and local government)	
Spatial / urban planning, incl. building codes (please list specific policies separately)						
Housing policy, incl. building codes (please list specific policies separately)						

3.3. POLICY OVERVIEW

Housing Policy	y	National Housing Policy, 2008 (draft)	Climate change is not directly integrated in this policy	The policy emphasized on disaster resilient housing	By addressing disaster resilient housing, the policy indirectly addressed climate change in housing sector
National Building Code	Y	National Building Code, 1993 (The Building Code is being reviewing by government and green building concept has been incorporated into the code)	Climate change is not directly integrated in this policy	The policy emphasized on ensuring environmentally sound sustainable development (energy efficient building, gray water management and earthquake resilient building) has been incorporated into the Code	
Urban infrastructure policies, e.g. roads, water, waste, energy (please list specific policies separately)					

3.3. POLICY OVERVIEW						
National Land Use Policy	Y	National Land Use Policy, 2001	Climate change is not directly integrated in this policy	The policy emphasized on conserving water body and forest; and environmental balance	By addressing conservation of water body and forest and environmental balance, the policy indirectly addressed climate change in land use management	
Agricultural Policy	Y	National Agricultural Policy, 1999	Climate change is not directly integrated in this policy	The policy addressed on water logging and developing salinity resistant species for crop production	By addressing development of salinity resistant crops, the policy indirectly addressed climate change issue	
Provide brief summary of local role policies and laws related to climate change energy / environment / urban development						
Energy Policy	Y	Renewable Energy Policy of Bangladesh 2002	Climate change is not directly integrated in this policy	The policy emphasized on ensuring environmentally sound energy development programs causing minimum damage to environment and conducting Environmental Impact Assessment (EIA) for establishing any renewable energy project	By addressing ensuring environmentally sound sustainable energy development and provision of conducting EIA, the policy indirectly addressed climate change issue	

3.3. POLICY OVERVIEW

Environmental Policy	Y	Environmental Policy, 1992 and Implementation Programme	Climate change is not directly integrated in this policy	The policy emphasized on environmental conservation and protection against natural hazards	By addressing environmental conservation and protection against natural hazards, the policy indirectly addressed climate change in water management
National Water Policy	Y	National Water Policy, 1999	Climate change is not directly integrated in this policy	The policy emphasized on dealing with hydrological hazard and environmental conservation	By addressing hydrological hazard and environmental conservation, the policy indirectly addressed climate change in water management
Industrial Policy	Y	Bangladesh Industrial Policy 2005	Climate change is not directly integrated in this policy	There is no provision of hazard mitigation of climate change in the policy	Climate change issue is required to incorporate in the policy

4. FINANCING	
<p>4.1. What are the roles and responsibilities regarding climate change financing?</p> <p>Please consider roles and responsibilities at all government levels (national, regional, local)</p>	<ul style="list-style-type: none"> ○ GoB has recently established a National Climate Change Fund ○ Initial capitalization of \$45 million later raised to \$100 million mainly focusing on adaptation ○ Ministry of Environment and Forest working out costs of implementing the ten-year Action Plan, in consultation with the Line Ministries
<p>4.2. What are the options /opportunities for increasing the funding of local climate change action from the national level?</p>	<ul style="list-style-type: none"> ○ Adaptation to climate change will place a massive burden on Bangladesh’s development budget; and ○ international support essential to help the country rise to the challenge ○ Bangladesh calls on the international community to provide the resources needed to meet the additional costs of building climate resilience; and ○ also for adopting cleanest energy development technology

5. CAPACITIES	
<p>6.1. What capacities are lacking to respond to climate change?</p> <p>Please consider capacities at all government levels (national, regional, local)</p>	<ul style="list-style-type: none"> ● Tackling climate change requires an integrated approach ● Involving different ministries and agencies, civil society and the business sector <ul style="list-style-type: none"> ○ Also a need for other organizations to plan and implement development programs; and ○ Development organizations to implement regular programs more effectively and rise to the challenge of climate change

5. CAPACITIES

6.2. What most effective support can national governments offer in building the capacity of local governments to respond to climate change? You may include finance, data, decentralization policies etc

- Review and Revise all govt. policies to ensure full account of climate change including impact
- Mainstream climate change in national, sectoral and spatial development planning; and
- ensuring impact on vulnerable group and women are prioritized in plans
- Build capacity of
- key govt. ministries and agencies to take forward climate change adaptation
- e.g.,
- Ministry of Food and Disaster Management,
- Bangladesh Water Development Board,
- Local Government Engineering Department;
- National Agricultural Research System,
- the Health system,
- the Ministry of Women's and Children's Affairs
- Build Capacity-
- of The govt to undertake international and regional negotiations on climate change
- Regional and international cooperation is essential in order to build necessary capacity and resilience
- of the govt, civil society and the private sector on carbon financing to access various global climate funds
- for education and training of environmental refugees to ease and facilitate their migration to other countries and integration in new societies

6. INSTITUTIONAL ARRANGEMENTS

<p>6.1. What are the key actors influencing (driving or blocking) climate change adaptation and mitigation efforts. What are the barriers and opportunities for collaboration between different actors or for the national government to support local governments?</p> <p>Please consider government, business and community and how they influence processes.</p>	<ul style="list-style-type: none"> ● a Climate Change Unit created by the Ministry of Environment and Forests. ● The Unit operate under guidance of the National Environment Committee chaired by the Prime Minister; and ● the National Steering Committee on Climate Change headed by the Minister for Ministry of Environment and Forests. <ul style="list-style-type: none"> ○ The Climate Change Focal Points will – ○ look after, design and help in implementation of sectoral policies, programmes and projects from climate change perspectives <p>as and when so required within the framework of the planned development process</p> <ul style="list-style-type: none"> ● All relevant sectoral ministries will have Climate Change Focal Points ● The Climate Change Unit will coordinate and facilitate the works of the Focal Points; as well as <p>network with all stockholders, the people in general, the civil society, NGOs, the private sector and international actors in an inclusive manner.</p> <ul style="list-style-type: none"> ○ The Bangladesh Climate Change Strategy and Action Plan developed through a participatory process ○ involving all relevant Ministries and agencies, civil society, research organizations, the academia and the business community. ○ Programmes funded under the Action Plan will be implemented by line ministries and agencies, with participation of other stakeholder groups, including civil society, professional a research bodies and the private sector <p>The BCCSAP 2009 will be reviewed periodically and revised, in line with-</p> <ul style="list-style-type: none"> ● national development priorities, ● emerging scientific and technical knowledge; and ● the outcomes of global negotiations under UNFCC and other UN-led climate change negotiation processes
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6. INSTITUTIONAL ARRANGEMENTS

6.1. What are the key actors influencing (driving or blocking) climate change adaptation and mitigation efforts. What are the barriers and opportunities for collaboration between different actors or for the national government to support local governments?

Please consider government, business and community and how they influence processes.

- The main ministries of the Government of Bangladesh involved in CC:
- the Ministry of Environment and Forests -Department of Environment (DoE) and Department of Forests (DoF);
- Food and Disaster Management (MoFDM)- Disaster Management Bureau (DMB) and the Comprehensive Disaster Management Programme (CDMP);
- Water Resources –includes the Bangladesh Water Development Board
- and other research and forecasting organization;
- Local Government, Rural Development and Cooperatives,-Local Government Engineering Department (LGED), Department of Public Health Engineering (DPHE);
- Agricultural Research System-develops new crops and practices suited to different climatic and salinity conditions in the country;
- Livestock and Fisheries;
- Health and Family Welfare; Roads and Railway Division,
- Ministry of Communication,
- Ministry of Foreign Affairs;
- and the framing of development plans as well as approval of programmes and projects
- Bangladesh has a large and vibrant civil society sector- includes world-renowned organizations:
 - BRAC
 - the Grameen Bank.
- Civil society has made a major contribution to:
 - poverty reduction; and
 - has increased the resilience of poor people to natural disasters,
 - through its microfinance, income generation, health and education programmes.

6. INSTITUTIONAL ARRANGEMENTS

<p>6.1. What are the key actors influencing (driving or blocking) climate change adaptation and mitigation efforts. What are the barriers and opportunities for collaboration between different actors or for the national government to support local governments?</p> <p>Please consider government, business and community and how they influence processes.</p>	<ul style="list-style-type: none"> ● Civil society’s experience and capacity will be used to develop innovative approaches to adaptation ● including possible partnerships with the private sector. ● It is to be noted that Bangladesh has pioneered community-based approaches to reducing vulnerability to climate change, which are being shared with other developing countries
<p>6.2. What are the key national level actors influencing urban development. How could climate change (adaptation and mitigation) become more important in their agenda’s?</p>	<ul style="list-style-type: none"> ● According to Charter of Duties, Urban Development Directorate (UDD) responsible for regional and local level planning ● Local Govt. Engineering Dept. (LGED) also prepares local level plans; and ● All sectoral agencies related to physical infrastructure influence urban development ● Climate change (adaptation and mitigation) shall have to be mainstreamed through their sectoral policies, plans and acts

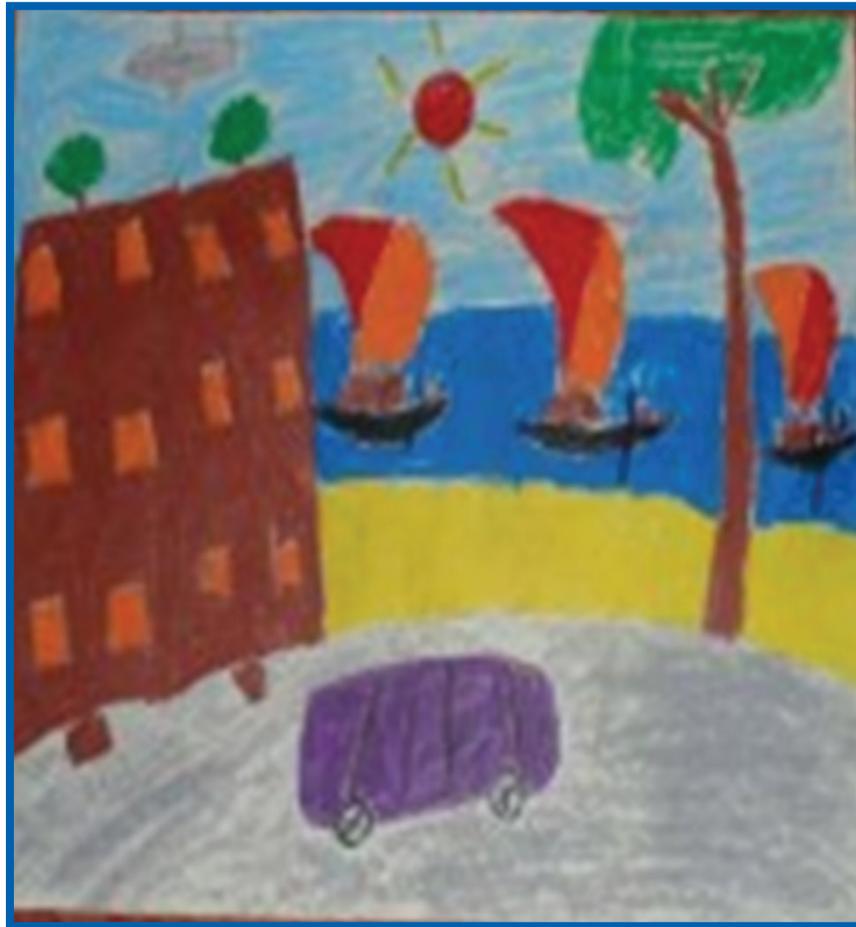
7. PROPOSED ACTIVITIES

<p>Related to this project, what activities would you propose in your country?</p> <p>Please consider activities related to integrating climate change into policies and capacity development support for local governments</p>	<ul style="list-style-type: none"> ● Mainstreaming climate change (adaptation and mitigation) into national urban sector policy ● National Urbanization Policy should also be formulated by mainstreaming climate change adaptation ● National comprehensive land use plan shall have to be formulated by mainstreaming climate change into landse planning proposed by UDD entitled “National Comprehensive Development Plan for the Whole Country” ● A legal and regulatory framework is essential for enforcement of landuse plan and development control. Hence, UDD has formulated “Urban and Regional Planning Act, 2014”, which is in active consideration by the govt, for enactment.
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Appendix-H

**Background Paper : Expert Group Meeting on Mainstreaming Climate
Change into National Urban Policies
Presented by Urban Development Directorate**

Background Paper
on
Expert Group Meeting on Mainstreaming Climate Change into National
Urban Policies



Presented
by
Urban Development Directorate
Ministry of Housing and Public works
Government of the People's Republic of Bangladesh
March, 2015

1 Introduction

1.1 Context/Background

Bangladesh is one of the most climate vulnerable countries in the world and will become even more so as a result of climate change. Floods, tropical Cyclones, storm surges and droughts are likely to become more frequent and severe in the coming years. Many would say that the signs of the future changes have already begun to become apparent¹. The combination of frequent natural disasters, high population density, poor infrastructure and low resilience to economic shocks, makes Bangladesh especially vulnerable to climatic risks. The high incidence of poverty and heavy reliance of poor people on agriculture and natural resources increases their vulnerability to climate change². These changes will threaten the significant achievements Bangladesh has made over the last 20 years in increasing incomes and reducing poverty, and will make it more difficult to achieve the MDGs. It is essential that Bangladesh prepares now to adapt to climate change and safeguard the future well-being of its citizens. Indeed, the new democratic government is unequivocal in its commitment to protect the people from the ravages of climate change as stated clearly in its election manifesto³.

Climate change will severely challenge the country's ability to achieve the high rates of economic growth needed to sustain these reductions in poverty. In coming years, it is predicted there will be increasingly frequent and severe Floods, tropical cyclones, storm surges, and droughts, which will disrupt the life of the nation and the economy⁴. The challenge Bangladesh now faces is to scale up these investments to create a suitable environment for the economic and social development of the country and to secure the well-being of the people, especially the poorest and most vulnerable groups, including women and children⁵.

1.2 The Development Account Project

The country is striving to accelerate economic growth and substantially eradicate poverty by 2021, but avoiding the harsh environmental price many countries have paid in the pursuit of growth. To this end, the Government has prepared National Perspective Plan representing Vision 2021, and the sixth five year plan and the upcoming seventh five year plan all of which are and will be based on the principle of sustainable development. The Government of Bangladesh's vision regarding management of climate change for uninterrupted and sustainable development is an integral part of the vision 2021. Very briefly it is to eradicate poverty, increase employment opportunities, ensure food security, provide access to energy & power, and achieve economic and social well-being of all citizens of the country⁶.

Bangladesh will achieve this goal through a strategy of pro-poor, climate resilient and low carbon development, based on the four building blocks of the Bali Action Plan-adaptation to climate change, mitigation, technology transfer and adequate and timely flow of funds for investment, within an inviolate framework of food, energy, water, livelihoods and health security. The Government is firmly committed to an integrated policy and plan to protect the country from the adverse effects of global warming as elaborated in its election manifesto. The manifesto emphasizes water management and basin-wise drainage and development programme, careful forest resource management, protection of flora and fauna species, control of polluting chemicals in agricultural development, restraint on air pollution by transport and power sectors, adoption of environmental protection in urbanization plan and above all in regional and global

1 Govt. Of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, Summary, p xviii, Ministry of Environment and Forests

2 Govt. Of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 18, Ministry of Environment and Forests

3 Govt. Of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, Summary, p xviii, Ministry of Environment and Forests

4 Govt. Of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P1, Ministry of Environment and Forests

5 Govt. Of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P2, Ministry of Environment and Forests

6 Govt. Of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 2, Ministry of Environment and Forests

cooperation for protection of the environment and mitigation of climate changes⁷. Keeping this view in mind, Bangladesh has formulated “**The Climate Change Strategy and Action Plan 2009**” for dealing with climate change adaptation.

1.3 The Expert Group Meeting (EGM)

The EGM tends to bring together experts and country representatives to discuss strategies to implement the “Strengthening capacities of member countries in the Asian and Pacific region to mainstream climate change concerns into national urban related policies.”

The objective of the meeting is to agree on modalities to mainstream climate change concerns into national related urban policies. This would be done by discussing reviewing/assessment options and by developing initial work plans. During this meeting good practices would be shared and policy options for mainstreaming climate change concern into national urban related policies would be discussed.

2 The Underlying Challenges with Regard to Local Resilience Building and Low Carbon Emission Development

2.1 Urbanization in Bangladesh

It is widely acknowledged that Bangladesh is a rapidly urbanizing country where urban base has expanded rapidly from 7.6% to nearly 25% between 1970 and 2005. A combination of socio- economic, political and demographic factors is responsible for this. It reflects for instance the redistribution of the rural and urban population. Also the growth in the magnitude of urban economy, change in the scale and nature of economic activity and distribution of income between regions and among classes, demographic transition and change in the scale and nature of governance are likely to be influenced by rapid urbanization and urban settlements patterns in Bangladesh.⁸

With an area of 147,750 square km, the agrarian economy of Bangladesh is experiencing a very high rate of urbanization. In 1974 people living in urban areas accounted for only 8.8% of the population (Table 2.1). By 2001, urban population was 23.10% of total population. UN data indicates that currently 25% people of Bangladesh live in urban areas. This is indicative of the fact It growth of urban population and labor force is increasing relative to rural population and labor force⁹.

Table 2.1: Growth of Urban Population in Bangladesh

Census Year	1974		1981		1991		2001	
	Number	%	Number	%	Number	%	Number	%
Urban	6273603	8.78	13535963	15.05	20872204	18.73	28605200	23.1
Rural	70124397	91.79	76376037	84.95	90582981	81.27	101424549	76.9
Total	76398000	100	89912000	100	111455185	100	130029749	100

Source: Bangladesh Bureau of Statistics

Study on the level of urbanization and share of national urban population along with total urban population for each of the six divisions reveals that Dhaka Division overwhelmingly holds the highest rank in all the census years both for level of urbanization and share of national urban population”. On the other hand, the rank of Sylhet Division was the lowest for both of the above- mentioned cases¹⁰.

7 Govt. Of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 2, Ministry of Environment and Forests

8 Govt. Of Bangladesh (2009), The Sixth Five Year Plan, FY2011-2015, Part 2, Sectoral Strategies, Programs and Policies, P 198, Ministry of Planning

9 Govt. Of Bangladesh (2009), The Sixth Five Year Plan, FY2011-2015, Part 2, Sectoral Strategies, Programs and Policies, P 198, Ministry of Planning

10 Govt. Of Bangladesh (2009), The Sixth Five Year Plan, FY2011-2015, Part 2, Sectoral Strategies, Programs and Policies, P 199, Ministry of Planning

One significant feature of urbanization in Bangladesh is that urban population is increasing at different rates in different urban centers. A considerable proportion of urban population lives in district towns and Pourashava areas in Bangladesh. According to population census report of 2001, Dhaka Metropolitan Area had a total population of 10.712 million comprising 37.45% of total urban population. Next in the hierarchy, Chittagong SMA had 3.386 million or 11.84% of the total, followed by Khulna SMA with a total population of 1.341 million or 4.69% of total, Rajshahi SMA with a total population of a 0.70 million or 2.45% of total and Sylhet City Corporation with 0.32 million or 1.12% of the total. All other had below 1% of the total population. Thus, four Metropolitan Areas together with Sylhet City Corporation population comprised 57.55% of the total urban population. There were 33 towns with population above one lac of which 7 had population of above 5 lac, 26 with population between 1 to 4 lac, 50 with population between 50 thousand and one lac, and 116 with population between 25,000 and 50,000 (Table 5.2). There were 332 urban centers with population below 25,000. Populations of many towns were more or less stable and there were depopulation in 15 districts during the decade 1991 and 2001¹¹.

Table 5.2: Number of Urban Centers by Census Year and Size Classes

Size Classes	Number of Urban Centres					
	Census Year					
	1951	1961	1974	1981	199J	2001
5,00,000 and over	--	1	2	3	4	7
1,00,000 -4,99,999	2	3	4	10	14	26
50,000 -99,999	2	5	14	23	26	50
25,000 -49,999	14	16	23	45	76	116
Under 25,000	45	53	65	411	402	332
Total	63	78	108	492		522
Level of Urbanization	4.33	5.19	8.78	15.54	-	20.15

Source: Bangladesh Bureau of Statistics

2.1.2 Driving forces behind Rapid Urbanization in Bangladesh

A major cause of urbanization in Bangladesh is that the agriculture sector is no longer able to absorb the surplus labor force entering the economy every year. Inability of the agriculture sector to provide sufficient employment or sufficiently high household incomes to cope with a growing number of dependents can encourage people to seek employment outside agriculture. In the case of Bangladesh the rural to urban migration has contributed to more than 40 percent of the change in urban population. The lure of employment opportunities existing in these cities is another reason for urban migration¹².

Most of the industrial establishments and businesses as well as business services are concentrated in the largest cities. Dhaka alone accounts for 80 percent of the garments industry-the mainstay of manufacturing in Bangladesh. The domination of business services, particularly finance and real estate services is considerably higher in the four major cities relative to the rest of the country¹³.

11 Govt. Of Bangladesh (2009), The Sixth Five Year Plan, FY2011-2015, Part 2, Sectoral Strategies, Programs and Policies, P 201, Ministry of Planning

12 Govt. Of Bangladesh (2009), The Sixth Five Year Plan, FY2011-2015, Part 2, Sectoral Strategies, Programs and Policies, P 201, Ministry of Planning

13 Govt. Of Bangladesh (2009), The Sixth Five Year Plan, FY2011-2015, Part 2, Sectoral Strategies, Programs and Policies, P 202, Ministry of Planning

Growth experiences in Bangladesh and elsewhere demonstrates both a tendency towards urbanization as well as uneven regional growth. The urbanization problem has become particularly acute in Bangladesh owing to the primacy of Dhaka. The unbalanced growth of Dhaka shows both a large concentration of wealth and income as well as unsustainable pressure on Dhaka's already fragile infrastructure and available land. Concerning regional disparities, the divisions of Dhaka, Chittagong and Sylhet seem to do better in terms of both growth and poverty reduction as compared with Rangpur, Barisal, Khulna and Rajshahi, The Sixth Plan will make efforts to address both these spatial dimensions of growth¹⁴.

2.2 Climate Change Adaptation and Mitigation

2.2.1 Hazards in Bangladesh

Bangladesh is exposed to natural hazards, such as, floods, river erosion, cyclones, droughts, tornadoes, cold waves, earthquakes, drainage congestion/water logging, arsenic contamination, salinity intrusion etc. But the nature of such occurrences, the seasons and extent of effects of the hazards are not the same in all places. Different types of disasters that strike Bangladesh are listed below¹⁵:

(A) Floods

Floods are annual phenomena, with the most severe occurring during the months of July and August. Regular river floods affect 20% of the country, increasing up to 68% in extreme years. The floods of 1988, 1998 and 2004 were particularly catastrophic, resulting in large-scale destruction and loss of lives. Approximately 37%, 43%, 52% and 68% of the country is inundated with floods of return periods of 10, 20, 50 and 100 years respectively (MPO, 1986).

(B) Cyclones and Storm Surges

Tropical cyclones from the Bay of Bengal accompanied by storm surges are one of the major disasters in Bangladesh. The country is one of the worst sufferers of all cyclonic casualties in the world. The high number of casualties is due to the fact that cyclones are always associated with storm surges. Storm surge height in excess of 9m is not uncommon in this region.

(C) Tornado

In the pre-monsoon period, there are severe local seasonal storms, popularly known as nor'westers (kalbaishakhi). Severe nor'westers are generally associated with tornadoes. Tornadoes are embedded within a mother thundercloud, and moves along the direction of the squall of the mother storm. The frequency of devastating nor'westers usually reaches the maximum in April. Nor'westers and tornadoes are more frequent in the afternoon. Wind speeds in nor'westers usually do not exceed 113-130 km/hr. (70-80 miles/hr.), though often their speeds exceed 162 km/hr (100 miles/hr.). When the winds become whirling with funnel shaped clouds having a speed of several hundred kilometers or miles per hour, they are called tornados. They can also cause a lot of havoc and destruction. Tornados are suddenly formed and are extremely localized in nature and of brief duration. Thus, it is very difficult to locate them or forecast their occurrence with the techniques available at present.

14 Govt. Of Bangladesh (2009), The Sixth Five Year Plan, FY2011-2015, Part 1, Strategic Directions and Policy Framework, P69, Planning Commission, Ministry of Planning

15 Govt. Of Bangladesh (2010), National Plan for Disaster Management, 2010-2015, pp 4-22, Disaster Management Bureau, Ministry of Disaster Management and Relief

(D) River Bank Erosion

River erosion in Bangladesh is no less dangerous than other sudden and devastating calamities. Losses due to river erosion occur slowly and gradually. Though losses are slow and gradual, they are more destructive and far-reaching than other sudden and devastating calamities. Erosion processes are highly unpredictable, and not compensated by accretion. The erosion prone zones of Bangladesh are Kurigram, Gaibandha, Jamalpur, Bogra, Sirajganj, Tangail, Pabna and Manikganj districts lie in the erosion prone area along Jamuna River. Erosion of total area and settlement is higher along the left bank than that of the right bank. Along Padma River, there are the districts of Rajbari, Faridpur, Manikganj, Dhaka, Munshiganj, Shariatpur and Chandpur.

(E) Tsunami

Underwater strong earthquakes, volcanic eruption or other submarine landslide usually causes tsunamis, when earthquake occur offshore at seduction zones. Some tsunamis can be very large. In coastal areas their height can be as great as 30 feet or more (100 feet in extreme cases), and they can move inland several hundred feet. Before the Asia Tsunami 2004, a few Bangladesh is ever thought that Bangladesh was vulnerable to tsunami hazards.

(F) Salinity Intrusion

Saline water intrusion is mostly seasonal in Bangladesh; in winter months the saline front begins to penetrate inland, and the affected areas rise sharply from 10 percent in the monsoon to over 40 percent in the dry season. Coastal districts such as Satkhira, Khulna, Bagerhat, Barguna, Pataskala, Barisal are the victims of salinity intrusion. It is observed that dry flow trend has declined as a result of which sea flow (saline water) is traveling far inside the country resulting in contamination both in surface and ground water.

(G) Landslide

Recently landslide has emerged as a major hazard, particularly after the Chittagong Landslide 2007. In Bangladesh, landslides are mostly triggered by heavy rainfall. However, underlying causes of landslide include deforestation, hill cutting, unregulated development work, etc. Moreover, poverty and landlessness force poor people to live in the risky hill-slopes

(H) Drought

Bangladesh faces unpredictable drought hazard in the dry monsoon due to inadequate and uneven rainfall. It varies from place to place, however, and the northwestern region suffers most from the drought. As much as 17% of the Aman crops, the main paddy crops in the wet season, may be lost in atypical year due to drought. Though this is an annual phenomenon, the last severe drought faced by Bangladesh was in 1994. In view of persistent food shortage, this is a catastrophe. Bangladesh is at higher risk from droughts. Between 1949 and 1991, droughts occurred in Bangladesh 24 times.

(I) Earthquake

Bangladesh and the northeastern Indian states have long been one of the seismically active regions of the world, and have experienced numerous large earthquakes during the past 200 years. A seismic zoning map and detailed seismic design provisions have been incorporated in Bangladesh National Building Code (BNBC) 1993. The record of approximately 150 years shows that Bangladesh and the surrounding regions experienced seven major earthquakes (with $M_b = 7$). In the recent past, a number of tremors of moderate to severe intensity had already taken place in and around Bangladesh.

2.2.1 Adapting to Climate Change

The people of Bangladesh have adapted over generation to the risks of floods, droughts and cyclones. In areas where inundation is a risk, they raise their houses on mounds, above the normal flood level, and adjust their cropping patterns in all parts of the country adapt to local flooding and rainfall patterns by growing a range of indigenous and high-yielding varieties of rice and other crops. Rural roads, paths, tracks and other infrastructure, such as schools, are also raised above flood level, where possible¹⁶.

Supporting communities and people in rural areas to strengthen their resilience and adapt to climate change will remain a high priority in coming decades. However, with increasing urbanization and economic growth, the type of risks Bangladesh faces will change. New urban areas must be built to be climate resilient. This will call for better planning to ensure that the pattern of urbanization takes account of the Likely risks from climate change¹⁷. Over the decades, Bangladesh has also learnt how to plan and implement the programs more sustainably by involving communities in planning, construction and management¹⁸.

2.2.2 Mitigation Activities

Even though Bangladesh's contribution to the generation of GHGs is minuscule, the country wishes to play its part in reducing emissions now and in the future. The mitigation activity must be consistent with the country's energy security as the demand for energy will increase with the quickening of the pace of development. GoB, therefore, encourages increased energy and cost efficiency in the development and utilization of conventional energy. Emphasis is also given to the development of renewable energy, particularly solar homes and biogas plants so that the emission is as small as possible without jeopardizing the access to energy. In partnership with civil society, a major nationwide program of social forestry has also been implemented and coastal 'greenbelts' has been planted as a key adaptation-mitigation strategy. As Bangladesh industrializes and develops coal reserves, the country will seek the transfer of state-of-the-art technologies from developed countries to ensure that the country follows a low-carbon growth path. Bangladesh is also committed to reducing GHG emissions from agriculture and urban waste management. The country is further committed to the development of forestry resources and in this regard is exploring all avenues including the mechanisms under REDD (Reducing Emission from Deforestation and Forest Degradation). Currently Bangladesh has two Clean Development Mechanism (CDM) projects concerned with solar energy and waste management¹⁹. It looks forward to increasing the number of similar programs and experimenting with new instruments to generate carbon credits and facilitate carbon market financing in the future Climatic Change Benchmark and Targets for the SFYP.

3 Response, Gaps and Limitation

Since the 1970s, the Government of Bangladesh, with the support of development partners, has invested in flood management, flood protection and drainage; and irrigation schemes to protect urban areas from rainwater and river flooding during the monsoon season. In the coastal areas, Bangladesh has implemented coastal embankment projects, coastal green belt project involving mangrove planting constructed over 2000 cyclone shelters. Moreover, Bangladesh has also implemented comprehensive disaster management projects, involving community-based programmers and early warning systems for floods and cyclones and undertaken agricultural research programmes to develop saline, drought and flood-adapted high yielding varieties of rice and other crops, based on the traditional varieties evolved over centuries by Bangladeshi farmers. These investments in 'climate proofing' the country have had a major impact on economic growth

16 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 18, Ministry of Environment and Forests

17 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 18, Ministry of Environment and Forests

18 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 19, Ministry of Environment and Forests

19 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 23, Ministry of Environment and Forests

and poverty reduction. Average annual food grain production in Bangladesh has grown from about 9 million in the mid-70's to 28 million metric tons today, which has raised rural incomes and created jobs for poor people in agriculture and related sectors, and made the country largely food secure. Over the last 10-15 years, the number of fatalities from natural disasters has declined, as the country's ability to manage risks, especially floods and cyclones, has improved and community-based systems have been put in place²⁰.

Over the decades, Bangladesh has also learnt how to plan and implement these programmes more sustainably by involving communities in planning, construction and management. So it is essential to undertake climate change investments with communities, learn from them, build on their knowledge of their local environments, and ensure that proposed investments meet their needs. The Government of Bangladesh recognizes that tackling climate change requires an integrated approach involving many different ministries and agencies, civil society and the business sector. There is also a need to strengthen the capacity of Government and other organization to plan and implement development programmes. Many development organizations need to strengthen their regular programmes more effectively and rise to the challenge of climate change²¹.

But, still now adequate steps have not been taken to mainstream climate change adaptation into development activities; budget constraints and knowledge management still remain as the constraints to climate change response.

3.1 Policy Drivers

It is important to recognize that climate change is not something for which any quantitative bench mark in physical terms can be set. The agenda is large and involves creation and management of knowledge, formulation policies, and development of institutions. It also requires coordination and collaboration with regional and global partners. There exists several national level orders, plans, laws relating to disaster response and management. These are described below:

(A) Bangladesh Climate Change Action Plan 2009

The Climate Change Strategy and Action Plan of Bangladesh is a part of the overall development strategy of the country. The climate change constraints and opportunities are being integrated into the over-all plan and programmes involving all sectors and processes for economic and social development²².

The Bangladesh Climate Change Strategy and Action Plan (BCCSAP) builds upon the country's long history of climate sensitive interventions by way of policies, programmes and projects running back decades as well as the climate- specific actions in more recent years. The elements of the evolving strategy have been expressed most fully in the country's submission on Bali Action Plan. On the other hand, while mitigation is now every country's responsibility, it is to be based on the principle of Nationally Appropriate Mitigation Actions (NAMA) to be determined by the countries themselves. Based on these globally accepted principles, the objective of Bangladesh Climate Change Strategy is to increase the country's resilience to climate change; reduce and/ or eliminate the risks climate change poses to national development; and rapidly develop the country, following a low-carbon growth path. The strategy will be achieved through the implementation of an Action Plan, which will have six pillars comprising (i) Food security, social protection and health; (ii) Comprehensive disaster management; (iii) Infrastructure development; (iv) Research and knowledge management; (v) Mitigation and low-carbon development; and (vi) Capacity building and institutional development²³.

20 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 18-19, Ministry of Environment and Forests

21 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 19, Ministry of Environment and Forests

22 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 3, Ministry of Environment and Forests

23 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 24, Ministry of Environment and Forests

(B) Standing Orders on Disaster (SOD), 2010

The Standing Orders on Disaster outlines the disaster management arrangements in Bangladesh and describes the detailed roles and responsibilities of Committees, Ministries, Departments and other organizations involved in disaster risk reduction and emergency response management, and establishes the necessary actions required in implementing Bangladesh's Disaster Management Model, e.g., defining the risk environment, managing the risk environment, and responding to the threat environment²⁴.

(C) National Plan for Disaster Management 2010-2015

The National Plan for Disaster Management 2010-2015 has been formulated in 2010. Scopes of the plan are as follows:

(a) Analyze the natural and man-made disaster threats including climate change, (b) Identify by further detailed analysis who, what and how these are vulnerable to the occurrence of these threats, (c) Investigate possible measures to prevent occurrence of the disaster events, mitigate the effects of disaster events and preparedness, (d) Determine responsibilities for prevention, mitigation and preparedness planning and action should lie in the Government, non-government organizations (NGOs) and the private sector, (e) Make provision in the national budget for funding for Disaster Reduction and a contingency fund to meet the immediate needs of disaster relief, at all administrative levels of the Administration, (f) Ensure that the costs of disaster relief and post-disaster recovery are managed and coordinated by a high level committee to avoid duplication or waste, and (g) Ensure an effective system within Government to link and coordinate the processes of planning and the management of sustainable development, environmental management and disaster reduction²⁵.

(D) Disaster Management Act, 2012

The Disaster Management Act creates the legislative framework under which disaster risk reduction and emergency response management is undertaken in Bangladesh, and the legal basis from which activities and actions are managed. It also creates mandatory obligations and responsibilities on ministries, committees and appointments²⁶.

Besides, there are a numbers of policies, national level plans and acts; and few pipe line policies, plans and acts related to urban development that may contribute to climate change adaptation, if the issue of climate change adaptation is integrated. These are discussed below:

(E) Perspective Plan for Bangladesh 2010-2021

In recognition of the long -term development challenges, the Government has adopted the Vision 2021. The Vision 2021 and the associated Perspective Plan 2010-2021 have set solid development targets for Bangladesh by the end of 2021. Those targets if achieved will transform socio-economic environment of Bangladesh from a low income economy to the first stages of a middle income economy. Along with higher per capita income, Vision 2021 lays down a development scenario where citizens will have a higher standard of living, will be better educated, will face better social justice, will have a more equitable socio-economic environment, and the sustainability of development will be ensured through better protection from climate change and natural disasters²⁷.

24 Govt.of Bangladesh (2010), Standing Order on Disaster, Disaster Management Bureau, Disaster Management and Relief Division, Ministry of Food and Disaster Management.

25 Govt.of Bangladesh (2010), National Plan for Disaster Management, 2010-2015, P 3, Disaster Management Bureau, Disaster Management and Relief Division.

26 Govt.of Bangladesh (2012), Disaster Management Act, 2012, Department of Disaster Management, Disaster Management and Relief Division.

27 Govt. of Bangladesh (2012), Outline Perspective Plan for Bangladesh, 2010-2021, Macro and Perspective Planning wing, General Economic Division, Planning Commission.

(F) The Sixth Five Year Plan (FY 2011-FY 2015)

The implementation of Vision 2021 will be done through two medium term development plans, with the first spanning FY11-15. This Five Year Plan is the sixth in the series of development plans in Bangladesh starting in 1973. Even with higher growth, better jobs and better access to essential services, a part of the under-privileged population - among them poor women and people from ethnic groups and socially excluded groups - still will likely be left out. Additionally, substantial risks are posed by natural disasters and climate change for this vulnerable population. To address this challenge, the Sixth Plan aims at significantly strengthening the social protection programs²⁸.

(G) National Water Management Plan, 2000

National Water Management Plan (NWMP) has been formulated in the year 2000. The plan has divided the whole Bangladesh into eight hydrological regions on the basis of main environmental characteristics. The environmental issues of importance to the NWMP are expressed as Important Environmental Concerns (IECs). The priority national IECs are: (i) water related diseases/safe drinking water, (ii) surface water quality, (iii) ground water quality, (iv) sensitive areas/biodiversity, (v) floods and drainage, (vi) erosion, accretion and sedimentation (vii) cyclones, (viii) fish and fish resources, (ix) navigation, accretion/sedimentation (x) low rainfall and river flows²⁹.

(H) The National Adaptation Programme of Action (NAPA)

In 2005, the Government of Bangladesh launched its National Adaptation Plan of Action (NAPA), in partnership with other stakeholders, which highlights the main adverse effects of climate change and identifies the adaptation needs. The proposed Climate Change Unit under Ministry Environment and Forests is expected to be tasked with the mainstreaming climate change into national development planning along with the Climate Change Focal Points in various ministries³⁰.

(I) The Bangladesh Delta Plan 2100

The Delta Plan started in 2014 and the formulation of Delta 2100 is expected to complete in 2016. The plan will integrate planning from delta sectors and from all across the country to come a holistic plan for the Bangladesh Delta. The delta plan will be grounded in a long term vision of the deltas future. This long term vision, combined with the use of scenarios, allow planning to be adaptive and dynamic by constantly taking in to account uncertainties in future development in e.g., climate change, socio-economic development, population growth and regional cooperation. The Delta Plan is more than just a onetime planning exercise and aims provide the foundation for permanent delta governance in Bangladesh through the outlining of a delta framework. Among all the key points of the Delta Plan, the climate change related key point is to enable the government to integrate climate change adaptation in a more strategic, knowledge based and consistent way, making efficient use of limited natural and economic resources in Bangladesh³¹.

(J) National Disaster Management Policy (to be formulated and adopted)

The National Disaster Management Policy defines the national policy on disaster risk reduction and emergency response management, and describes the strategic policy framework and national principles of

28 Govt. of Bangladesh (2009), The Sixth Five Year Plan, FY 2011-FY 2015, Part 1, Strategic Direction and Policy Framework, P 2, Ministry of Planning

29 Govt. of Bangladesh (2000), National Water Management Plan Project, Draft Development Strategy, Vol. 11, Annx O: Regional Environmental Profiles, Water Resources Planning Organization, Ministry of Water Resources.

30 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 20, Ministry of Environment and Forests

31 Govt. of Bangladesh (2015), Information Leaflet, Workshop on Scenario Development: Bangladesh Delta Plan formulation Project, Held on 11-12 February, 2015, NEC Conference Room, Planning Commission, General Economic Division, Planning Commission.

disaster management in Bangladesh. It is strategic in nature and describes the broad national objectives and strategies in disaster management³².

3.1.1 Main Opportunities for Better Integrating Climate Change into Policies over the Next Three Years

There are ample opportunities for better integrating climate change into national policies over the next three years under the following pipeline policy, plan and act which are described below:

- (a) **National Urban Sector Policy 2014, (draft)** proposed by Local Government Division, Ministry of Local Government, Rural Development and Cooperatives as the policy is under processing for approval by the government of Bangladesh.
- (b) Besides, **Urban and Regional Planning Act, 2014**, formulated by Urban Development Directorate (UDD) is under processing for enactment by the government. Development control and climate change adaptation shall be monitored and enforced under this act. There is a provision under clause no. 24 of the proposed act, where procedure of mainstreaming climate change adaptation and mitigation into landuse planning will be incorporated, under which all land use plans shall be implemented, monitored and enforced (website: www.udd.gov.bd (in Bengali)).
- (c) Moreover, UDD has proposed a national level comprehensive planning package project entitled **“National Comprehensive Development Plan for the Whole Country”**, which will translate all national level policies and strategies into space and mainstream climate adaptation into planning package in a holistic approach. It is to be mentioned here that this pipeline project has been proposed under the **“Sixth Five Year Plan-FY 2011-FY2015”** by Planning Commission and shall also be incorporated under the upcoming **“Seventh Five Year Plan-FY 2016-FY2020”** of the Planning Commission; and
- (d) Above all the Planning commission has undertaken a-100 year planning project entitled **“The Delta Plan 2100”** (ref. sec. 3.1).

3.1.2 Policy Overview

An overview of major policies is given below:

Urban/Local Policy (Law, national strategy etc.)	Is there such a policy in your country (y/n)	Official Name	How is climate change integrated	How does this policy impede urban/local climate change action?	Other comments
National Urban/ National Urbanization Framework	y	National Urban Sector Policy, 2014 (draft)	Climate change is not directly integrated in this policy	If national level development plan is prepared on the basis of the policy, this may impede urban/local climate change action indirectly	There is ample opportunity to mainstream climate change into the policy

32 Govt. of Bangladesh (2010), National Plan for Disaster Management, 2010-2015, P 44, Disaster Management Bureau, Disaster Management and Relief Division.

Urban/Local Policy (Law, national strategy etc.)	Is there such a policy in your country (y/n)	Official Name	How is climate change integrated	How does this policy impede urban/local climate change action?	Other comments
Housing Policy	y	National Housing Policy, 2008 (draft)	Climate change is not directly integrated in this policy	The policy emphasized on disaster resilient housing	By addressing disaster resilient housing, the policy indirectly addressed climate change in housing sector
Urban Infrastructure (please list specific policies separately)					
National Land Use Policy	Y	National Land Use Policy, 2001	Climate change is not directly integrated in this policy	The policy emphasized on conserving water body and forest; and environmental balance	By addressing conservation of water body and forest and environmental balance, the policy indirectly addressed climate change in land use management
National Water Policy	Y	National Water Policy, 1999	Climate change is not directly integrated in this policy	The policy emphasized on dealing with hydrological hazard and environmental conservation	By addressing hydrological hazard and environmental conservation, the policy indirectly addressed climate change in water management
Environmental Policy	Y	Environmental Policy, 1992 and Implementation Programme	Climate change is not directly integrated in this policy	The policy emphasized on environmental conservation and protection against natural hazards	By addressing environmental conservation and protection against natural hazards, the policy indirectly addressed climate change in water management

Urban/Local Policy (Law, national strategy etc.)	Is there such a policy in your country (y/n)	Official Name	How is climate change integrated	How does this policy impede urban/local climate change action?	Other comments
Agricultural Policy	Y	National Agricultural Policy, 1999	Climate change is not directly integrated in this policy	The policy addressed on water logging and developing salinity resistant species for crop production	By addressing development of salinity resistant species, the policy indirectly addressed climate change issue
Industrial Policy	Y	Bangladesh Industrial Policy 2005	Climate change is not directly integrated in this policy	There is no provision of hazard mitigation of climate change in the policy	Climate change issue is required to incorporate in the policy
Energy Policy	Y	Renewable Energy Policy of Bangladesh 2002	Climate change is not directly integrated in this policy	The policy emphasized on ensuring environmentally sound sustainable energy development programs causing minimum damage to environment and conducting Environmental Impact Assessment (EIA) for establishing any renewable energy project	By addressing ensuring environmentally sound sustainable energy development and provision of conducting EIA, the policy indirectly addressed climate change issue
Multi-level governance, decentralization (Please list specific policies separately)					Provincial or Regional level governance does not exist in Bangladesh. These only two-tier administrative system exist in Bangladesh (central government and local government)

Urban/Local Policy (Law, national strategy etc.)	Is there such a policy in your country (y/n)	Official Name	How is climate change integrated	How does this policy impede urban/local climate change action?	Other comments
National Building Code	Y	National Building Code, 1993 (The Building Code is being reviewing by government and green building concept has been incorporated into the code)	Climate change is not directly integrated in this policy	The policy emphasized on ensuring environmentally sound sustainable development (energy efficient building, gray water management and earthquake resilient building) has been incorporated into the Code	
Brief Summary on CC legislation/ energy/ environment etc. And urban development / local role	Y	National Environment Committee under Ministry of Environment and Forestry has been established in 1992	The Committee reviews progress of the implementation of the National Environment Policy and Action Plan and UNCED decisions, identifies Inter-Ministerial issues concerning implementation of Environmental Policy, and gives direction on those issues	The Committee indirectly impedes urban/local climate change action by identifying inter-ministerial issues concerning implementation of Environmental Policy.	It is very much necessary to mainstream climate change issues through landuse planning in Bangladesh for climate change resilient development

3.2 Financing for Climate Response

The Government of Bangladesh has recently established a National Climate Change Fund, with an initial capitalization of \$45 million later raised to \$100 million, which will focus mainly on adaptation. Bangladesh is also going beyond its borders to try to find common cause with its neighbors to manage climate change impacts through regional action plans, as demonstrated in the 2008 SAARC Ministers of Environment meeting, held in Dhaka. The country is also seeking to enhance cooperation with neighbours on key issues, including water security³³.

The Ministry of Environment and Forest is currently working out the costs of implementing the ten-year Action Plan, in consultation with the Line Ministries. A distinction is being made between activities which are part of the regular national development programme and the incremental work that will be financed under the Action Plan. It is estimated that a \$500 million programme will need to be initiated in year 1 and 2 and that the total cost of programmes commencing in the first five years could be of the order of \$ 5 billion³⁴.

Adaptation to climate change will place a massive burden on Bangladesh's development budget and international support will be essential to help country rise to the challenge. Given the specific nature, however, of the problem of climate change particularly those related to future bio-physical and natural

33 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 1, Ministry of Environment and Forests

34 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 31, Ministry of Environment and Forests

processes which are as yet uncertain and the intimate link of the relevant national actions with international negotiations for emission control as well as their financing and technological support by and from the developed countries, for continuous monitoring of processes and events (natural scientific, negotiations). Hence, Bangladesh is seeking the strong political commitment and support of the international community to assist in implementing its long-term climate-resilient strategy. Bangladesh calls on the international community to provide the resources needed to meet the additional costs of building climate resilience and also for adopting cleanest energy development technology³⁵.

3.3 Local Capacity

The Climate Change Action Plan is a 10-year programme (2009-2018) to build the capacity and resilience of the country to meet the challenge of climate change. The needs of the poor and vulnerable, including woman and children, will be mainstreamed in all activities under the Action Plan³⁶. To do this the country has already made climate change management an integral part of its national development strategy including the Vision 2021 and the Sixth Five Year Plan and upcoming the Seventh five Year Plan; and have started to build the country's capacity so that the nation is able to tackle the adverse impacts of climate change, in a routine way, as part of the development process. This work must be scaled up urgently. Any delay will increase the risks associated with climate change, which could be expensive to manage later on but, more importantly, the human costs will be immeasurable³⁷.

The Government recognizes that tackling climate change requires an integrated approach involving many different ministries and agencies, civil society and the business sector. There is also a need to strengthen the capacity of Government and other organizations to plan and implement development programs. Development organizations need to strengthen their capacity so that they can implement their regular programs more effectively and rise to the challenge of climate change³⁸.

To meet the challenge of climate change, the capacity of government ministries and agencies, civil society and the private sector will be strengthened under the pillar "Capacity Building and Institutional Strengthening in the following way³⁹:

- Review and revise, where appropriate, all government policies (sector by sector) to ensure that they take full account of climate change and its impacts
- Mainstream climate change in national, sectoral and spatial development planning (in government ministries and agencies, Local Government, the private sector, civil society and communities) and ensure that impacts on vulnerable groups and women are prioritized in plans
- Build the capacity of key government ministries and agencies to take forward climate change adaptation (e.g., Ministry of Food and Disaster Management, Bangladesh Water Development Board, local government Engineering Department; National Agricultural Research System, the Health system, the Ministry of Women's and Children's Affairs)

35 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 25, Ministry of Environment and Forests

36 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 27, Ministry of Environment and Forests

37 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 24, Ministry of Environment and Forests

38 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 19, Ministry of Environment and Forests

39 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 29, Ministry of Environment and Forests

- Build the capacity of the government to undertake international and regional negotiations on climate change. Regional and international cooperation is essential in order to build necessary capacity and resilience
- Build the capacity of the government, civil society and the private sector on carbon financing to access various global climate funds
- Build the capacity for education and training of environmental refugees to ease and facilitate their migration to other countries and integration in new societies

3.4 Institutional Arrangements

The government of Bangladesh recognizes that it needs to strengthen existing institutions and may also need to create and develop new ones to respond effectively to the enormous challenges of climate change. A National Steering Committee on Climate Change has been established to coordinate and facilitate national actions on climate change (Ref. Appendix- Figure 3.4). It is chaired by the Minister of the Ministry of Environment and Forests and Comprises the Secretaries of all climate-affected Ministries and Divisions, and representatives of civil society and the business community. It reports to the National Environment Committee, chaired by the Prime Minister. The National Steering Committee on Climate Change also provides guidance on international climate change negotiations, including bilateral, multilateral and regional programmes for collaboration, research, exchange of information and development. A Climate Change Unit will be set up in the Ministry of Environment and Forests to support the National Steering Committee on Climate Change. It will work with Climate Change Focal Points to be set up in all ministries. In fact, 8 are already in place⁴⁰.

The Climate Change Focal Points which will look after, design and help in implementation of sectoral policies, programmes and projects from climate change perspectives as and when so required within the framework of the planned development process. The Climate Change Unit will coordinate and facilitate the works of the Climate Change Focal Points in all the ministries as well as network with all stockholders, the people in general, the civil society, NGOs, the private sector and international actors in an inclusive manner⁴¹.

The Bangladesh Climate Change Strategy and Action Plan was originally developed through a participatory process involving all relevant Ministries and agencies, civil society, research organizations, the academia and the business community. Programmes funded under the Action Plan will be implemented by line ministries and agencies, with participation, as appropriate of other stakeholder groups, including civil society, professional a research bodies and the private sector. The BCCSAP 2009 will be reviewed periodically and revised, as necessary, in line with national development priorities, emerging scientific and technical knowledge and the outcomes of global negotiations under UNFCCC and other UN-led climate change negotiation processes⁴².

The main ministries of the Government of Bangladesh involved in climate change are the Ministry of Environment and Forests and its agencies (e.g. the Department of Environment (DoE) and Department of Forests (DoF); Food and Disaster Management (MoFDM), which includes the Disaster Management Bureau (DMB) and the Comprehensive Disaster Management Programme (CDMP); Water Resources, which includes the Bangladesh Water Development Board and other research and forecasting organization; Local Government, Rural Development and Cooperatives, which includes the Local Government Engineering Department (LGED) and the Department of Public Health Engineering (DPHE); Agricultural Research

40 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 30, Ministry of Environment and Forests

41 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 3, Ministry of Environment and Forests

42 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 30, Ministry of Environment and Forests

System, which develops new crops and practices suited to different climatic and salinity conditions in the country; Livestock and Fisheries; Health and Family Welfare; Roads and Railway Division, Ministry of Communication, Ministry of Foreign Affairs and the framing of development plans as well as approval of programmes and projects⁴³.

Bangladesh has a large and vibrant civil society sector, which includes world-renowned organizations like BRAC and the Grameen Bank. Civil society has made a major contribution to poverty reduction and has increased the resilience of poor people to natural disasters, through its microfinance, income generation, health and education programmes. Civil society's experience and capacity will be used to develop innovative approaches to adaptation (including possible partnerships with the private sector). It is to be noted that Bangladesh has pioneered community-based approaches to reducing vulnerability to climate change, which are being shared with other developing countries⁴⁴.

3.5 Examples of Good Practices

There are several good practices in implementing plans in Bangladesh. Among them significant good practices are discussed below:

3.5.1 Hatirjhil Project

The Hatirjhil area is a water retention pond designated by Dhaka Water and Sanitation Authority (DWASA) and the retention pond was gazetted by Rajdhani Unnayan Karttripakkha (RAJUK) under Dhaka Metropolitan Development Plan (DMDP). The area was a marshland with very poor environmental condition including very poor water quality, sludge, odor etc.. An initiative of the government has changed the environmental quality of the area by removing the turbid water and sludge and enhanced the quality of environment of whole area. It was a multi-sectoral approach, which was successfully implemented by the government. Now it has become the central heart of the city.

3.5.2 Implementation of Master Plan for Munshiganj Municipality

Master Plan for Munsiganj Municipality has been prepared by UDD in 2006. It was a typical blue print traditional master plan, which had been prepared by UDD as a deposit work by deploying its own resources. The municipal authority is implementing the plan step by step. Up to year 2015, bus terminal and roads in the municipality has been constructed as per the provisions made under the master plan.

3.5.3 Implementation of Structure Plan, Master Plan and Detailed Area Plan for Barisal Divisional Town

Recently, UDD has shifted from preparing traditional blue print master plan to more flexible structure planning process. The Structure Plan, Master Plan and Detailed Area Plan for Barisal Divisional town was the first endeavour in the process of such paradigm shift. The plan was formulated by Urban Development Directorate (UDD) in 2010. After five year time span, a noticeable portion of planning provisions made under the planning package has been implemented including widening of roads, establishment of water treatment plant, fire service station and residential. Barisal City Corporation is also issuing No Objection Certificate (NOC) as per provisions made under the Planning Package.

43 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 19, Ministry of Environment and Forests

44 Govt. of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 21, Ministry of Environment and Forests

3.5.4 Mymensingh strategic Development Plan (MSDP), 2011-2031

With the assistance from Comprehensive Disaster Management Programme (CDMP) II, Urban Development Directorate (UDD), is implementing a pilot project on “**Preparing a Module for Mainstreaming Disaster Risk Reduction Measures into Comprehensive Land Use Development Planning and Management for Mymensingh Strategic Development Planning (MSDP) Area**”, where the existing Mymensingh municipality is situated as a core urban area. MSDP is being prepared not only the municipality itself but also considering regional context by integrating adjoining ten (10) unions (lowest administrative boundary at local level of rural Bangladesh) [Reference: **Figure 3.5.4 (a), Figure 3.5.4 (b), Figure 3.5.4 (c) respectively in Appendix**].

(a) Addressing the Risk of Disaster

The plan would be prepared by mainstreaming “Disaster Risk Reduction (DRR) into Comprehensive Landuse Planning and Management”. Engineering geological data and information is being interfaced with landuse data and information for the first time in Bangladesh to prepare risk-sensitive land use plan [Reference: **Figure 3.5.4 (d-i), Figure 3.5.4 (d-ii), Figure 3.5.4 (d-iii), respectively in Appendix**]. Since Bangladesh is a flood plain country, plan for MSDP project is being prepared considering protecting and conserving the flood plain and wetland within the project area [Reference: **Figure 3.5.4 (d-iv), Figure 3.5.4 (d-v), Figure 3.5.4 (d-vi), Figure 3.5.4 (d-vii), Figure 3.5.4 (d-viii), Figure 3.5.4 (d-ix) respectively in Appendix**]. Besides, fragile ecological condition of the Brahmaputra river system is also being considered to prepare the plan. So, eventually the plan would provide with all necessary safety measure for the town dwellers of Mymensingh. Moreover, Bangladesh Fire Service and Civil Defense (BFSCD) is concerned with rescue operation during emergencies. Steps have taken to develop a number of volunteers for rescue operation during emergencies under the objectives of Comprehensive Disaster Management Programme (CDMP) II. Keeping this view in mind, all necessary surveys for MSDP project has been conducted by deploying the local young generation with the objective of developing a motivated group in advance.

(b) Surveys and Studies

All surveys and studies including physical feature survey, topographic survey, existing land use survey and other surveys such as Urban and Rural Economy, Study of Social Infrastructure (Education, Religious, Sports, Recreation, Community and Socio-Cultural Services/Facilities etc.), Traffic Survey, Hydrological Study, Formal and Informal Industrial Survey, Recreational Open Space, Health Facilities including Community Health Facilities, Educational Facilities, Agricultural Land Demarcation Survey, Archaeological Study, Pollution Study etc. have been completed [Reference: Figure: 3.5.4 (e)]. Planning phase of the project is already been initiated. Survey data has been rechecked, for example Digital Elevation Model has been checked and adjusted at 231 points. Average error has been found +/-0.21m for rural area and +/-0.14m for urban area (see the detailed into www.msdp.gov.bd). An existing 3-D model for Mymensingh Municipality for the first time in Bangladesh [Reference: **Photo-3.5.4. (e) in Appendix**].

(c) Participation of Different Stakeholders and Local People

Apart from this technical support, the local level government administration such as Deputy Commissioner (DC) of Mymensingh district, local representative the honourable Mayor of Mymensingh municipality, local citizens, local NGOs, local level government and non-government organisations, different stockholders are the key contributors for developing the planning package for next twenty years to come. The plan is being prepared by direct involving local people, elected representative, civil society through Participatory Rapid Appraisal (PRA), by using the social mapping and mental image of the inhabitants who knows their

region best; and also involving all concerned sectors of complex and interrelated urban systems including existing land use, physical features, topography, traffic pattern and transportation system, hydrology, social and economic infrastructure, rural and urban economy and industrial development, recreational open space, archaeology, agricultural land preservation, conservation of nature and ecology, settlement, health, education, administration, pollution, topography and so on [Reference: **Figure 3.5.4 (f-i), Figure 3.5.4 (f-ii), Figure 3.5.4 (f-iii), respectively in Appendix**]. Aim of the project is also establishing inter and intra-regional connectivity, economic base of the town, establishing backward and forward linkage for the industries, promoting better livelihood and circulation system to make the town sustainable and vibrant.

(d) Outcome of the Project

As an outcome of the project, landuse clearance, building approval and occupancy certificate of each building would be provided on the basis of the planning guidelines that would be prepared under MSDP Project and hence, at the end, the output of this ecology sensitive landuse plan would provide a basis, which would help to avoid death toll from different disasters, and building collapse due to unauthorized construction and use like “Rana Plaza” incident at Savar, Dhaka, 2013 in future. Since it is a pilot project on **“Preparing a Module for Mainstreaming Disaster Risk Reduction Measures into Comprehensive Land Use Development Planning and Management for Mymensingh Strategic Development Planning (MSDP) Area”**, a risk sensitive planning methodology that would be developed from the project, which would be adopted for preparing risk-sensitive land use planning for other cities and towns of Bangladesh as Model. As one of the component of the project, creating the legal basis for planning for whole of Bangladesh, “Urban and Regional Planning Act, 2014” has been drafted and submitted to government for further consideration. It is expected that the plan would help to adorn the town with an organized shape which would provide with a beautiful townscape and beautification of the town as well. The real beauty of this project is in the grass root participation of the local people in all levels of planning process of the project.

3.6 Conclusion

Although, there are different national level plans including the Delta Plan 2100, Perspective Plan, the Sixth Five Year Plan etc.; and various sectoral plans at national level including national plan for Disaster Management, National Water Management Plan, Climate Change Action Plan and so on, which are unique in their respective arena, but these are missing spatial dimension. It is not possible to yield a fruitful outcome from these plans and policies, unless and until the provisions made under them are interpreted into space. So, there is a pressing need for integrating the relevant provisions made under these plans and all related policies into a comprehensive planning framework including their spatial translation. This initiative would facilitate forming a complex scenario indicating their inter-relationship, overlapping, gaps and limitations covering their interaction in synchronization or in contradiction; and their cutoff point as well. This would also indicate the specific arena in each sector where intervention is needed. Hence, there is a need for national enabling framework which is comprehensive and having spatial dimension. Keeping this view in mind UDD has undertaken a comprehensive landuse planning project entitled “National Comprehensive Development Plan for the Whole Country” for integrating all the sectoral plans and policies into comprehensive land use plan by translating the sectoral plans and policies into space. Besides, the comprehensive plan would also intend to mainstream climate change into land use planning. This will in turn help bringing all the sectors on a single platform to be climate change adaptive.

4 The Area of Focus and Way Out

The policy and plans are formulated primarily emphasizing a specific sector or even national plan like the Five Year Plan, which emphasized the economy at macro level regardless to spatial dimension. Obviously impact of climate change is reflected on all the sectors, which have specific spatial pattern and dimension whether management, biotic or abiotic inclusive. For instance, adverse impact of climate change is observed in management issue concerning distribution and process of urbanization, functioning and management of urban through people's participation, local, regional and national level urban planning, financial and resource management of urban areas, urban environment and disaster management, urban-rural continuum and linkage, law and order, urban research, database development and management, training and so on; abiotic encompassing land (on, below and above), air and water, urban land management, urban housing, poverty eradication and slum improvement, urban infrastructure and service, urban transportation management and so forth; and biotic comprising biodiversity, agriculture, forest, fisheries and marine resources, poverty eradication and slum improvement, public health and education, gender awareness and sensitivity, prioritization of woman, children, aged, disabled, considering youth as resources, conservation and development of culture, heritage and aesthetics and so and so forth. So, key areas for intervention should be identified to remove their vertical and horizontal barriers.

4.1 Key Areas of Project Intervention

4.1.1 National Urban Plan

To remove the vertical and horizontal barriers to climate change adaptation, a national level comprehensive land use plan is essential to spatially integrate all the relevant sectors on a single platform and by mainstreaming climate change into comprehensive land use planning and also to guide the land use transformation in the whole country to accelerate the economic and socio-political development of the country including address the adverse impacts of climate change and to develop coping strategies against climate change at urban and regional level. Such a Plan for the whole country is also important to protect our agricultural land from any other unplanned transformation. Structure Plan and Urban area plan for the upazila towns/ paurashava is needed to allow the towns to play their active socio-economic role within the Physical Planning, agriculture, transportation, drainage, water Supply, housing and other important relevant sectors. Action Plans would also be needed for those areas where immediate actions are needed, such as Growth Centres, Rural hats/ rural centres, Union headquarter centres etc. To this end, UDD has formulated a project proposal "National Comprehensive Development Plan for the Whole Country" (Figure 4.1.1: in Appendix).

(a) Key Objectives of the Project:

- Review of all sectoral policies, acts and legislations relevant to urban and regional planning, National Physical Plan (Phase I and Phase II) and existing administrative and financial system of Bangladesh considering all tiers of Bangladesh
- Identify the spatial distribution of industries and determination of suitable location of industrial areas, watershed of the existing river system, the spatial distribution of ecologically critical areas, areas vulnerable to different types of disasters and provide guidelines for disaster risk all over the country
- Integrate all national and regional levels plans and programmes of different sectoral agencies
- Physical determination of trends in land use pattern and its time based change for the last two decades (1990-2000- 2010)

- Need assessment for optimum resource distribution, Regional disparity analysis, Corridor development plan along national & regional highways
- Environmental protection, conserving agricultural land, maintaining aesthetic beauty of urban and rural areas; restricting unplanned industrial development and promote planned industrial development in the country

(b) Stages and Main features of National comprehensive Plan

The integrated package of plan would be comprised of 6 (six) Stages as follows:

The 1st Stage, consisting of Strategic Plan through spatial translation of all Sectoral policies and strategies of government of Bangladesh

The 2nd Stage would comprise of these Action Area Plans selected in Stage-I

The 3rd Stage would comprise of the Regional Level Plan through regional disparity analysis on the basis of eco-tone under the guideline of stage-I for the whole country

- **The 4th Stage** would encompass Corridor Development Plan, which would cover preparation of a Development Plan along national and regional highway corridor and feeder roads.

The 5th Stage would cover Industrial Study and Conservation Plan covering earmark the areas where industries have been developed in an unplanned manner and identify suitable location for planned industrial development including establishing connectivity of the industrial areas with different ports (land, water and sea) and business centers.

The Last Stage of the plan would involve the implementation, monitoring and evaluation of the plan. UDD will be the custodian of the plan and will supervise the implementation of the plan.

(c) Main Outputs

- Delineation of hierarchy of land by potential quality of land (above, on and under)
- Guidelines for regional development plan
- Design of integrated urban and rural network for Bangladesh.
- Development of a conservation plan for protecting critically environmentally critical areas and preserving agricultural land.
- Restricting unplanned industrial growth and guidelines for planned industrial development
- Guiding development along the national and regional corridor.
- Mainstreaming climate change adaptation into comprehensive land use planning and associated disaster risk reduction.

4.1.2 Legal Framework

Provisions of the national comprehensive plan would be implemented and enforced under the legal framework entitled “**Urban and Regional Planning Act 2014**” proposed by UDD, which is now under active consideration by the government of Bangladesh for enactment (Ref. “Please visit: www.udd.gov.bd). Under the provision of the act, all the planning and development activities would be coordinated by Urban Development Council, chaired by the Honorable Minister of the Ministry of Housing and Public Works and UDD would be Secretariat of the Urban Development Council.

4.1.3 Cities and Climate Change Initiative (CCCI) Assessment

Basic works of CCCI initiative has been proposed under the national and regional pipeline project at national and regional level encompassing “National Comprehensive Development Plan for the Whole Country” and ‘Eco-Tourism Development Plan for Kuakata Coastal Region” respectively.

4.2 Implementation Partners and Modalities

All the government ministries and agencies under the concerned ministries would be the implementation partner of the national comprehensive plan. Since, the national comprehensive plan will be implemented and development controls will be enforced under the provisions made under the proposed **“Urban and Regional Planning Act 2014”**, an **“Urban and Regional Planning Advisory Council”** consisting of 18 (eighteen) members Appendix (4.1) chaired by the Honorable Minister, Ministry of Housing and Public Works, where UDD would be the secretariat of the council and Director, UDD would be the member secretary of the council; and an **“Urban & Regional Planning Executive Council”** consisting of 19 (nineteen) members (Appendix 4.2) chaired by the Secretary, Ministry of Housing and Public Works would also be formed to provide technical assistance to the advisory council through monitoring and analysis, and also to enforce and coordinate the plan according to the provision made under the proposed act. Member Secretary of the executive council would be Deputy Director (Research and Coordination), UDD.

4.3 Specific Area/Sectors/National Urban Policies of Intervention

There is a pressing need for formulating a separate climate change adaptation policy involving all the sectors that contribute to adverse impact on climate change and climate change adaptation as well. National Housing Policy 1993 has been revised and National Housing Policy 2008 (draft) has been formulated, which can also be an important guideline for constructing climate change resilient housing if climate change adaptation issue is properly addressed. Building Code of Bangladesh 1993 is being revised and a new and comprehensive Building Code is going to be formulated. This building code may be crucial instrument for climate change adaptation and mitigation if climate change is addressed properly. Government has formulated National Urban Sector Policy 2014 (draft). One of the major aim and objective of the urban policy is to undertake effective action to protect against disaster and adverse impact of climate change. Strategy to attain the objective is to build capacity of the local government through participation of local people and the private sector for disaster management. If the objective and strategy of the policy is implemented properly attempt is made to mainstream climate change into urban planning and development through effective implementation of the policy, this may help in coping up climate change adaptation in urban planning.

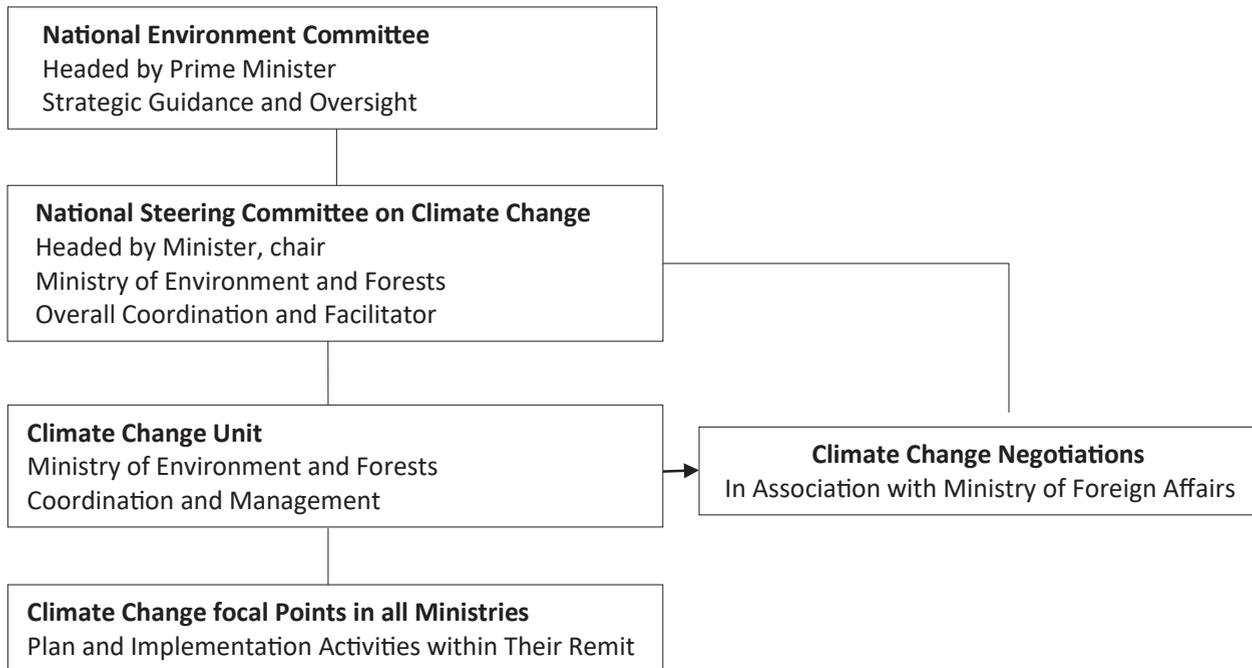
4.4 Synergies and Alignments with Partners and Programmes

Through the national comprehensive plan with necessary legal support from the Urban and Regional Planning Act 2014, climate change will be mainstreamed to urban policy and management. Synergies and alignment with the partners and programmes shall be maintained through the comprehensive plan and the proposed legal framework; and the objective and strategies of the national urban sector policy 2014 would be attained.

The implementation partners would be the members of both advisory council and the executive council, according to the provisions made under the proposed act are shown in Appendix (Table 4.1 and Table 4.2 in Appendix respectively.)

Appendix

Figure 3.4: Chart Showing Climate Change Action Plan Organization



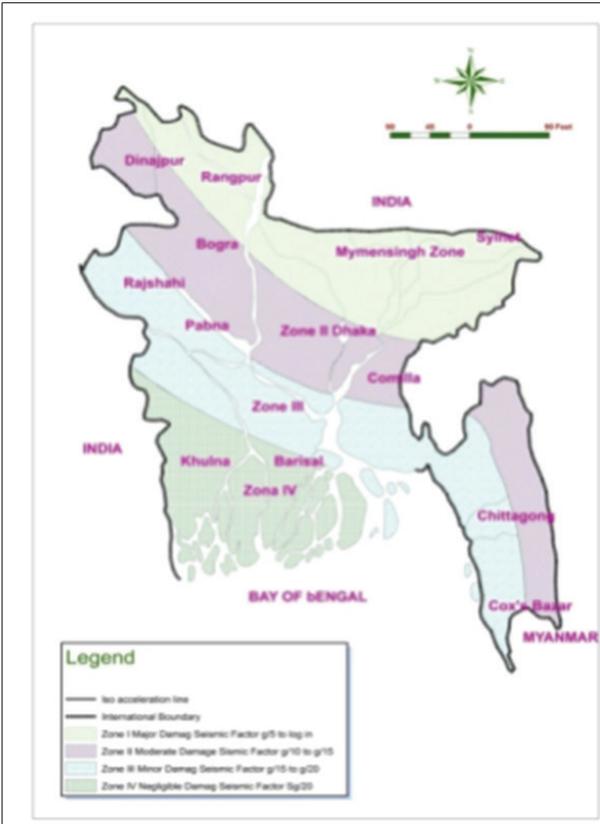


Figure 3.5.4 (a): Map Showing Earthquake Risk Macrozonation of Bangladesh

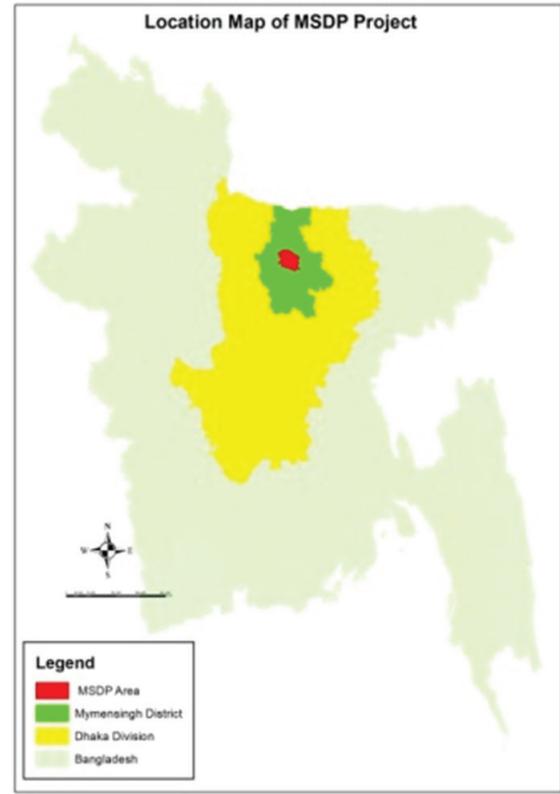


Figure 3.5.4 (b): Map Showing Project Area covering with respect to Country, Division and District Respectively

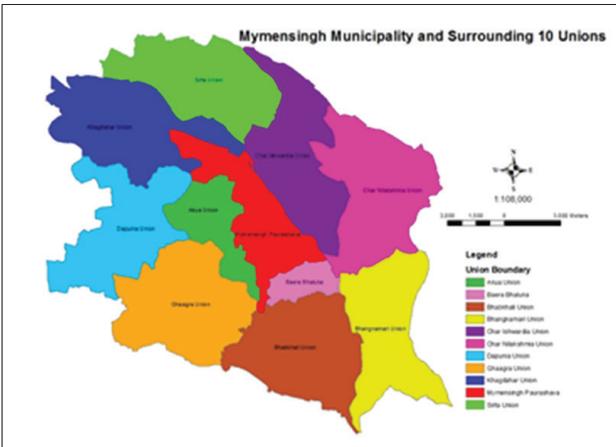


Figure 3.5.4 (c) : Map Showing Project Area covering Mymensingh Municipality and Surrounding 10 (Ten) Unions

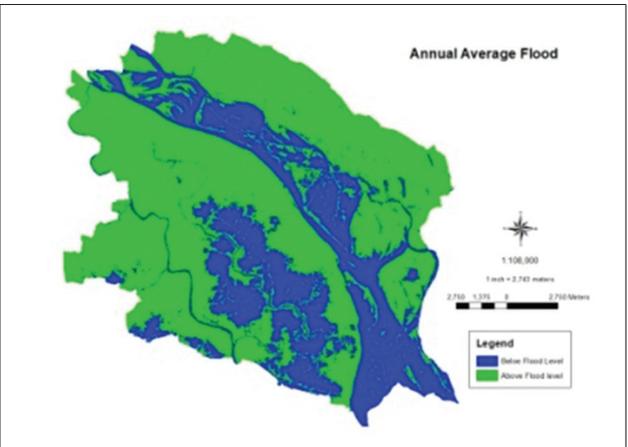


Figure 3.5.4 (d): (i) Annual Average Flood Level prepared from three dimensional (3-D) Satellite Image

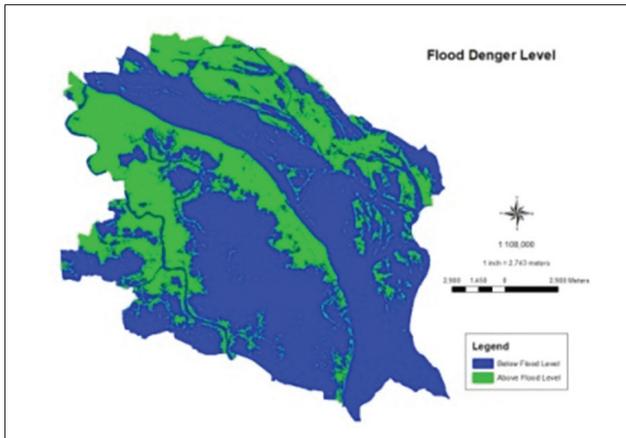


Figure 3.5.4 (d): (ii) Flood Danger Level Map prepared from three dimensional (3-D) Satellite Image

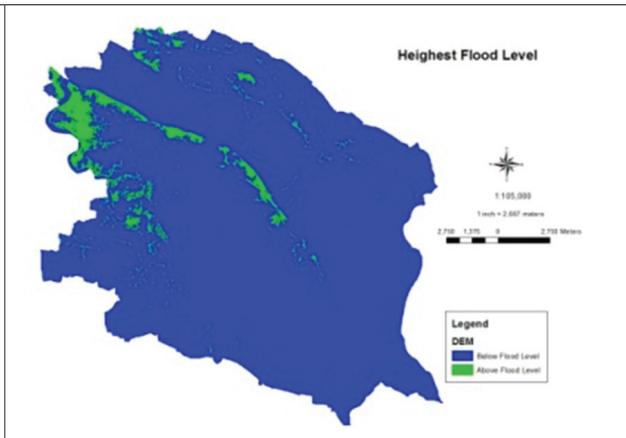


Figure 3.5.4 (d): (iii) Highest Flood Level Map prepared from three dimensional (3-D) Satellite Image

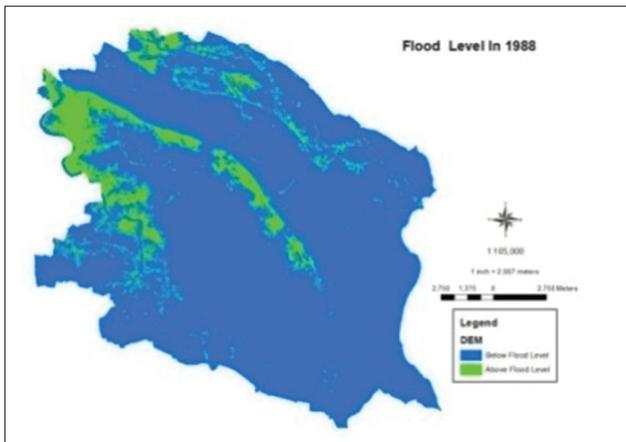


Figure 3.5.4: (iv) Flood map of 1988 prepared from Three Dimensional (3-D) Satellite Image

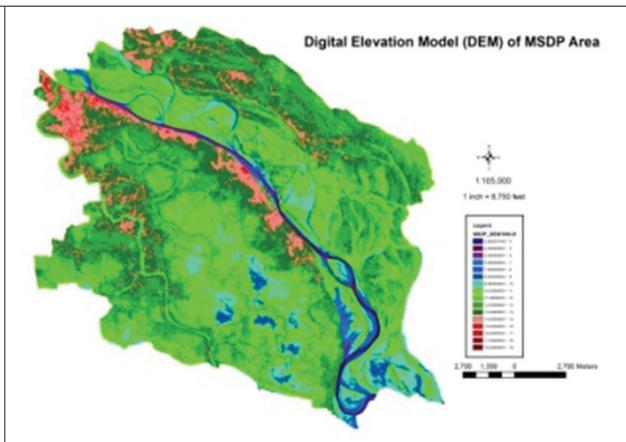


Figure 3.5.4 (d): (v) Digital elevation model (DEM) Prepared from Three Dimensional (3-D) Satellite Image

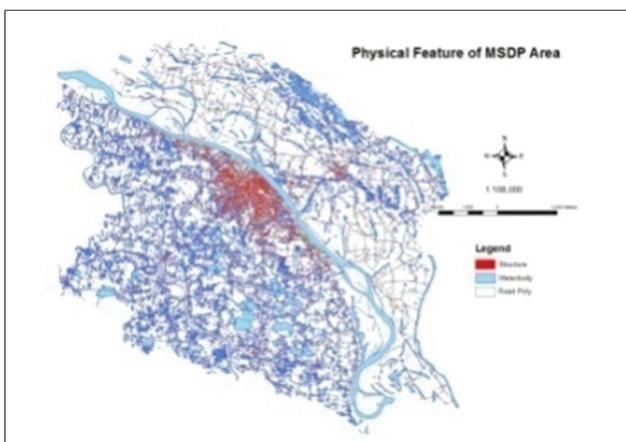


Figure 3.5.4 (d): (vi) Physical Feature Map prepared from three dimensional (3-D) Satellite Image

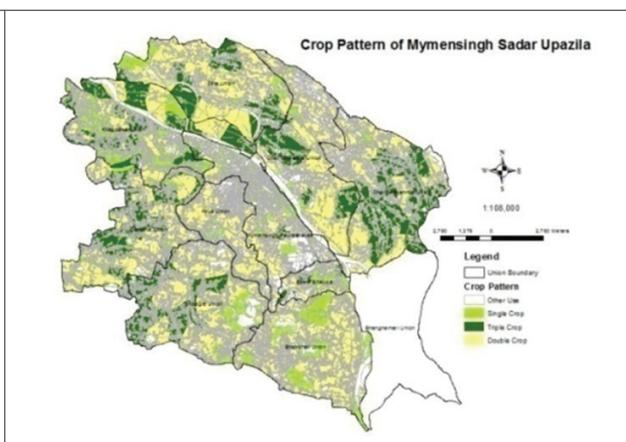


Figure 3.5.4 (d): (vii) Agricultural Cropping Pattern Map of Mymensingh Sadar Upazila Prepared from PRA

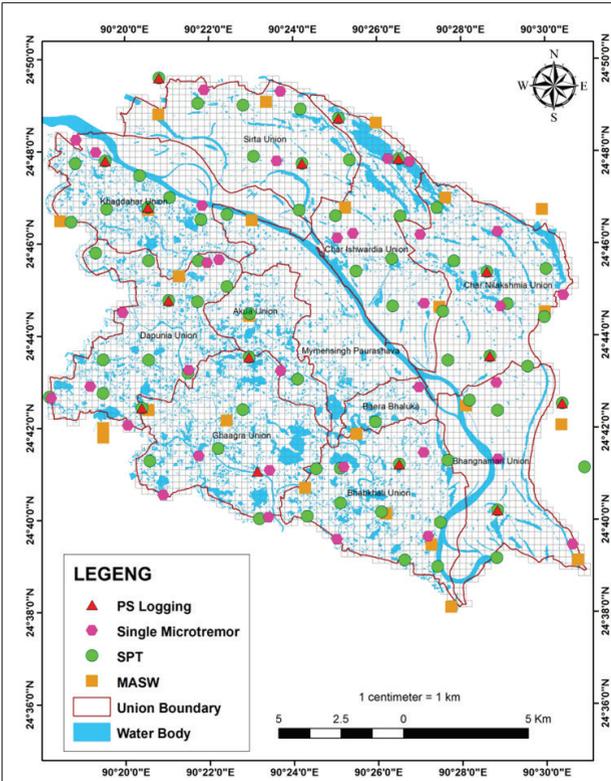


Figure 3.5.4 (d): (i) Location of Engineering Geological Survey

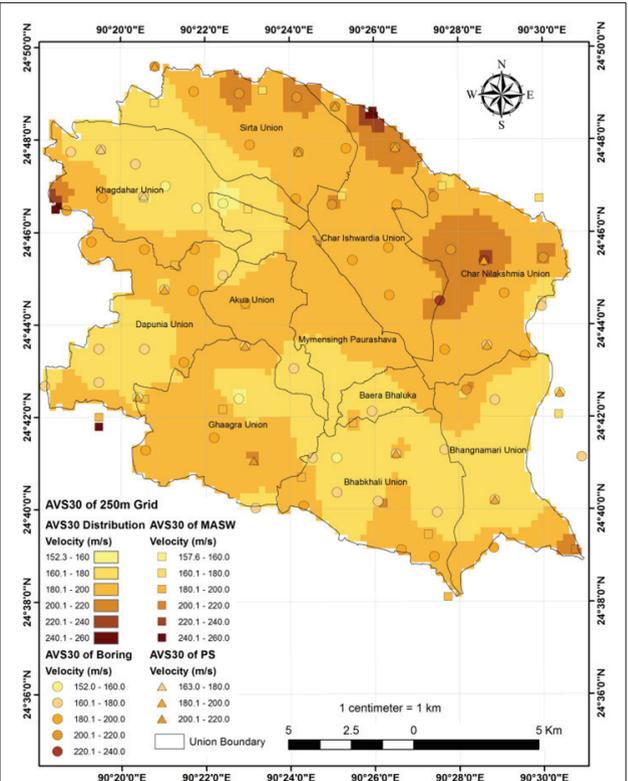


Figure 3.5.4 (d): (ii) composite Result of Engineering Geological Survey

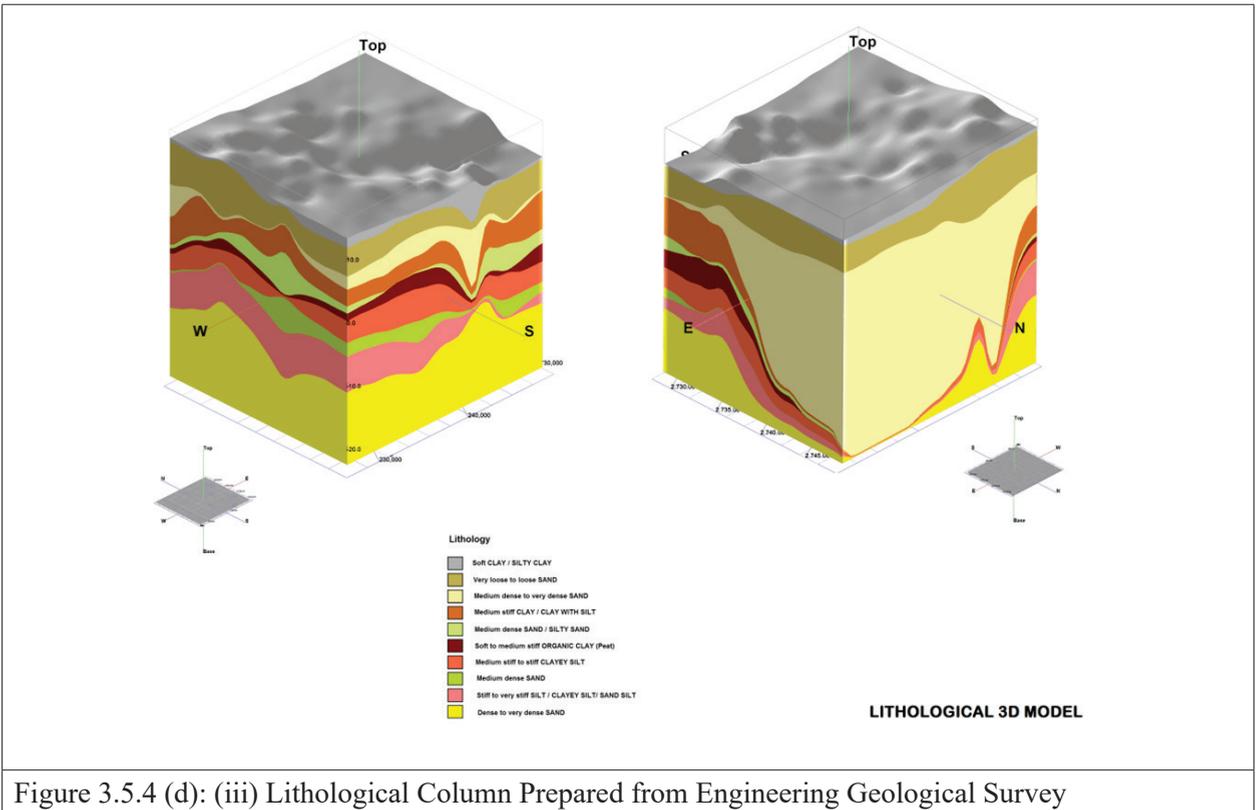


Figure 3.5.4 (d): (iii) Lithological Column Prepared from Engineering Geological Survey



Figure 3.5.4 (f-i): Children Art competition



Figure 3.5.4 (f-ii): PRA with the Mothers'



Figure 3.5.4: (f-iii) PRA Output of Char Nilakshmia Union (Rural PRA)



Figure 3.5.4 (f-iv); PRA Output of Ward No. 1 (Urban PRA)



Figure 3.5.4: (v) 3-D Model of Existing Physical Feature of Mymensingh Municipality

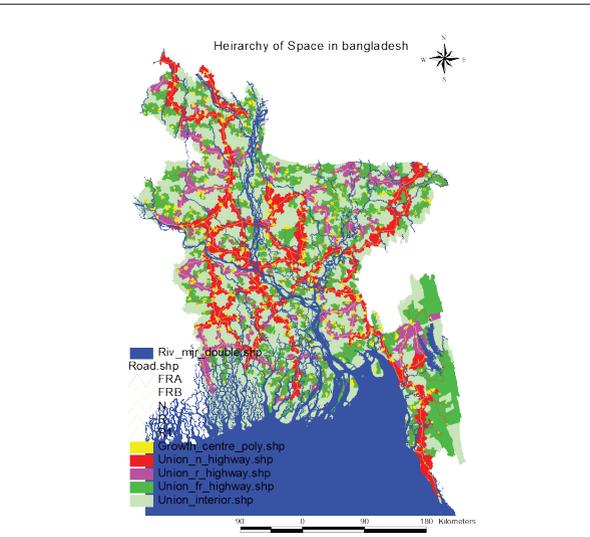


Figure 4.1.1: Unions along National and Regional Highway Corridor and Feeder Road Type I for which Corridor Development Plan would be Prepared

Table 4.1: Formation of Urban and Regional Planning Advisory Council

SI No.	Member	Designation
1	Honorable Minister, Ministry of Housing and Public Works	Chairman
2	Senior Secretary, Ministry of Public Administration	Member
3	Secretary, Ministry of Housing and Public Works	Member
4	Secretary, Ministry of Home	Member
5	Secretary, Ministry of Local Government, Rural Development and Cooperatives	Member
6	Secretary, Ministry of Land	Member
7	Secretary, Finance Division, Ministry of Finance	Member
8	Secretary, Ministry of Industry	Member
9	Secretary, Ministry of Transportation	Member
10	Secretary, Ministry of Agriculture	Member
11	Secretary, Ministry of Disaster Management	Member
12	Secretary, Ministry of Environment and Forest	Member
13	Secretary, Ministry of Civil Aviation and Tourism	Member
14	Secretary, Law and Justice Division, Ministry of Law and Parliament	Member
15	Secretary, Planning Division, Ministry of Planning	Member
16	Secretary, Ministry of Fisheries and Livestock	Member
17	Secretary, Ministry of Water Resources	Member
18	Director, Urban Development Directorate	Member-Secretary

Table 4.2: Formation of Urban and Regional Planning Executive Council

SI No.	Member	Designation
1	Secretary, Ministry of Housing and Public Works	Chairman
2	Chief Engineer, Public Works Department	Member
3	Chief Architect, Department of Architecture	Member
4	Director, Urban Development Directorate	Member
5	Chairman, National Housing Authority	Member
6	Chairman (Concerned,) Development Authority	Member
7	Joint Secretary, Ministry of Local Government, Rural Development and Cooperatives	Member
8	Joint Secretary, Planning Division, Ministry of Planning	Member
9	Joint Secretary, Ministry of Land	Member
10	Joint Secretary, Ministry of Agriculture	Member
11	Joint Secretary, Ministry of Water Resources	Member
12	Joint Secretary, Ministry of Environment and Forest	Member
13	Joint Secretary, Ministry of Disaster Management	Member
14	Joint Secretary, Ministry of Transportation	Member
15	Joint Secretary, Ministry of Industry	Member
16	Joint Secretary (Development), Ministry of Housing and Public Works	Member
17	Joint Secretary, Ministry of Fisheries and Livestock	Member
18	Deputy Director Research and Coordination), Urban Development Directorate	Member-Secretary

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Appendix-I

Group work presentation: Expert Group Meeting on Mainstreaming climate Change into National Urban Policies

Expert Group Meeting 'Mainstreaming Climate Change into National Urban Policies' United Nations Conference Centre, Bangkok, Thailand, 17–18 March 2015

Group work presentations

Country teams



1.1. Identify Gaps And Opportunities For Mainstreaming Climate Change Into Priority Policies

Policy (or policy opportunity) to be reviewed	What are the gaps and opportunities for mainstreaming climate change in these policies?
1. National Urban Sector Policy, 2014	Climate change is not directly integrated into the policy. A gap is coordination among the agencies in terms of policies. An opportunity to mainstream climate change into the sector, given that it is in a draft form.
2. National Disaster Management Policy	It is been drafted and workshops are being organized. There is a standing order on disaster, which can be the entry point for mainstreaming CC
3. Urban and Regional Planning Act 2014	The act is been drafted. Public hearing has been done and it provides opportunities for mainstreaming climate change into the act. It can touch the Delta Plan and into National Urban Sector Policy 2011 as well.
4. The National Adaptation Programme of Action (NAPA)	The programme has been formulated to address the Impact of climate change
5. National Water Management Plan, 2000	Climate change Climate change is not directly integrated into the plan
6. National Plan for Disaster Management 2010-2015	Climate change Climate change has been integrated into the plan
7. Disaster Management Act, 2012 and Standing Orders on Disaster (SOD), 2010	Climate change Climate change is not directly integrated into the act and SOD as well
8. National Housing Policy, 1993 revised on 2008	The policy only mentioned disaster resilient housing but not climate resilient housing. It can also be an entry point
9. Bangladesh Climate Change Strategy and Action Plan 2009	The CC strategy and action plan has been formulated to address CC adaptation and mitigation
10. National Land Use Policy, 2001	Climate change is not directly integrated into the policy and land use zoning plan is being formulated by the Ministry of Land and the gap is inter ministerial coordination.
11. The Delta Plan 2100	Flood plain covers 80 percent area of the country. So opportunity is to integrate urbanization as key component into the plan. It is facilitated by the central government so it is an opportunity.
12. The Rajshahi Town Development Authority Ordinance, 1976	CC has not directly incorporated into the Ordinance
13. The Khulna Development Authority Ordinance, 1961	CC has not directly incorporated into the Ordinance
14. The Chittagong Development Authority Ordinance, 1959	CC has not directly incorporated into the Ordinance
15. The Town Improvement Act, 1953 amended 2012 (draft)	CC has not directly incorporated into the Ordinance

1.2. Link Priority Policies To Nup Policy Assessment Components

Specific NUP components	Link priority policies	RANK
Urbanization overview: Drivers, Trends and Projections (population; projects; urban pattern)	national urban sector policy, 2011, Municipality Act, 2009 and urban and regional planning act, 2014	1
Urban Legislation (land regulations; local authorities, functions and responsibilities)	national urban sector policy, urban and regional planning act and national disaster management plan, national housing policy, Municipality Act, 2009	2
Urban regulations (public space; buildability & urban development rights; plotting; building codes)	national urban sector policy, urban and regional planning act and national disaster management plan, national housing policy, Municipality Act, 2009	2
Urban Planning: Implementation tools and enforceability (urban fabric, open spaces; street pattern; buildable plots; extension and infill)	national urban sector policy, urban and regional planning act and national disaster management plan, national housing policy, Municipality Act, 2009	2
Housing Policies and Regulations (needs / demands rights to adequate housing; accessibility and affordability; role private sector)	national urban sector policy, urban and regional planning act and national disaster management plan, national housing policy, Municipality Act, 2009	2
Infrastructure and Basic Services (water & sanitation; energy; transport and mobility; drainage; urban waste management; telecommunications)	national urban sector policy, urban and regional planning act and national disaster management plan, national housing policy	2
Urban Economy and Municipal Finances (municipal financing; local economic development/job creation; land value sharing system)	Municipality Act, 2009 covers municipal finance. Link to National urban sector policy.	3
Proposal For the System of Cities (main cities; intermediate cities; market towns, villages and other settlements)	Urban and Regional Planning Act, 2014 National Urban Sector Policy 2011, The Town Improvement Act, 1953 amended 2012 (draft), The Chittagong Development Authority Ordinance, 1959, The Khulna Development Authority Ordinance, 1961, The Rajshahi Town Development Authority Ordinance, 1976,	1
Other Issues of Strategic Importance (tourism; cultural heritage etc)		

2.1. Get Organized Ans Secure Commitment

Questions	Responses
<p>What is the overall goal of the project in your country</p>	<p>(Refer to group work 1)</p> <p>Incorporate CC into National Urban Sector Policy, 2014; Municipality Act, 2009 and Urban and Regional Planning Act, 2014; and ordinances of four development authorities</p>
<p>What are the possible challenges/risks?</p> <p>Consider the following issues in your analysis:</p> <ul style="list-style-type: none"> ● Political risks (please list) ● Organizational risks (please list) ● Environmental risks (please list) Etc. 	<ul style="list-style-type: none"> ● Political Risks: <ol style="list-style-type: none"> 1. Convincing policy makers 2. Vision of government changes as government changed 3. Political impasse ● Organizational Risks: <ol style="list-style-type: none"> 1. Encroachment of wet land by public and private sector ● Environmental Risks <ol style="list-style-type: none"> 1. Air pollution due to transportation and industry 2. Water pollution due to discharges from industry and households 3. Soils pollution through solid waste and chemical fertilizer
<p>What are possible risk mitigation measures?</p> <p>Consider the following issues in your analysis:</p> <ul style="list-style-type: none"> ● Political risks mitigation measures ● Organizational risks mitigation measures ● Environmental risks mitigation measures Etc. 	<ul style="list-style-type: none"> ● Political Risk mitigation measures <ol style="list-style-type: none"> 1. Effort to convince through dialogue ● Organizational risk mitigation Measures <ol style="list-style-type: none"> 1. Encroachment can be protected by enforcement of Urban and Regional Planning Act, 2014 under the framework of national urban Policy ● Environmental Risk mitigation measure <ol style="list-style-type: none"> 1. For air and water add source treatment process 2. For soils environment friendly solid waste management process and use of bio-fertilizer 3. enforcement of Urban and Regional Planning Act, 2014 under the framework of national urban Policy

2.2. Country Specific Activities

Project Component	Action Plan	Responses (including timeline if applicable)
<p>Activity A1.2</p> <p>Conduct in-depth assessments, including broad-based stakeholder consultations, of national urban policy and urban-related legislation to enhance climate change responsiveness to identify policy and legislative gaps and opportunities to address these.</p>	<p>Scope (Group Work 1)</p> <p>What is the target for the review?</p> <p>National Urban Sector Policy, 2014 Urban and Regional Planning Act 2014 National Housing Policy, 1993 revised on 2008 National Land Use Policy, 2001 National Disaster Management Policy The Delta Plan 2100; And ordinances of four development authorities</p> <p>Who is overall lead? Key partners? Lead by-UDD under MOHPW; Key Partners-Municipality under LG Division, MOEAF, MODMR, MOL, Planning Commission; four development authorities of Dhaka, Chittagong, Khulna and Rajshahi.</p> <p>How to deliver the target? Both local and national level consultation and workshop.</p> <p>What process will be used? <i>Participatory process , then National level workshop & dialogue</i></p> <p><i>Who should be part of the process?</i> <i>All concerned Ministries & Sectoral Agencies, Civil Society, NGO, Academia and Research Organization</i></p>	<p>Need assessment including identification of areas and opportunities for mainstreaming CC into national urban policies; also identification of gaps in policies and legislation for the issue.</p>

Project Component	Action Plan	Responses (including timeline if applicable)
<p>Activity A1.3</p> <p>Build national government capacities in support of the policy and legislative review process. Building on results of Activity A1.2, grants will be provided to key stakeholders (usually a key urban-focussed ministry, in some cases a civil society organization such as a Bar Association) and national workshops conducted in support of policy reform</p>	<p>Who is overall lead? Key partners? overall lead-Jointly by both MOHPW & LG Division (Municipality)</p> <p>Key partners-MODM&R and MOE&F, MOL, Planning Commission</p> <p>What Technical Advisory support is/are needed? Policy review and drafting, Institutional development, Research, workshop and training (Research? Workshop? Trainings? Policy drafting? Insti Dev? etc)</p>	<ol style="list-style-type: none"> 1. Review and drafting of policy & legislation, and formation of advisory, executive, technical and other relevant committees for institutional development to implement the policies under the framework of the legislation with the assistance from UN HABITAT. 2. Conduct action research to reveal the effectiveness of the policy and enforceability of the legislation with the assistance from UN HABITAT 3. Conduct workshop on the drafted policies and results of the research jointly by UDD and UN HABITAT 4. Arrange training programmes both local and abroad to build capacity of the national government on mainstream CC into national urban policies and institutional development; and visit countries, which has mainstreamed CC into national urban policies to gain first hand experience by UN HABITAT
<p>Activity A1.4</p> <p>Provide assistance to build local capacities in support of multi-sectoral and broad based pilot city intervention in the same 5 countries to inform national urban policy and legislative review. This activity will go hand-in-hand with activity A1.3. Focussing on the local government level, reviews will be conducted in order to better understand the legal, policy, capacity and financial challenges of responding to climate change and to identify local options to overcome these</p>	<p>Who is overall lead? Key partners? Overall lead- LG Division (Municipality)</p> <p>Key Partners-UDD under MOHPW, MODM&R, MOE&F, MOL, Planning Commission; and four development authorities including Dhaka, Chittagong, Khulna and Rajshahi</p> <p>Key Activities:</p> <ul style="list-style-type: none"> - City selection-Mymensingh - IEC Material Development & Seminar - Workshop - Training 	<ol style="list-style-type: none"> 1. The drafted policies and legislation will be implemented in pilot city, i.e., Mymensingh municipality to identify the multi-sectoral challenges with respect to legal, policy, capacity and financial challenges ; and finding out ways and means to overcome the challenges 2. Development IEC material and dissemination through seminar 3. Conducting workshop and training for the local stakeholders to build capacity of the multi-sectoral stakeholders at local level

2.3. Project Planning And Risk Assessment

Questions	Responses
<p>- What is the overall goal of the project in your country</p>	<p>Formation of national policies through mainstreaming CC into it , field level piloting of the policy and build capacity of multi-sectoral stakeholders at local level to overcome the challenges to implement it</p>
<p>- What are the possible challenges/risks?</p> <ul style="list-style-type: none"> ● Consider the following issues in your analysis: ● Political risks (please list) ● Organizational risks (please list) ● Environmental risks (please list) Etc. 	<ul style="list-style-type: none"> ● Political Risks <ul style="list-style-type: none"> • Convincing the policy makers • Incorporating the policy into long-term vision of the government to attain sustainable development ● Organizational Risks <ul style="list-style-type: none"> • All the line ministries enjoy equal power and authority, hence question of supremacy ● Environmental Risks <ul style="list-style-type: none"> • Environment of Bangladesh is fragile due to climate change and there are spatial variation in type and nature of disaster in the country
<p>- What are possible risk mitigation measures?</p> <p>Consider the following issues in your analysis:</p> <ul style="list-style-type: none"> ● Political risks mitigation measures ● Organizational risks mitigation measures ● Environmental risks mitigation measures Etc. 	<ul style="list-style-type: none"> ● Political Risks Mitigation Measures <ul style="list-style-type: none"> • dialogue for convincing the policy makers • The policy should be more flexible to fit into long-term vision of the government to attain sustainable development ● Organizational Risks <ul style="list-style-type: none"> • The committees formed under the act should be empowered with adequate enforceability of the policy and act for developing climate resilient urban Bangladesh ● Environmental Risks <ul style="list-style-type: none"> • The policy shall be formulated in such a way that it can address the risk of disaster and climate change as well irrespective of spatial variation to nature and type of disaster

Appendix-J

**Agenda: Expert Group Meeting on Mainstreaming climate Change into
National Urban Policies**

AGENDA

for

UN Expert Group Meeting on Mainstreaming Climate Change into National Urban Policies, Bangkok, 17-18 March 2015

Draft By Joris Oele – 22-01-2015

Monday 16 March 2015

Arrival of participants

Tuesday 17 March 2015

- 08.30-09.00u** **Registration**
- 09.00-09.20u** **Opening remarks**
- UN-Habitat
 - UNESCAP
 - Group photo
- 09.20-10.30u** **(a) Introduction and objectives of the meeting**
- Context/background: problem description
 - The project: strategy to address the problem
 - The EGM: purpose, objectives and expected outcomes
- 10.30-10.45u** **Coffee break**
- 10.45-12.30u** **(b) Assessment framework alternatives for national urban policies**
- UN-Habitat's National Urban Policy framework
 - UN-Habitat's Cities and Climate Change Initiative framework
 - UNEP's climate change policy assessment framework
 - Plenary discussion (on key points on assessment framework)
- 12.30-13.30u** **Lunch**
- 13.30-15.20u** **(c) Country presentations: challenges and opportunities**
- Country delegation presentation Philippines (20 min)
 - Country delegation presentation Viet Nam (20 min)
 - Country delegation presentation Nepal (20 min)
 - Country delegation presentation Sri Lanka (20 min)
 - Country delegation presentation Bangladesh (20 min)
- 15.20-15.35u** **Coffee break**
- 15.35-16.45u** **(d) Global best practices: strategies to mainstream climate change into national urban policies**
- Best practice 1: (focused on framework + process + strategies+ methods)
 - Best practice 2: focused on framework + process + strategies + methods)
- (for both: short presentation with room for questions and discussion)
- 16.45-17.00u** **Conclusions of the day and wrap-up**

Wednesday 18 March 2015

- 09.00-10.15u** **(e) Country presentations: challenges and opportunities**
- Country delegation presentation Indonesia (20 min)
 - Country delegation presentation Mongolia (20 min)
 - Country delegation presentation Myanmar (20 min)
- 10.15-10.30u** **(f) Introduction to group work on the proposed assessment framework**
- Presentation by UN-Habitat or UNESCAP on group work (purpose, what to do and expected outputs)
- 10.30-10.45u** **Coffee break**
- 10.45-12.30u** **(f) Exercise on assessment framework**
- Breakout groups
 - Feedback and plenary discussion on group work
- 12.30-13.30u** **Lunch**
- 13.30-14.00u** **(f) Exercise on assessment framework (continued)**
- Plenary discussion to agree on assessment framework
- 14.00-14.15u** **(g) Introduction to group work on developing national work plans**
- Presentation by UN-Habitat or UNESCAP on group work (purpose, what to do and expected outputs)
- 13.45-15.00u** **(g) Development of national work plans**
- Breakout groups
- 15.00-15.15u** **Coffee break**
- 15.15-16.45u** **(g) Develop national work plans (continued)**
- Breakout groups
 - Feedback and plenary discussion on group work
- 16.45-17.00u** **Conclusions of the EGM and wrap-up**

Appendix-K

**Background Paper for UN Expert Group Meeting on Mainstreaming Climate
Change into National Urban Policies**

BACKGROUND PAPER

for

UN Expert Group Meeting on Mainstreaming Climate Change into National Urban Policies, Bangkok, 17-18 March 2015

Draft Annotated Outline By Joris Oele – 22-01-2015

This paper should provide convincing, synoptic (max 15 pages?) and easy to understand information about:

- ✓ Why the development account project is important/what the problem is
- ✓ What the expected accomplishments of the project are/possible solutions
- ✓ How the EGM provides a platform to discuss problems, solutions and concrete implementation actions
- ✓ Provide an initial overview of the legislative and policy review methodology which is to be finalized at the EGM

Contents

Executive summary	Page 3
1 Introduction	Page 4
1.1 Context/background (problem description – use of Quick Guide and COP documents)	
1.2 The development account project (strategy to solve the problem, objectives, expected accomplishments, indicators, main activities, key partners and possible implementation partners – we can mention all 8)	
1.3 The EGM (purpose, objectives and expected outcomes: share best practices and agree on assessment framework and country work plans, required knowledge/necessary analytical work)	
2 What are the underlying challenges with regard to local resilience building and low emission development?	Page 7
2.1 Rapid urbanization (drivers, trends and projections; spatial and population dynamics)	
2.2 Climate change (emphasizes on climate adaptation and mitigation - use of Quick Guide and COP documents)	
3 What has been the response? What are the gaps and limitations?	Page 8
3.1 Policy Directives (with regard to local / urban low carbon and climate resilient development such as urban related policies, legislation)	
3.2 Financing for Climate Response (of local/urban climate change, resilient housing and infrastructure at national and urban level)	
3.3 Local capacities	
3.4 Institutional arrangements	
3.5 Examples of good practices and their characteristics (global and regional examples)	
3.6 Conclusion (Need for National enabling framework)	
4 What should we focus on and how?	Page 12
4.1 Identify key areas of project intervention (to remove vertical and horizontal barriers) (NUP, legal framework and CCCI assessment)	
4.2 Implementation partners and modalities (national governments/ministries and local governments; assessment framework, work plans and monitoring and evaluation)	
4.3 Specific areas/sectors/national urban policies of intervention (climate change; housing/building codes; urban planning - policies (in pipeline) countries consider important; policies in which climate change is/can be considered; strategies to strengthen climate change in policies)	
4.4 Synergies and alignments with partners and programmes	

(country priorities, UN-Habitat's National Urban Policy Assessment Framework and Adelphi and UNEP's climate change policy assessment framework).

5 Conclusion

Page 14

References

Annexes

- A. An initial assessment framework
- B. Acronyms
- C. Persons consulted
- D. Organizations and Initiatives

List of Figures

Fig. 1

Authorship of this paper

Acknowledgements

Appendix-L

**Preparation Guidelines for UN Expert Group Meeting on Mainstreaming
Climate Change into National Urban Policies**

PREPARATION GUIDELINES

for

UN Expert Group Meeting on Mainstreaming Climate Change into National Urban Policies, Bangkok, 17-18 March 2015

Draft Annotated Outline By Joris Oele – 22-01-2015

<p>1. Introduction: Country Profile</p> <p>Country name: Land Area: Population and growth/year Urban population (%) and growth/year Population density GDP per capita in US\$ Climate</p>												
<p>2. Problems</p> <p>Main problems related to climate change in the country and in cities</p> <p>Consider hazards and vulnerabilities (economic impacts/losses (US\$), social, infrastructure (e.g roads and housing))</p> <p>List problems for hazards and vulnerabilities separately from most pressing to least pressing</p>												
<p>3. Policies</p> <p>Assessment</p> <p>What are the most important policies (laws, national strategies etc.) that promote or cripple climate change adaptation and mitigation efforts in cities? These could include laws, regulations, regulations and plans at the local, regional and national levels</p>												
<p>3.2 Main opportunities for better integrating climate change into policies over the next 3 years</p> <p>What do you consider the most important national level (pipeline) policies (related to urban development)? Consider laws, regulations, strategies and plans. How could climate change (adaptation and mitigation) be integrated/strengthened in these policies?</p>												
<p>3.3 Policy Overview</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="padding: 5px;">Urban/local Policy (law, national strategy etc.)</th> <th style="padding: 5px;">Is there such a policy in your country y/n</th> <th style="padding: 5px;">Official name</th> <th style="padding: 5px;">How is climate change integrated</th> <th style="padding: 5px;">How does this policy impede urban/local climate change action?</th> <th style="padding: 5px;">Other comments</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;"><i>National Urban Policy / National Urbanization Framework</i></td> <td style="padding: 5px;"></td> </tr> </tbody> </table>	Urban/local Policy (law, national strategy etc.)	Is there such a policy in your country y/n	Official name	How is climate change integrated	How does this policy impede urban/local climate change action?	Other comments	<i>National Urban Policy / National Urbanization Framework</i>					
Urban/local Policy (law, national strategy etc.)	Is there such a policy in your country y/n	Official name	How is climate change integrated	How does this policy impede urban/local climate change action?	Other comments							
<i>National Urban Policy / National Urbanization Framework</i>												

Housing Policy					
Urban Infrastructure (please list specific policies separately)					
Multi-level governance, Decentralization (please list specific policies separately)					
..... Building code					
Brief summary on CC legislation / energy / environment etc. and urban development / local role					

4. Decision-making and financing

What are the political and decision-making mandates related to climate change adaptation and mitigation efforts? In particular, what are the roles and responsibilities, including financing, at all government levels (national, regional, local)

Decision-making and financing

What do you consider the most important national level political and decision-making mandates (related to urban development and climate change)? How could climate change (adaptation and mitigation) be strengthened in these political and decision-making mandates?

5. Stakeholders

Who are the main actors (from government, business and community) influencing (driving or blocking) climate change adaptation and mitigation efforts? How do they influence processes? What are the barriers and opportunities for collaboration between different key actors?

Stakeholders

What do you consider the main national level actors influencing urban development? How could climate change (adaptation and mitigation) become more important in their agenda's? How could the national government support capacity development of local government for climate change adaptation and mitigation?

6. Proposed activities

Related to this project, what activities do you propose in your country? Consider activities related to integrating climate change into policies and capacity development support for local governments

Appendix-M

**Letter as the Focal point for the national country team:
UN Expert Group Meeting on Mainstreaming Climate Change into National
Urban Policies**

Appendix-N

**Minutes of Technical Session of the Workshop on Mainstreaming Climate
Change Concerns in to National Urban Related Policies**

(It is written in English for communication with UN-HABITAT)
Government of the People's Republic of Bangladesh
Urban Development Directorate (UDD)
Ministry of Housing and Public Works (MoHPW)
82, Segunbagica, Dhaka-1000

Subject: Minutes of Technical Session of the Workshop on "Mainstreaming Climate Change Concerns in to National Urban Related Policies"

Chairman: Engineer Khondker Fowze Muhammed Bin Farid, Director, Urban Development Directorate

Venue: Conference Room, Public Works Department, Segunbagicha, Dhaka

Date: 02 August, 2015

Time: 14.00 hrs to 17:00 hrs

Rapporteur: Quazi Md. Fazlul Haque, Senior Planner, UDD.

List of the participants' of Technical Session of the workshop is attached in the **Annex-A**.

The Chairman welcomed all the participants' of the technical session of day-long workshop. Then the Chairman requested Mr. Liam Fee, Technical Adviser, Cities and Climate Change Initiative, UN-Habitat, to deliver his speech relating to Mainstreaming Climate Change Concerns into National Urban Policies.

2. Mr. Liam Fee, Technical Adviser, Cities and Climate Change Initiative, UN-Habitat, said that this was a Regional Project Comprising of five countries in Asia and the Pacific including (01) Bangladesh, (02) Nepal, (03) Sri Lanka, (04) Philippines and (05) Vietnam. He explained the Project's goal, objectives, expected outcome, selected activities, project strategies with his explanatory power point presentation.

3. Engr. Md. Nurullah, Additional Chief Engineer, Local Government and Engineering Department (LGED), asked that what would be the implementation methodology of the project, manpower and components of the project especially focusing the policies, acts and its related rules and regulation. First of all, those had to be changed according to the present requirements of CC during the project period. He also said that the issues and objectives looked excellent.

He added that there used to be a procedure to submit a project in Bangladesh. Those would have to be followed. He suggested employing a consultant for the activities of this proposed project. The responsibilities could be to study each rules and regulations and to identify the areas where climate change issues required to be incorporated. Because, the members of the technical committee composed of the officers of concerned ministry/department; and most of them would not have enough time to review all policies and acts, rules and regulations. Moreover, they would be from different specific departments from different areas. So, they could not well aware of all policies, acts and its related rules and regulations. The Consultants who deal with these sorts of issues could require hiring for this project. He also said that the review of all policies and acts should have to be made very quickly. Three year time period might not require for the said purpose. The consultant would provide initial proposal for incorporating climate change issues into the policies. Then the technical committee would review it and make recommendation to consultants to prepare draft document which afterwards would be approved by the technical committee.

After that the draft proposal would move to the steering committee. The proposed steering committee would review it and finalize the draft proposal. The steering committee should be limited to six or seven

members depending on the nature of the project and the chairperson of the steering committee should be secretary rather than ministry himself.

Here the technical committee was important and the steering committee would give decision relating to any policy issues, which might be aroused during implementation of the project. Among the proposed rules and regulations, The Building Code would also be found very essential. Infact, it would be an excellent initiative of Urban Development Directorate. But, one thing should bear in mind that this would not a document of any agency or department, this would be a document of the nation as more than six hundred different agencies are acting within the nation. So, this document would be essential for all agencies. The committee should be flexible in the sense that if any more documents would be felt essential for the project that should be included in the project.

3. Dr. Md. Afzal Hossain, Joint Secretary, Ministry of Forest and Environment, Suggested to incorporate "Brick Preparation and Brick Field Control Act' 2014" in the project. He also suggested reviewing National Environment Policy, which had been under construction; and other related rules and regulations of the Ministry of Environment and Forest including Waste Management Rules, Clinical Waste Management Rules, Sound Pollution Control Rules, and Electronic Waste Management Rules.

4. Mr. Shahinul Islam Khan, Chief Town Planner, Chittagong Development Authority (CDA) requested to include "Chittagong Building Construction Rule, 2008" (চট্টগ্রাম ইমারত নির্মাণ বিধিমালা, ২০০৮). He also suggested reducing the member of the committee from his past experience of inter-agencies committees which already formed by CDA. He pointed that the members of the committees should be involved with this project from the very beginning. Otherwise, the committee would not able to address the issues properly. He also made suggestion for including the inter-relation between sub-soil and climatic elements into the project.

5. Mr. Saiful Hossain, Principal Scientific Officer, Water Resources Planning Organization, concurred with the Additional Chief Engineer, LGED. He added that the Technical Committee should not be too large. There should be core members in the Committee and other members would be flexible in nature. The core members would sit with the concerned ministry and department to deal with the sector specific policy and act. Similarly, the Steering Committee should be formed.

6. Architect Rezaul Karim, Chief Planner, Chittagong City Corporation, said that the Project should be seen from national point of view, rather than individual city's perspective. Bangladesh was one of the highest densely populated country in would. Urban scenario had been changing very rapidly in Bangladesh especially in Dhaka and Chittagong. Dhaka had been pulling population as a magnet due to its attraction in terms of occupation and employment. So, centralized development needs to be discouraged rather rural areas should be developed. Upazilas should be developed based on their potentialities. If it would be possible to utilize the potentials of all the upazilas properly, primacy of Dhaka and Chittagong would also be possible to reduce.

Population of Chittagong had been increasing day by day. The surplus populations were building their houses through hill cutting and the result was increasing disaster like landslide and the ultimate result was increasing the vulnerability related to climate change. So, if the adverse climatic impacts of rural areas including flood, landslide, cyclone etc. would possible to mitigate, rural environment would be possible to maintain in its natural state and ultimately it would be, possibly kept the people in their own upazila . To

attain this, rural planning should be enhanced first, which would bring balance between pull factor and push factor.

7. Mr. Sarker Shafiaul Alam, Urban Climate Change Researcher, International Center for Climate Change, utter that from the literature review of a recent research, it was found that Dhaka city had the highest population density in the world and the second highest was the Chittagong city. People used to come to Dhaka because of more employment opportunities, educational and health facilities etc. To reduce population from the core city, some opportunities should be created in surrounding cities.

The attraction considered the climate change issue including flood, cyclone, impact etc. in rural areas. Since people came to the cities due to their vulnerabilities to climate impact in rural areas and again they would face vulnerabilities to climate impact in cities as this segment of people used to live in slum areas of cities. Multi-Sectoral collaborations might improve the situation as stakeholder's collaboration existed in implementation stage not in strategic stage. So, multi-sectoral collaborations should be enhanced at strategic stage.

8. Mr. M A Issa Anshary, Town Planner, Chittagong Development Authority, Uttered that the committee was to some extent too large and bureaucratic. He suggested including representation from local bodies at the root level and also professional bodies like Engineers Institution, Bangladesh (IEB), Bangladesh Institution of Planners (BIP), Institute of Architects, Bangladesh (IAB). He also suggested forming area specific core committee as impact of climate change e.g., land slide, flood, heat island etc., varies from area to area.

9. Ms Sanjida Haque, Town Planner, Gazipur City Corporation, said that the committee would comprise of policy implementing City Authority also. So, Gazipur City Corporation and Narayanganj City Corporation should be included in the committee as the city corporations are directly involved with enforcing various acts and rules on ground.

10. Mr. Belal Uddin Biswas, Deputy Chief, Bangladesh Water Development Board, said that river morphology of the Brahmaputra River has not been included in MSDP project, which should get highest priority. Pollution in the Brahmaputra River should also be considered. Recommendation on the Brahmaputra river pollution should be made on the basis of learning from the Buriganga river in Dhaka. A representation from BUET may be kept in the technical Committee.

11. Md. Noor Islam, Executive Engineer, Barisal City Corporation, suggested of keeping representation from Dhaka WASA and Department of Public Health Engineering into the technical committee.

12. Brig.Gen. Md. Shamsul Alam khan, afwc, psc, Khulna Development Authority (KDA), said that this project was not only of national concerned, but also of international concerned as it was linked with 5 countries in Asia and the Pacific. Strategically, all policies and acts should be revised to integrate climate change concerns into the policies under the umbrella policies and acts. So, there was a need for coordination among all these agencies.

In this context, the extent of both the committees was acceptable. An expert panel group had been included in the technical committee. Hopefully, Climate Change Concern into national urban policies would be integrated rightly. If the recommendation of the technical committee comprising of expert group would

be agreed by the steering committee, then the concerned ministry would accept the recommendations made by the technical committee.

He also said that the climate condition of Mymensingh was not similar to that of Chittagong, Cox's Bazar or Khulna. So, policy should be tested in context of different sectors and areas. He added that there had been no comprehensive study relating to climate change in Bangladesh and in urban area in Particular. So, a comprehensive study was found essential to this end.

13. Dr. K. Z. Hossain Taufique, Deputy Director (Research and Coordination) and Focal Point, Country Team, said that the technical committee would review all the policies, out, rules, regulation, find out the gap and would make recommendation on climate change issues what could be incorporated into the policy, acts and it's related rules and regulations. Then the recommendation would be placed to the steering committee. The Steering Committee would send the recommendation to the concerned ministry/agency for further action.

He also said that representation from various agencies had been kept to ensure participatory process as each and every agency was equally important to incorporate climate change concerns into urban polices. He explained the justification on the proposed committee. He said that in one sense, the committee was bureaucratic, as the government sector is primarily responsible for formulating policies, acts, rules and regulations. The draft recommendations on policy and legislatives would not be implemented in all areas under this project. Hence, the drafted recommendations would be tested in Mymensingh. He also requested the forum to include Munshiganj Pourashava in the technical committee as the pourashava was vulnerable to disaster and climate change as well. There were many industries adjacent Munshiganj pourashava, and they had been polluting the environment of the pourashava. He also suggested including Public Works Department and Architecture Department into the technical committee.

14. Mr. Aktaruzzaman, UN-Habitat, Bangladesh, said the objective of today's meeting was for deciding the components and activities and forming the relevant committees. The technical committee should work as the working committee and the steering committee would review the recommendations made by the technical committee and would submit the proposal to the government for necessary approval. The methodology of the project would be finalized in consultation with the consultants hired by UN-Habitat.

15. Mr. Mohammad Abdul Qayyum, Chief Guest of Technical Session and National Project Director & Additional Secretary, Comprehensive Disaster Management Progrmme (CDMP)-II, said that there was no doubt about adverse impact of climate change. All had been concerned about climate change as livelihood, health condition are changing. Urban sector in Bangladesh had been more vulnerable to climate change.

By the year 2050, more than 50 percent population of Bangladesh would be going to live in urban areas. So, if the urban areas would be planned properly, the adverse impact of climate change would be possible to mitigate or adapt. The Changing scenario of urbanization had been demanding resilience. He also said that policies were not mandatory. It was simply guidance for action and resource allocation. Acts, rules and regulations were mandatory, which were enforceable. So, enactment of legal documents was found important.

Technical Committee should find out which acts and policies relevant to climate change and would categorize them in the following way: (i) strongly relevant, (ii) moderately relevant and (iii) somehow

relevant. If the concerned ministry/agency would fail to find out the scope of incorporating climate change issues, then the issues would not be addressed properly. The technical committee should provide preliminary suggestion and in some cases the committee might seek suggestion from the upper level. If the concerned ministry would not provide suggestion then the committee would by their own effort, provide recommendation on climate change issues to the concerned ministry, which would be the most difficult part of the task.

He added that climate change issues related to urbanization should be divided into some thematic areas. The discussion would be made with the particular practitioner on the thematic group. Then some workshop/seminars would be required to arrange to share the output of the smaller group with the broader group, i.e. technical committee. A comprehensive climate change data were not readily available. Only some piece meal or segregated data were available. So, unless and until a baseline data would be established, it would not be possible to establish argument. For this reason, although international consultancy and learning of international good practice was required, short-term consultancy in Bangladeshi context was also essential.

With respect to extent of committee, he added that if the size of the committee was large, there was no problem at all, but if the size of the committee was small, it might create obstacle in integrating climate change issue in urban policies, as there would greater change to leave some important stakeholders. He also suggested to incorporate Gazipur City Corporation and Narayanganj City Corporation into the technical committee. Beside, government agencies, several actors like professional bodies, Civil Society and NGOs also dealt with urban issues and climate change as well. They should also be incorporated into technical committee. Bangladesh University of Engineering & Technology (BUET), and Bangladesh Institute of Planners (BIP) should be incorporated into the technical committee in this respect. He also said that government representation in the technical committee had been rightly incorporated. But, if the technical committee would require, might include any relevant member within the government agency or outside the government. This issue should be included in the terms of reference (TOR) of the Technical Committee. He also added that the ministry would give legal basis to the technical committee by an 'Office Order', otherwise the whole process would become more a social work. In case of steering committee, he said that representation in the steering committee should not below the rank of Joint Secretary; and in case of RAJUK and other agencies, 'Appropriate Person' should be written in the Terms Reference (ToR).

16. Engineer Fowze Muhammed Bin Farid, Chairman of the Technical Session and Director, Urban Development Directorate, thanked all the participants' for their spontaneous participation and also for their valuable contribution in work shop.

17. Decisions:

After detailed discussion, the following decisions have been taken:

- 17.1 All the participants' of the technical session, in principle, of the workshop were agreed to ensure their active participation in the project.
- 17.2 All the participants' of the technical session were agreed on the following proposed structure of Technical Committee including its Terms of References (ToR):

Proposed Technical Committee

1.	Additional Secretary/Joint Secretary (Development), Ministry of Housing and Public Works	Chairperson
2.	Representative, Department of Environment	Member
3.	Representative, Department of Disaster Management	Member
4.	Representative, Roads and Highway Department	Member
5.	Representative, Bangladesh Power Development Board	Member
6.	Representative, Water Development Board	Member
7.	Representative, Local Government Engineering Department	Member
8.	Representative, National Housing Authority	Member
9.	Representative, Public Works Department	Member
10.	Representative, Department of Agriculture	Member
11.	Representative, Department of Public Health Engineering	Member
12.	Representative, House Building Research Institute	Member
13.	Representative, Dhaka WASA	Member
14.	Representative, Khulna Development Authority	Member
15.	Representative, Chittagong Development Authority	Member
16.	Representative, Rajshahi Development Authority	Member
17.	Representative, Capital Development Authority (RAJUK)	Member
18.	Representative, Dhaka City Corporation (North)	Member
19.	Representative, Dhaka City Corporation (South)	Member
20.	Representative, Barisal City Corporation, Barisal	Member
21.	Representative, Chittagong City Corporation, Chittagong	Member
22.	Representative, Khulna City Corporation, Khulna	Member
23.	Representative, Rajshahi City Corporation, Rajshahi	Member
24.	Representative, Gazipur Corporation, Gazipur	Member
25.	Representative, Narayanganj City Corporation, Narayanganj	Member
26.	Representative of Deputy Commissioner, Mymensingh	Member
27.	Representative, Mymensingh Pourashava, Mymensingh	Member
28.	Representative, Munsiganj Pourashava, Munsiganj	Member
29.	Representative, Urban and Regional Planning Department, Bangladesh University of Engineering and Technology	Member
30.	Representative, Institute of Planners,/ Architect,/ Engineer	Member
31.	Representative, UN-Habitat/UNESCAP/UNDP	Member
32.	Dr. K. Z. H. Taufique, Deputy Director (Research & Coordinator), Urban Development Directorate & Focal Point, Country Team	Member- Secretary

Terms and Reference of the Technical Committee

1. The technical committee will meet every two months to report the progress and agree on necessary changes under the overall guidance of the Steering Committee.
2. The members of the technical committee, who have their own policy, act, rules and regulations, may lead the evaluation process concerning climate change issues for their own policy and legislation.

3. Review existing legal provisions, policies and strategic documents related to climate change and urban issues in respective agencies
4. Present recommendations to the Steering Committee for necessary approval
5. Review the recommendations of the consultants..
6. Co-opt any member or agency in the technical committee as needed

17. 3 All the participants' of the technical session, MCCCNU were agreed on the following structure of draft and proposed Steering Committee including its Terms of References (ToR):

Proposed Steering Committee

1.	Secretary, Ministry of Housing and Public Works	Chairperson
2.	Additional Secretary/Joint Secretary (Development), Ministry of Housing and Public Works	Member
3.	Representative, Ministry of Forest and Environment	Member
4.	Representative, Ministry of Disaster Management and Relief	Member
5.	Representative, Ministry of Land	Member
6.	Representative, Ministry of Roads, Transport and Bridges	Member
7.	Representative, Ministry of Power, Energy and Mineral Resources	Member
8.	Representative, Ministry of Industries	Member
9.	Representative, Ministry of Water Resources	Member
10.	Representative, Local Government Division, Ministry of LGRD and Cooperatives	Member
11.	Representative, Ministry of Agriculture	Member
12.	Representative, Ministry of Law	Member
13.	Chairman, Khulna Development Authority	Member
14.	Chairman, Chittagong Development Authority	Member
15.	Chairman, Rajshahi Development Authority	Member
16.	Chairman, Capital Development Authority (RAJUK)	Member
17.	Chief Architect, Department of Architect	Member
18.	Representative of Mayor, Dhaka City Corporation (North)	Member
19.	Representative of Mayor, Dhaka City Corporation (South)	Member
20.	Representative of Mayor, Barisal City Corporation, Barisal	Member
21.	Representative of Mayor, Chittagong City Corporation, Chittagong	Member
22.	Representative of Mayor, Khulna City Corporation, Khulna	Member
23.	Representative of Mayor, Rajshahi City Corporation, Rajshahi	Member
24.	Representative of Mayor, Chittagong City Corporation, Chittagong	Member
25.	Representative of Mayor, Gazipur City Corporation, Gazipur	Member
26.	Representative of Mayor, Narayanganj City Corporation, Narayanganj	Member
27.	Representative of Mayor, MymensinghPourashava, Mymensingh	Member
28.	Representative of Mayor, MunsiganjPourashava, Munsiganj	Member
29.	District Commissioner, Mymensingh	Member
30.	Representative, UN-Habitat/UNESCAP/UNDP	Member
31.	Director, Urban Development Directorate	Member- Secretary

N.B. Representatives from the Ministries shall be not below the rank of Joint Secretary

Terms and Reference of the Steering Committee

1. The Steering Committee shall approve the submitted recommendations on policy reform, policy implications, and guidelines for Mainstreaming Climate Change Concerns in National Urban related Policies.

2. Meet every six months to review the progress and outputs of the technical committee for recommending changes, if any.
 3. Monitoring the progress of the project activities
 4. Co-opt any member or agency in the Steering Committee as needed
-
17. 4 All the participants were agreed to include academicians and professional bodies in the Technical Committee covering Urban and Regional Planning Department, Bangladesh University of Engineering and Technology and Bangladesh Institute of Planners.
 17. 5 All the participants were agreed to include all the City Corporations and Munsiganj Pourashava into the Committee.
 17. 6 All the participants were agreed to include the Ministry of law into the steering Committee as well.
 - 17.7 Minimum two consultants shall be employed under the project. One consultant shall translate the existing policies and legislation which are written in Bengali or vise-versa ; and the other consultant shall review all the existing policies and legislations relating urban issues, and made recommendations on mainstreaming climate change concerns into those policies and legislations. UN-Habitat shall prepare Terms of References (ToR) for the consultants. consultant's number may increase according to the need.
 - 17.8 UN-Habitat shall provide fund for testing the recommendations of related policies and legislation concerning Climate Changes at Mymensingh..
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18. The Chairman Concluded the Session as there was no more issue to discuss.


(Khondker Fowze Muhammed Bin Farid)
Director
Urban Development Directorate



Appendix-O

Call for Expression of Interest and Proposal: Mainstreaming climate Change into Urban Polices

cc.
20/11/2015
20/11/2015
A-00
PM-1
Issued 10 November 2015
27/11/2015

CALL FOR EXPRESSION OF INTEREST AND PROPOSAL

Urban Climate Change Partnership for Bangladesh

Geographic scope	Bangladesh
Overall Project	Cities and Climate Change Initiative (CCCI)
Duty Station	Dhaka, Bangladesh and home-based
Expected start	January 2016
Duration	12 months
Application Closing Date	30 November 2015

1.0 Project background

In March 2015, UN-Habitat, UNESCAP and UNEP began jointly implementing the **Mainstreaming Climate Change into Urban Policies** project, which will run for 2 and half years. The project works in five countries; Bangladesh, Nepal, Philippines, Sri Lanka and Vietnam, and has four overall components:

1. *Assess national urban related policies*
2. *Support policy and legislative review*
3. *Explore local-national linkages*
4. *Develop regional guidelines*

The Bangladesh component of the project got underway in August 2015 with a national workshop on Mainstreaming Climate Change into Urban Policies, led by the Urban Development Directorate (UDD) under the Ministry of Housing and Public Works. This workshop discussed the priority policies that the project should target, key stakeholders to support the implementation, and the complementarity between the project and the ongoing work under the Comprehensive Disaster Management Programme in Mymensingh. The detailed outcomes of the workshop will be shared with the contractor on inception.

2.0 Climate Change and Urbanisation in Bangladesh

2.1 Background

Bangladesh is one of the countries most prone to weather-related disasters and is likely to become more vulnerable as a result of climate change. Floods, tropical cyclones, storm surges and droughts are likely to become more frequent and severe in the coming years, with evidence that the signs of future changes have already begun to become apparent¹. The combination of frequent natural disasters, high population density, poor infrastructure and

¹ Govt. Of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, Summary, p xviii, Ministry of Environment and Forests

low resilience to economic shocks makes Bangladesh especially vulnerable to climatic risks. Bangladesh has an incidence of poverty, with the poor relying heavily on agriculture and natural resources, increasing their vulnerability to climate change². These changes will threaten the significant achievements Bangladesh has made over the last 20 years in increasing incomes and reducing poverty, and will make it more difficult to achieve the MDGs, and the SDGs that will replace them. It is essential that Bangladesh prepares now to adapt to climate change and safeguard the future well-being of its citizens. Indeed, the new democratic government is unequivocal in its commitment to protect the people from the ravages of climate change as stated clearly in its election manifesto³.

Climate change will severely challenge the country's ability to achieve the high rates of economic growth needed to sustain these reductions in poverty. In coming years, it is predicted there will be increasingly frequent and severe floods, tropical cyclones, storm surges and droughts, which will disrupt the life of the nation and the economy⁴. The challenge Bangladesh now faces is to scale up these investments to create a suitable environment for the economic and social development of the country and to secure the well-being of the people, especially the poorest and most vulnerable groups, including women and children⁵.

2.2 Analysis

The country is striving to accelerate economic growth and substantially eradicate poverty by 2021, while avoiding the harsh environmental price many countries have paid in this pursuit. For this, the government has prepared National Perspective Plan representing Vision 2021, and the sixth Five Year Plan and the upcoming seventh Five Year Plan all of which are and will be based on the principle of sustainable development. The Government of Bangladesh's vision regarding management of climate change for uninterrupted and sustainable development is an integral part of Vision 2021. Very briefly its goals are to eradicate poverty, increase employment opportunities, ensure food security, provide access to energy & power, and achieve economic and social well-being of all citizens of the country.

Bangladesh will achieve this goal through a strategy of pro-poor, climate resilient and low carbon development, based on the four building blocks of the Bali Action Plan; adaptation to climate change, mitigation, technology transfer and adequate and timely flow of funds for investment, within a framework of food, energy, water, livelihoods and health security. The Government of Bangladesh is firmly committed to an integrated policy and plan to protect the country from the adverse effects of global warming as elaborated in its election manifesto. The manifesto emphasizes water management and basin-wise drainage and development programme, careful forest resource management, protection of flora and fauna species, control of polluting chemicals in agricultural development, restraint on air pollution by transport and power sectors, adoption of environmental protection in urbanization plan and above all in regional and global cooperation for protection of the environment and mitigation of climate changes. Keeping this view in mind, Bangladesh has formulated "The Climate Change Strategy and Action Plan 2009" for dealing with climate change adaptation.

2.3 Urbanization in Bangladesh

It is widely acknowledged that Bangladesh is a rapidly urbanizing country where the proportion of people living in urban areas has expanded rapidly from 7.6% to nearly 25% between 1970 and 2005. A combination of socio-economic, political and demographic factors is responsible for this. It reflects for instance the redistribution of the rural and urban population. Also the growth in the magnitude of urban economy, change in the scale and nature of economic activity and distribution of income between regions and among classes, demographic transition and change in the scale and nature of governance are likely to be influenced by rapid urbanization and urban settlements patterns in Bangladesh.

With an area of 147,750 square km, the agrarian economy of Bangladesh is experiencing a very high rate of urbanization. In 1974 people living in urban areas accounted for only 8.8% of the population (Table 2.1). By 2001, urban population was 23.10% of total population. UN data indicates that currently 25% people of Bangladesh live in urban areas. This is indicative of the fact that growth of urban population and labour force is increasing relative to rural population and labour force.

² Govt. Of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P 18, Ministry of Environment and Forests

³ Govt. Of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, Summary, p xviii, Ministry of Environment and Forests

⁴ Govt. Of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P1, Ministry of Environment and Forests

⁵ Govt. Of Bangladesh (2009), Bangladesh Climate Change Strategy and Action Plan 2009, P2, Ministry of Environment and Forests

Table 2.1: Growth of Urban Population in Bangladesh

Census Year	1974		1981		1991		2001	
Area	Number	%	Number	%	Number	%	Number	%
Urban	6273603	8.78	13535963	15.05	20872204	18.73	28605200	23.1
Rural	70124397	91.79	76376037	84.95	90582981	81.27	101424549	76.9
Total	76398000	100	89912000	100	111455185	100	130029749	100

Source: Bangladesh Bureau of Statistics

A recent study on the level of urbanization and share of national urban population along with total urban population for each of the six divisions reveals that Dhaka Division overwhelmingly holds the highest rank in all the census years both for level of urbanization and share of national urban population". On the other hand, the rank of Sylhet Division was the lowest for both of the above-mentioned cases.

One significant feature of urbanization in Bangladesh is that urban population is increasing at different rates in different urban centres. A considerable proportion of urban population lives in district towns and Pourashava areas in Bangladesh. According to population census report of 2001, Dhaka Metropolitan Area had a total population of 10.712 million comprising 37.45% of total urban population. This was followed by, Chittagong SMA, which had 3.386 million or 11.84% of the total, followed by Khulna SMA with a total population of 1.341 million or 4.69% of total, Rajshahi SMA with a total population of a 0.70 million or 2.45% of total and Sylhet City Corporation with 0.32 million or 1.12% of the total. All other towns and cities had below 1% of the total population. Thus, four Metropolitan Areas together with Sylhet City Corporation population comprised 57.55% of the total urban population. There were 33 towns with population above 100,000, of which 7 had population of above 500,000, 26 with population between 100,000 and 400,000, 50 with population between 50,000 and 100,000, and 116 with population between 25,000 and 50,000 (Table 5.2). There were 332 urban centres with population below 25,000. Populations of many towns were more or less stable and there was depopulation in 15 districts during the decade 1991 and 2001.

Table 2.2: Number of Urban Centres by Census Year and Size Classes

Size Classes	Number of Urban Centres					
	Census Year					
	1951	1961	1974	1981	1991	2001
500,000 and over	--	1	2	3	4	7
100,000-499,999	2	3	4	10	14	26
50,000-99,999	2	5	14	23	26	50
25,000-49,999	14	16	23	45	76	116
Under 25,000	45	53	65	411	402	332
Total	63	78	108	492		522
Level of Urbanization	4.33	5.19	8.78	15.54	-	20.15

Source: Bangladesh Bureau of Statistics

2.4 Driving forces behind Rapid Urbanization in Bangladesh

A major driver of urbanization in Bangladesh is the inability of the agriculture sector to absorb the surplus labour force entering the economy every year. Inability of the agriculture sector to provide sufficient employment or sufficiently high household incomes to cope with a growing number of dependents can encourage people to seek employment outside agriculture. In the case of Bangladesh, rural to urban migration has contributed to more than 40 percent of the change in urban population. The lure of employment opportunities existing in these cities is another reason for urban migration.

Most of the industrial establishments and businesses as well as business services are concentrated in the largest cities. Dhaka alone accounts for 80 percent of the garments industry; the mainstay of manufacturing in Bangladesh.' The dominance of business services, particularly finance and real estate services is considerably higher in the four major cities relative to the rest of the country.

Growth experiences in Bangladesh and elsewhere demonstrates both a tendency towards urbanization as well as uneven regional growth. The urbanization problem has become particularly acute in Bangladesh owing to the primacy of Dhaka. The unbalanced growth of Dhaka shows both a large concentration of wealth and income as well as unsustainable pressure on Dhaka's already fragile infrastructure and available land. Concerning regional disparities, the divisions of Dhaka, Chittagong and Sylhet seem to do better in terms of both growth and poverty reduction as compared with Rangpur, Barisal, Khulna and Rajshahi. The Sixth Plan will make efforts to address both these spatial dimensions of growth.

3.0 Objectives of the Partnership

The purpose of this partnership is to lead to an enhanced capacity and commitment of the national government in Bangladesh to address the urban dimension of climate change through national urban policies; and to an enhanced capacity at the local level to mainstream climate change into planning. The activities presented below will be reviewed on inception of the assignment and may need to be adjusted, in agreement with all stakeholders.

4.0 Methodology and Reporting

The partnership is expected to consist of some primary research and consultations; however, the majority of the assignment is expected to be desk based.

The tasks outlined below will be conducted under the guidance of the Habitat Programme Manager for Bangladesh, the overall supervision of the Human Settlements Officer in the UN-Habitat Regional Office for Asia and the Pacific and in conjunction with the project focal point from UDD.

For day-to-day matters, the organisation will report to the Habitat Programme Manager for Bangladesh. Overall reporting will be to the Human Settlements Officer in UN-Habitat's Regional Office for Asia and the Pacific.

5.0 Scope of Work

The two expected results of the project's engagement in Bangladesh are:

- 1.) *Enhanced capacity and commitment of the national government in Bangladesh to address the urban dimension of climate change through national urban policies*
- 2.) *Enhanced capacity at the local level to mainstream climate change into planning*

This assignment consists of five main outputs (1.1, 1.2, 1.3, 2.1 and 2.2), listed below, with their relevant activities, that will contribute to achieving these expected results.

1.1) In-depth assessment of national urban related policy conducted, which identifies gaps, where climate change can be incorporated into urban legislation, and ways to address this.

Under this output, relevant activities are:

- In consultation with UDD and other government ministries, departments and agencies, update list of policy documents to be reviewed (based on Table 1, below)
- Undertake a desk review of all gathered documents
- Conduct individual consultation meetings with key government departments to gain deeper understanding of their rules and regulations

- Prepare draft policy review for submission and review
- Organise half-day meeting to organise comments and feedback on the review

Draft indicative list of policies to be reviewed and analysed. To be updated at the start of the partnership.

Type	Policy/Plan/Act	Date	Status	CC (and Urban) component
Urban	National Urban Sector Policy	2014	Draft	No direct CC component
	Urban and Regional Planning Act	2014	Draft	Provision to mainstream CC into land use planning
Climate/ Disaster	Bangladesh Climate Change Action Plan	2009	Official	Indirect urban component, but not one of the 6 pillars
	National Adaptation Programme of Action (NAPA)	2005	Official	
	National Plan for Disaster Management	2010-2015	Official	
	Disaster Management Act	2012	Official	
	Standing Orders on Disaster	2010	Official	Creates implementation arrangements
	National Disaster Management Policy	2015	Early stages	
Development / General	6 th 5 year plan	2011-2015	Official	
	7 th 5 year plan	2015-2019	Formulation	
	Perspective Plan for Bangladesh	2010-2021	Official	
	National Comprehensive Plan for the Whole Country	2015	Formulation	Planning guideline, thus urban-centric. Climate TBC
Sector	National Housing Policy	2008	Draft	No direct Integration of climate change
	Building codes	1993	Under review	No direct Integration of climate change
	National Land Use Policy	2001	Official	No direct Integration of climate change
	National Water Policy	1999	Official	No direct Integration of climate change
	Bangladesh Industrial Policy	2005	Official	No direct Integration of climate change
	Renewable Energy Policy of Bangladesh	2002	Official	EIA and mitigation focus. No specific (urban) adaptation component
	Environment Policy	1992	Official	No direct Integration of climate change
	The Bangladesh Delta Plan	2014	Draft	Yes. Specific to deltaic areas

1.2) Conduct a review of NGO, civil society and other development partner activities in climate change and urban development in Bangladesh

Under this output, relevant activities are:

- Conduct review, including consultation with relevant agencies, including coordinating bodies, local and national NGOs and other organisations
(This review has already been done in draft form, but needs to be expanded and finalised)

1.3) Identify capacity gaps and provide advisory services to enhance government capacity in Bangladesh

Under this output, relevant activities are:

- In discussion with key government stakeholders, identify where capacity gaps (considering human, financial, technical and institutional capacity) exist, and develop internal review report

2.1) Develop a guidance document for local government for mainstreaming climate change into development planning in the Bangladesh context

Under this output, relevant activities are:

- Organise a number of individual consultations with government agencies to draft guidance document
- Write-up guidance document in non-technical language, following a simple, step-by-step format
- One-day workshop to discuss and review draft guidance
- Incorporate feedback and finalise guideline

2.2) Provide support to build capacity at the local government level to mainstream climate change into development planning

Under this output, relevant activities are:

- Organise 1 (or 2) day workshop in Mymensingh to (re)introduce local officials to the project and to build capacity on the new draft guideline
- Facilitate knowledge transfer by bringing in another partner city to share experience of integrating climate change into local planning (especially in building and/or land use planning)
- Write a brief report of the workshop
- Ongoing, ad-hoc support to the city in using the guideline
- Conduct monitoring exercise to gain feedback from local officials on the guideline
- Incorporating comments from previous activity, update guideline and submit for official approval/finalisation

6.0 Deliverables

No.	Deliverables
0.	Inception report and work plan

Output 1.1

No.	Deliverables
1.1.1	Policy review document
1.1.2	Workshop concept note and Workshop completion report

Output 1.2

No.	Deliverables
1.5.1	NGO and civil society Review Document

Output 1.3

No.	Deliverables
1.3.1	Internal review report

Output 2.1

No.	Outputs
2.1.1	Workshop concept note and Workshop completion report
2.1.2	First version of the Local government's mainstreaming guidance document

Output 2.2

No.	Outputs
2.2.1	Workshop and learning event concept note and completion report
2.2.2	Progress report
2.2.3	Monitoring exercise report
2.2.4	Local government's mainstreaming guidance final document

7.0 Required qualifications and experience

- It is expected that academic and/or research institutions with a high level of urban climate change experience respond to this call.
- A good understanding of challenges and needs of cities in Bangladesh.
- A good understanding of the institutional and legislative actors in Bangladesh.
- An ability to prepare documents in English and Bengali. The deliverables will be prepared in English

8.0 Travel

The partner organisation will have appropriate registration in Bangladesh. No international travel will be supported under this agreement. Domestic travel requirements are to be included in the technical and financial proposal.

9.0 Payment

Payments will be based on deliverables over the partnership period. These payments depend on the final Agreement of Cooperation which will be based on this call and your technical and financial proposal.

Submission of Expression of Interest and Proposal

This Call for Expression of Interest will lead to an Agreement of Cooperation with either of following:

- Government institution
- Not-for-profit organisation; or
- Academic institution

Applications should include:

1. Cover memo (maximum 1 page)
2. Technical proposal including the elaboration of the methodology, timeline and implementation of the scope of work, information on the institution and CVs of key collaborators (in response to the required qualifications and experience).
3. Financial proposal, including in-kind contributions

At a later stage the successful applicant will have to produce (in case of not-for-profit organisation):

- Certified true copy of original certificate of registration/Incorporation or Charter in cases of educational institutions.
- Certified true copy of original Audited Account Statement for the last two years.
- Annual report.
- Certified true copy of proof of non-Profit.
- Copy of the Constitution or by-laws.

All applications should be sent to:

UN-Habitat Regional Office for Asia and the Pacific
ACROS Fukuoka, 8th Floor
1-1-1 Tenjin Chuo-ku, Fukuoka 810-0001 Japan
habitat.fukuoka@unhabitat.org

Please indicate the Proposal Title: **"Urban Climate Change Partnership for Bangladesh"**
in in your email subject.

Deadline for Applications: 30th of November 2015

Please note that applications received after the closing date stated above will not be given consideration.
Only short-listed organizations whose applications respond to the above criteria will be contacted

UN-HABITAT does not charge a fee at any stage of the recruitment process. If you have any questions concerning persons or companies claiming to be recruiting on behalf of these offices and requesting the payment of a fee, please contact: habitat.fukuoka@unhabitat.org

Appendix-P

**Memorandum of Understanding (MOU) Form Between Un-Habitat and
Urban Development Directorate (UDD): Mainstreaming climate Change into
Urban Polices**

উপ-পরিচালক (প্রোগ্রাম) / (বিশেষ)
প্রকল্প পরিচালক (MSDP) / (মাংগল)
প্রকল্প পরিচালক (স্ব-স্বায়ংসহ)
সিনিয়র প্রোগ্রামার (সিনিয়র) / (সিনিয়র-সিনিয়র)
সিনিয়র প্রোগ্রামার (সিনিয়র) / (সিনিয়র-সিনিয়র)
সিনিয়র প্রোগ্রামার (সিনিয়র) / (সিনিয়র-সিনিয়র)
সহকারী প্রোগ্রামার
সিনিয়র প্রোগ্রামার
সিনিয়র প্রোগ্রামার

AD
14/03/17



UN HABITAT REQUEST FOR MEMORANDUM OF UNDERSTANDING (MoU) FORM

FOR A BETTER URBAN FUTURE

MoU Number: 17-001

A. Organization Details

Name:
Urban Development Directorate (UDD)
Ministry of Housing and Public Works, Dhaka, Bangladesh

B. Summary of MoU	C. Financial Details (state currency)
To collaborate in strengthening the capacity of national governments and urban stakeholders to integrate climate change concerns into national urban policies and planning processes and promote joint programming to enhanced capacity of national governments to address the urban dimension of climate change in urban planning and policy interventions.	N.A.
Validity of MoU Starting: date of signature of last party	Ending: until terminated by either party

D. Payment Details (if any)

Phase/Output	Amount in USD
N.A.	N.A.
Total:	

E. Approvals:

	Name	Signature	Date
Requesting Officer	Laxman Perera	<i>[Signature]</i>	16/02/2017
PMO	Hasyim Hasyim	<i>[Signature]</i>	16/02/2017
Head Substantive Office	Yoshinobu Fukasawa	<i>[Signature]</i>	10-Mar-2017
Legal Officer	Saidou N'Dow		
Designated Signatory	Yoshinobu Fukasawa	<i>[Signature]</i>	10 Mar 2017



MEMORANDUM OF UNDERSTANDING

BETWEEN

THE UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME

AND

**URBAN DEVELOPMENT DIRECTORATE (UDD)
MINISTRY OF HOUSING AND PUBLIC WORKS, DHAKA, BANGLADESH**

PREAMBLE:

WHEREAS, the United Nations Human Settlements Programme (hereinafter referred to as **"UN-Habitat"**), established by the General Assembly of the United Nations by its resolution 32/162 of 19 December 1977, transformed into a Programme by its resolution 56/206 of 21 December 2001, having its Headquarters in Nairobi, Kenya. UN-Habitat is the coordinating agency within the United Nations System for human settlement activities, the focal point for the monitoring, evaluation and implementation of the Habitat Agenda, as well as the task manager of the human settlements chapter of Agenda 21, and in collaboration with governments, is responsible for promoting and consolidating collaboration with all partners, including local authorities and private and non-governmental organizations in the implementation of the New Urban Agenda and the Post-2015 Sustainable Development Goal (SDGs) in particular, Goal 11 of *"Making cities and human settlements inclusive, safe, resilient and sustainable"*;

WHEREAS, the Urban Development Directorate of the Government of the People's Republic of Bangladesh, (hereinafter referred to as the **"UDD"**) directly belonging to the Ministry of Housing and Public Works (hereinafter referred to as **"MoHPW"**) is committed to the join the programme on strengthening the capacity of national governments and urban stakeholders in the region to integrate climate change concerns into national urban policies and planning processes. To add local government representation, Mymensingh and Barisal City Corporation shall be taken as case study area;

WHEREAS, UN-Habitat and the Government as represented by UDD have agreed to collaborate in strengthening the capacity of national governments and urban stakeholders to integrate climate change concerns into national urban policies and planning processes and promote joint programming to enhanced capacity of national governments to address the urban dimension of climate change in urban planning and policy interventions;

WHEREAS, UN-Habitat and the Government as represented by UDD (hereinafter collectively referred to as the **"Parties"** and individually as the **"Party"**) recognizing the benefits of genuine, substantive cooperation and wishing to pursue such cooperation through enhancing the capacity to address the urban dimension of climate change in urban planning and policy interventions, have entered into this Memorandum of Understanding (hereinafter referred to as the **"MoU"**) in a spirit of trust and cooperation;

NOW THEREFORE, the Parties hereto hereby agree as follows:



ARTICLE I
Scope and Purpose

1. The purpose of this MoU is to provide a framework of cooperation within which UN-Habitat and the Government represented by UDD will collaborate to implement joint programming in the Government of the People's Republic of Bangladesh.
2. The collaboration between the Parties in the People's Republic of Bangladesh, will be implemented with a focus on:
 - (a) Enhanced capacity of national governments to address the urban dimension of climate change through national urban policies/legislative reform; and
 - (b) Enhanced commitment of national and local governments and other stakeholders to incorporate climate change concerns into national urban policies.
3. Subject to Article II, clause (5) herein below, and to their respective regulations, rules, policies, practices, procedures, the Parties shall collaborate and work together to enhance the capacity of national governments to achieve the common objective including development of a range of activities that leverage each other's comparative advantage to achieve mutual interest in accordance with their respective needs and objectives.
4. The following shall be the primary results of the collaboration in the Government of the People's Republic of Bangladesh:
 - (a) Provision of technical assistance, advisory services for mainstreaming climate change issues in urban planning through cooperation, coordination and advocacy;
 - (b) Collaboration in training and capacity building initiatives in integration of climate change issues in urban planning;
 - (c) Regular exchange of information among the parties regarding the development of urban climate related issues;
 - (d) Monitoring and review of the activities of the Urban and Regional Planning Department, Bangladesh University of Engineering and Technology engaged by ROAP, UN-Habitat for implementing the project for Mainstreaming Climate Change into Urban Policies under Agreement of Cooperation (Reference: AOC 16-006); and
 - (e) Facilitation of the organisation of national and regional level dissemination workshops in Bangladesh, as required.

ARTICLE II
General Responsibilities of the Parties

1. The Parties agree to carry out their respective responsibilities in accordance with the provisions of this MoU. The Parties agree to join efforts and to maintain close working relationships in order to achieve the objectives of this MoU.
2. The Parties shall keep each other informed of all relevant activities pertaining to this MoU and shall hold consultations at any time any Party considers it appropriate.
3. The Parties shall refrain from any action that may adversely affect the interests of the other Party and fulfil their commitments with fullest regard to the terms and conditions of this MoU and the

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principles of the United Nations and UN-Habitat.

4. Each party shall nominate a focal point for this collaboration as stated under **Article XI** ("*Notices*"), **clause (1)** herein below.

5. The Parties agree that this MoU and any work plan agreed to hereunder are neither fiscal nor funding obligations documents. Any commitment to transfer anything of value involving reimbursement or to provide funds, goods or services by the Parties for any agreed activity will be outlined in separate agreements that will be made in writing by representatives of the Parties and will be independently authorised by an appropriate authority of the funding party consistent with the regulations, rules, policies and practice of the Parties. The Parties agree that this MoU does not provide such authority.

ARTICLE III

Areas of Collaboration of the Parties

1. Subject to Article II, clause (5) herein above, the Parties will jointly collaborate on the implementation of strengthening the capacity of national governments and urban stakeholders in the region to integrate climate change concerns into national urban policies and planning processes including:

- (a) Enhanced capacity of national governments to address the urban dimension of climate change through national urban policies/legislative reform; and
- (b) Enhanced commitment of national and local governments and other stakeholders to incorporate climate change concerns into national urban policies.

ARTICLE IV

Specific Responsibilities of the Parties

1. Subject to Article II, clause (5) herein above, the specific responsibilities of UN-Habitat are as follows:

- (a) Provision of technical assistance, advisory services for mainstreaming climate change issues in urban planning through cooperation, coordination and advocacy;
- (b) Collaboration in training and capacity building initiatives in integration of climate change issues in urban planning;
- (c) Regular exchange of information among the parties regarding the development of urban climate related issues; and
- (d) Facilitation of the organisation of national and regional level dissemination workshops in Bangladesh, as required.

2. Subject to Article II, clause (5) herein above, the specific responsibilities of UDD in the Government of the People's Republic of Bangladesh are as follows:

- (a) Monitoring and review of the activities of the Urban and Regional Planning Department, Bangladesh University of Engineering and Technology engaged by ROAP, UN-Habitat for implementing the project for Mainstreaming Climate Change into Urban Policies under Agreement of Cooperation (Reference: AOC 16-006);



- (b) Collaborate with UN-Habitat to identify areas for cooperation and any decision shall be based on availability of funding at the respective agencies; and
- (c) Provide technical assistance support to implement the activities under this MoU.

ARTICLE V
Monitoring and Evaluation

1. The Parties shall maintain regular close consultations to monitor and review the progress of activities for each joint project that maybe agreed upon.
2. The Parties will share with each other all relevant information and documents, including research, reports and any other information related to the activities, outputs and finally, the impact of this collaboration.
3. The Parties may wherever possible and as appropriate, undertake joint missions with respect to the project.
4. The Parties shall keep the United Nations Resident Coordinator in the Government of the People's Republic of Bangladesh, if any, fully informed of all actions undertaken by them in carrying out this MoU. UN-Habitat will utilise the capacity of the Habitat Programme Manager based in Dhaka, Bangladesh as necessary and appropriate for the effective implementation of the project, (if applicable).

ARTICLE VI
Termination

1. This MoU may be terminated by either Party giving the other party a written notice of thirty (30) days prior to its intention to terminate. In the event of termination, the Parties will take the appropriate steps to bring activities under this MoU to a prompt and orderly conclusion.
2. The termination of this MoU shall not affect any other agreement already entered into by either Party.

ARTICLE VII
Amendments

1. This MoU may be modified by written agreement between the Parties hereto. Any relevant matters for which no provision is made in this MoU will be settled by the Parties in keeping with the general objectives of the MoU and in a manner that is conducive to continued good relations.

ARTICLE VIII
Dispute Settlement

1. Any dispute arising between UN-Habitat and the Government as represented by UDD concerning the interpretation or application of this MoU, except for a dispute subject to Section 30 of the Convention or to any other applicable agreement, that is not settled through negotiation or another agreed form of settlement shall be submitted, at the request of either Party for final decision to a tribunal of three arbitrators, one to be named by the Secretary-General of the United Nations, one to be named by the Government as represented by UDD and the third, who shall be the chairman, to be chosen by the first two.

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2. If either Party fails to appoint an arbitrator within sixty (60) days of the appointment by the other party, or if these two should fail to agree on the third arbitrator within sixty (60) days of their appointment, the President of the International Court of Justice may make any necessary appointments at the request of either Party.
3. Except as otherwise provided for by the Parties, the Tribunal shall adopt its own rules of procedure, provide for the reimbursement of its members and the distribution of expenses between the Parties, and take all decisions by a two-thirds majority. Its decision on all questions of procedure and substance shall be final and, even if rendered in default of one of the parties, be binding on both Parties.

ARTICLE IX
Privileges and Immunities

1. Nothing in or relating to this MoU shall be deemed a waiver, express or implied, of any of the privileges and immunities of the United Nations, including UN-Habitat.

ARTICLE X
Use of the Name, Emblem or Media

1. Neither Party will use the name or emblem of the other Party, or an abbreviation thereof, in connection with its business or otherwise, without the express prior written permission by a duly authorized representative of the Party in each case.
2. Neither Party has the authority, express or implied, to make any public statement on behalf of the other Party, and all press releases issued in relation to this MoU shall be approved in writing in advance by the Parties before being issued.

ARTICLE XI
Notices

1. Any notice required to be given by either Party under this Agreement shall be given in writing and shall be deemed given when actually received by the other Party, to the following addresses below:

<u>To UN-Habitat</u>	<u>To of Government as represented by UDD</u>
For Operational Matters: Names: Md Aktharuzaman Title: Habitat Programme Manager Address: UDD, 82 Segun Bagicha Telephone Number: +8801714066289 Email Address: zamanunhabitatbd@gmail.com	For Operational Matters: Names: Quazi Md. Fazlul Haque Title: Senior Planner Address: 82, Segunbagicha, Dhaka-1000 Telephone Number: +880-2-9572281 + 880-1-711033800 Email Address: fhaq321@yahoo.com

Tg.

[Handwritten signature]



ARTICLE XII
Confidential Nature of Documents

1. Information that is considered proprietary by either Party and that is shared or disclosed to the other, and is designated as confidential, shall be held in confidence by that Party and shall be used for the purpose for which it was disclosed.

ARTICLE XIII
Copyright, Patents and Proprietary Rights

1. Except as is otherwise expressly provided in writing in the MoU, the Parties shall be entitled to their own intellectual property and other proprietary rights including, but not limited to, patents, copyrights, and trademarks, with regard to products, processes, inventions, ideas, know-how, or documents and other materials which bear a direct relation to or are produced or prepared or collected in consequence of, or during the course of, the performance of this MoU.

2. To the extent that any such intellectual property or other proprietary rights consist of any intellectual property or other proprietary rights of either Party: (i) that pre-existed the performance by either Party under this MoU, or (ii) that either Party may develop or acquire, or may have developed or acquired, independently of the performance of this MoU, neither Party shall claim any ownership interest thereto, without the express prior written permission of a duly authorized representative of the Party in each case.

ARTICLE XIV
Indemnity

1. Government as represented by UDD shall indemnify, hold and save harmless, and defend at its own expense, UN-Habitat, its officials, agents and employees, from and against all suits, proceedings, claims, demands, losses and liability of any kind, including their costs and expenses, arising out of or omissions of Government as represented by UDD or Government as represented by UDD's employees, officers, agents or sub-contractors, in the implementation of this MoU. This provision shall extend, *inter alia*, to claims and liability in the nature of worker's compensation, products liability and liability arising out of the use of patented inventions or devices, copyrighted material or other intellectual property by Government as represented by UDD, its employees, officers, agents or sub-contractors. The obligations under this Article do not lapse upon termination of this MoU.

ARTICLE XV
Officials not to Benefit

1. Government as represented by UDD warrants that it has not and shall not offer any direct or indirect benefit arising from or related to the implementation of this MoU or the award thereof to any representative, official, employee, or other agent of UN-Habitat. The Parties acknowledge and agree that any breach of this provision is a breach of an essential term of this MoU.

ARTICLE XVI
Conflict of Interest

1. The Parties hereto warrant that at the time of signing this MoU no conflict of interest exists or is likely to arise in the implementation of its obligations under this MoU.

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2. If a conflict of interest arises or appears likely to arise during the duration of this MoU, the parties hereto shall:

- (a) Immediately notify each other;
- (b) Make full disclosure of all relevant information relating to the conflict; and
- (c) Take such steps as reasonably required to resolve or otherwise deal with the conflict.

ARTICLE XVII
Legal Status of the Parties

1. Nothing contained in or relating to this MoU shall be construed to create a legal partnership, a joint venture, employment or agency relations between the Parties.
2. The officials, representatives, employees, or subcontractors of either Party shall not be considered in any respect as being employees or agents of the other Party.
3. The collaboration between the Parties under this MoU shall be on a non-exclusive basis

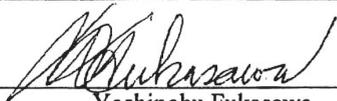
ARTICLE XVIII
Entry into Force

1. This MoU shall enter into force upon signature by the authorized representatives of the Parties, being effective from the date of the latest signature and shall remain valid from the effective date of this MoU, unless earlier terminated by either Party in accordance with **Article VI** ("**Termination**") above.

ARTICLE XIX
Entire Agreement

1. This MoU constitutes the entire understanding of UN-Habitat and Government as represented by UDD with respect to its subject matter and supersedes all oral communications and prior written documents.

IN WITNESS WHEREOF, the undersigned, duly appointed representatives of UN-Habitat and the Government have signed this MoU in two (2) originals at the place(s) and on the date(s) herein below indicated:

For UN-Habitat	For The of Government as represented by UDD
 Yoshinobu Fukasawa, Regional Director, Regional Office for Asia and the Pacific	 Dr-Ing. Khurshid Zabin Hossain Taufique, Director Urban Development Directorate (UDD)
Place: Fukuoka, Japan	Place: Dhaka, Bangladesh
Date: <u>10 Mar 2017</u>	Date: <u>13/03/2017</u>